

US 6 Bridges Design Build Project

BR 0061-083

Sub Account Number 18838 (CN)

Hazardous Materials Technical Report

Prepared for:
Colorado Department of Transportation
Federal Highway Administration

Prepared by:

**PARSONS
BRINCKERHOFF**



August 2012
Revised October 2012

Contents

1.	PROJECT BACKGROUND	1
1.1	The I-25 Valley Highway Environmental Impact Statement	1
1.2	US 6 Bridges Design Build Project	3
1.3	Relationship of the I-25 Valley Highway Project and the US 6 Bridges Design Build Project	5
1.3.1	Phasing of the FEIS Preferred Alternative.....	5
1.3.2	Additional Project Elements in the Project.....	5
2.	HAZARDOUS MATERIALS ANALYSIS	8
2.1	Purpose	8
2.2	Methodology.....	8
2.3	Site Reconnaissance.....	10
2.3.1	Windshield Survey	10
2.3.2	Limited Subsurface Investigation.....	10
2.4	Agency Database Review	11
3.	HAZARDOUS MATERIALS FINDINGS AND RECOMMENDATIONS ANALYSIS OF US 6 PROJECT FOOTPRINT	13
3.1	Summary of Hazardous Materials Analysis per the 2005 MESA, FEIS, and 2011 ISA	13
3.1.1	Findings	13
3.1.2	Additional Issues and Findings.....	13
3.1.3	Recommendations	17
3.2	Summary of 2012 Hazardous Materials Analysis.....	20
3.2.1	Findings	20
3.2.1.1	Summary of Findings of the Limited Subsurface Investigation	20
3.2.1.1.1	Volatile Organic Compounds.....	20
3.2.1.1.2	RCRA Metals.....	20
3.2.1.1.3	Limited Subsurface Investigation Conclusions.....	21
3.2.1.2	LUST Sites within Project Footprint	21
3.2.1.3	LUST Sites within the Study Area of the Project Footprint.....	39
3.2.1.4	Asbestos and Lead Based Paint Analysis on US 6 Bridge Structures	44
4.	MITIGATION RECOMMENDATIONS	45
4.1	As Presented in FEIS and/or ROD.....	45
4.1.1	Right-of-Way Acquisition	45
4.1.2	Known Soil and Groundwater Contamination.....	45
4.2	Changes Based on the Project	45
4.2.1	Soil and Groundwater Contamination Investigations for Proposed ROW Acquisition.....	45
4.2.2	Other Soil and Groundwater Contamination.....	46
5.	REFERENCES	47

APPENDIX A	2012 FIRST SEARCH EDR
APPENDIX B	PHOTO LOG
APPENDIX C	Limited Subsurface Investigation

Figures

Figure 1: I-25 Valley Highway Project Preferred Alternative	2
Figure 2: Project	4
Figure 3: Valley Highway EIS Phased Implementation of the Preferred Alternative.....	6
Figure 4: Project Elements	7
Figure 5: ROW / Hazmat Conditions	22
Figure 6: High Risk and Landfill Sites.....	44

Tables

Table 1. Database Descriptions and Minimum Search Distances	12
Table 2. Summary of Sites along US 6 with Potential and Recognized Environmental Conditions identified in the 2005 MESA and FEIS	15
Table 3. Summary of Recommendations for Sites Identified along US 6 per the 2005 MESA and FEIS	18
Table 4. Summary of Recommendations for Sites Identified along US 6 per the 2012 Hazardous Materials Analysis.....	23
Table 5. Summary of High Risk Sites	43

List of Abbreviated Terms

ASTM	American Society of for Testing and Materials
BMP	best management practice
BNSF	Burlington Northern Santa Fe
CCD	City and County of Denver
CDOT	Colorado Department of Transportation
CDPHE	Colorado Department of Public Health and Environment
CDPS	Colorado Discharge Permit System
WQCD	Colorado Water Quality Control Division
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CHS	Colorado Historical Society
CML	Consolidated Main Line railroad
CO	carbon monoxide
CSEV	Colorado Soil Evaluation Values
DRCOG	Denver Regional Council of Governments
EB	eastbound
EIS	Environmental Impact Statement
EPA	US Environmental Protection Agency
ERNS	Emergency Response Notification System
FHWA	Federal Highway Administration
I-25	Interstate 25
IGA	intergovernmental agreement
ISA	Initial Site Assessment
ITS	intelligent transportation system
LOS	level-of-service
LUST	Leaking Underground Storage Tank
MESA	Modified Environmental Site Assessment
NB	northbound
NEPA	National Environmental Policy Act
NRHP	National Register of Historic Places
OPS	Colorado Department of Labor and Employment Division of Oil and Public Safety
PM	afternoon/evening
PM ₁₀	particulate matter less than 10 microns in size
PSI	Preliminary Site Investigation
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study (aka Phase II)
ROD	Record of Decision
RTD	Regional Transportation District
RTP	Regional Transportation Plan
SB	southbound
SWF/LF	Solid Waste Facilities/Landfill Sites
US 6	US 6 th Avenue
USC	US Code
UST	Underground Storage Tank
USDOI	US Department of Interior
WB	westbound

1. PROJECT BACKGROUND

The US 6 Bridges Design Build Project (herein referred to as the Project) includes modifications to the roadway, interchanges, and bridges along 6th Avenue (US 6) between Sheridan Boulevard and the BNSF Railway in Denver, Colorado. The Colorado Department of Transportation (CDOT) is preparing a Reevaluation and Record of Decision (ROD) to document the impacts of and mitigation for the Project.

1.1 The I-25 Valley Highway Environmental Impact Statement

The Federal Highway Administration (FHWA) and CDOT prepared a Final Environmental Impact Statement (FEIS) in 2006 and a ROD in 2007 for the Interstate 25 (I-25) Valley Highway Project, located in Denver, Colorado. The Valley Highway Project includes the reconstruction of I-25 and reconfiguration of interchanges from Logan Street to United States Highway (US) 6, US 6 from I-25 to Federal Boulevard, and the crossing of Santa Fe Drive and Kalamath Street at the Consolidated Main Line railroad. The Preferred Alternative, as described in the FEIS, includes the following elements:

- I-25 Mainline: Widening of I-25 to provide a consistent section with four through lanes plus auxiliary lanes in each direction throughout the Project Area
- I-25/Broadway: Tight diamond interchange
- I-25/Santa Fe Drive: Single point urban interchange with a flyover ramp for northbound Santa Fe Drive to northbound I-25
- I-25/Alameda/Santa Fe/Kalamath: Offset partial urban interchange at I-25 and Alameda Avenue; Santa Fe Drive and Kalamath Street grade separated under the railroad close to their current alignments
- US 6: Ramp improvements at the I-25/US 6 interchange; closure of the Bryant Street interchange; diamond interchange at US 6/Federal Boulevard with slip ramps to Bryant Street and a braided ramp from Federal Boulevard to eastbound US 6; reconstruction of US 6 with collector-distributor roads/auxiliary lanes throughout the Project Area.

The Preferred Alternative of the Valley Highway Project is shown in Figure 1.

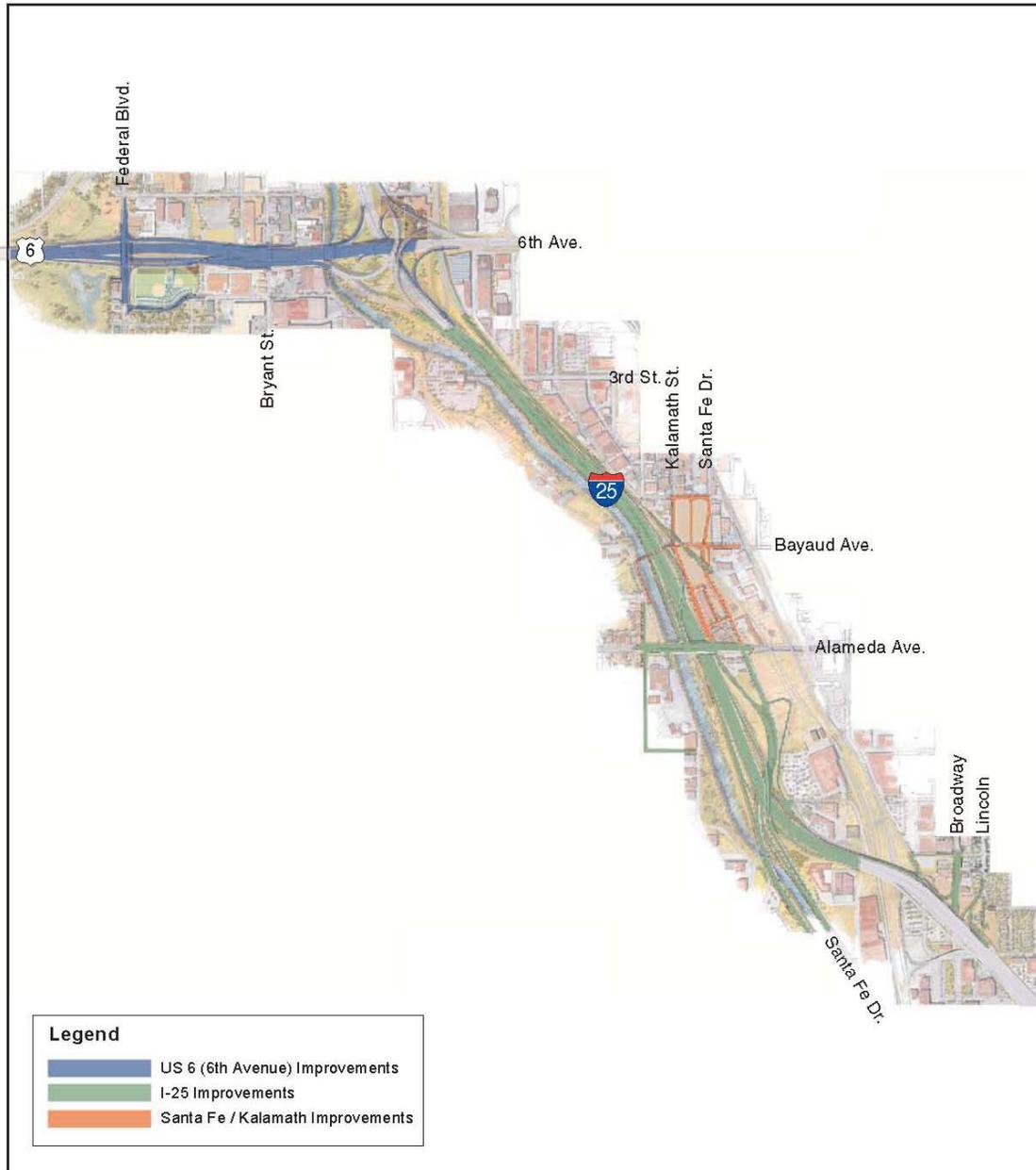


Figure 1: I-25 Valley Highway Project Preferred Alternative

1.2 US 6 Bridges Design Build Project

The Project includes the reconstruction of US 6, the reconfiguration of interchanges from Federal Boulevard to I-25, reconstruction of the US 6 bridges from Federal Boulevard to the bridge over the BNSF Railway. The Project includes the following elements:

- The replacement of five bridges along US 6: Federal Boulevard, Bryant Street, South Platte River, I-25, and BNSF Railway. Three of these bridges are in poor condition and the other two are functionally obsolete. The Project would also add a tunnel immediately east of I-25 under US 6 to separate traffic on northbound I-25 from traffic exiting the interstate to travel east and west on US 6.
- Ramp improvements at the I-25/US 6 interchange, closure of the westbound (WB) US 6 to Bryant Street ramp, a diamond interchange at US 6/Federal Boulevard with slip ramps to Bryant Street, and a braided ramp from Federal Boulevard to eastbound (EB) US 6.
- Reconstruction of US 6 with collector-distributor roads/auxiliary lanes from Federal Boulevard to the BNSF Railway bridge structure.
- Conversion of 5th Avenue to two-way traffic from Federal Boulevard to Decatur Street
- Widening of Federal Boulevard, from five to six lanes, from 5th to 7th Avenues to accommodate current and future improvements.
- Pavement resurfacing of US 6 from Knox Boulevard to Sheridan Boulevard
- In-kind replacement of impacted facilities for Barnum East Park.
- A bicycle/pedestrian bridge structure over US 6, connecting Barnum North Park and Barnum Park (also known as Barnum Park South, and herein referred to as Barnum Park South).
- Upgrading portions of the South Platte River Trail to current standards.

Figure 2 shows the Project.

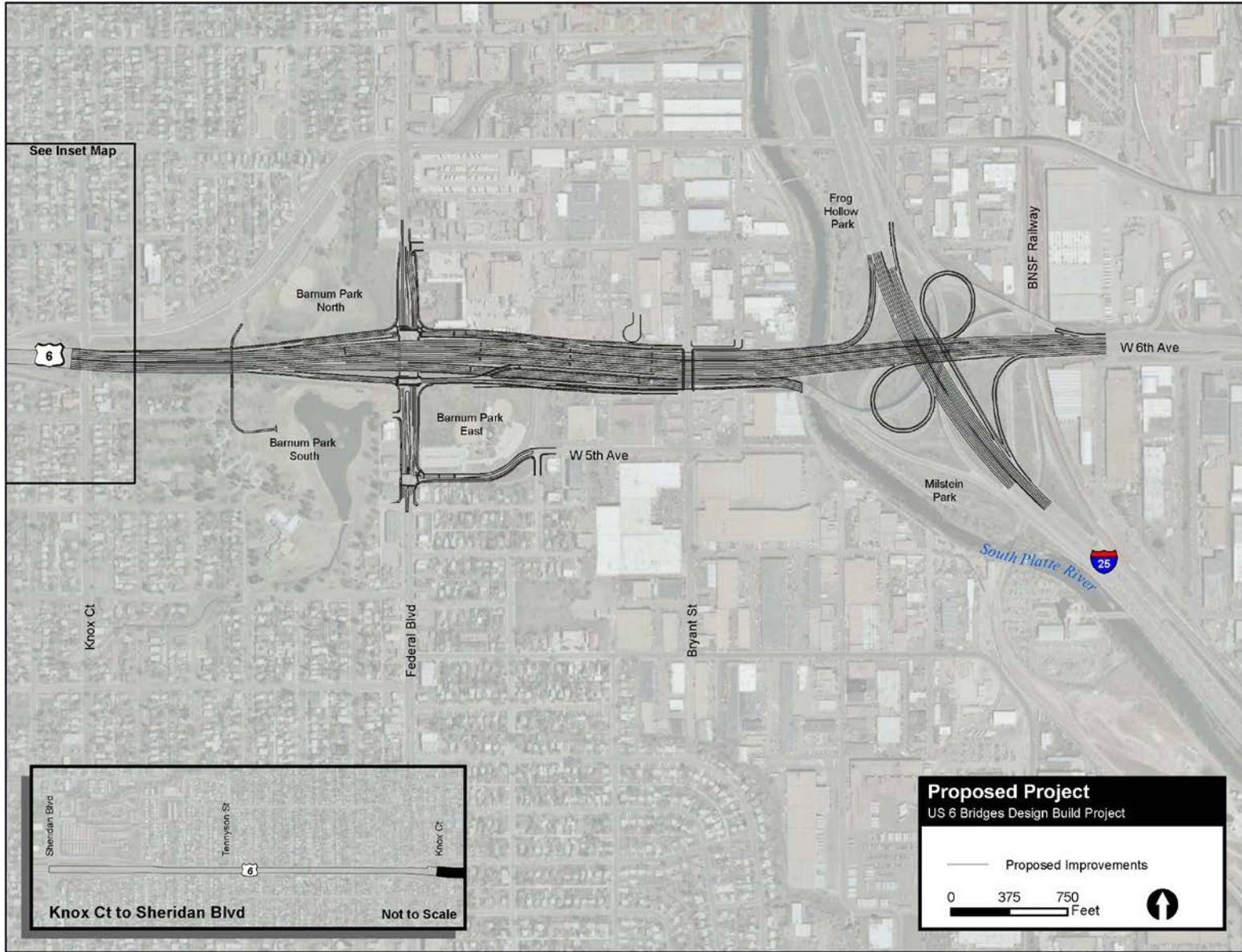


Figure 2: Project

1.3 Relationship of the I-25 Valley Highway Project and the US 6 Bridges Design Build Project

At the time of the FEIS, funding had not been identified for the entire Preferred Alternative. Although budget placeholders were included in the 2030 Regional Transportation Plan (RTP), these budgets fell short of the estimated cost of the Preferred Alternative. Therefore, FHWA and CDOT planned for a phased implementation of the Preferred Alternative. These six phases are outlined in Chapter 7 of the FEIS. The Reevaluation and ROD for the Project will reevaluate part of Phase 1 (the part including the US 6/Federal Boulevard interchange) as presented in the 2007 ROD, and provide a decision for Phase 5 of the Valley Highway Project. The Reevaluation and ROD for the Project will also address four new project elements, which were not part of the FEIS. Due to the minor environmental significance and nature of these additional components, they are included in the Reevaluation and ROD and will not affect the independent utility, logical termini, or Preferred Alternative of the Valley Highway Project.

1.3.1 *Phasing of the FEIS Preferred Alternative*

The Project includes elements of two of the six construction phases—Phase 1 and Phase 5—from the Valley Highway Project. A decision on construction Phase 1 of the Valley Highway Project, which included the US 6/Federal Boulevard Bridge and ramps, excluding the braided ramp, was made in the 2007 ROD. Figure 3 shows the phases of the Valley Highway Project’s Preferred Alternative and Figure 4 shows the Project Elements and how they relate to the FEIS phasing.

1.3.2 *Additional Project Elements in the Project*

At this time, the Project includes four additional elements that were not included in the FEIS or 2007 ROD:

- The reconstruction of the southbound (SB) I-25 to EB US 6 ramp;
- A bicycle/pedestrian bridge structure over US 6, connecting Barnum North and Barnum South parks;
- Reconstruction of the US 6 bridge over the BNSF Railway; and
- Pavement resurfacing of US 6 between Sheridan Boulevard and Knox Court.

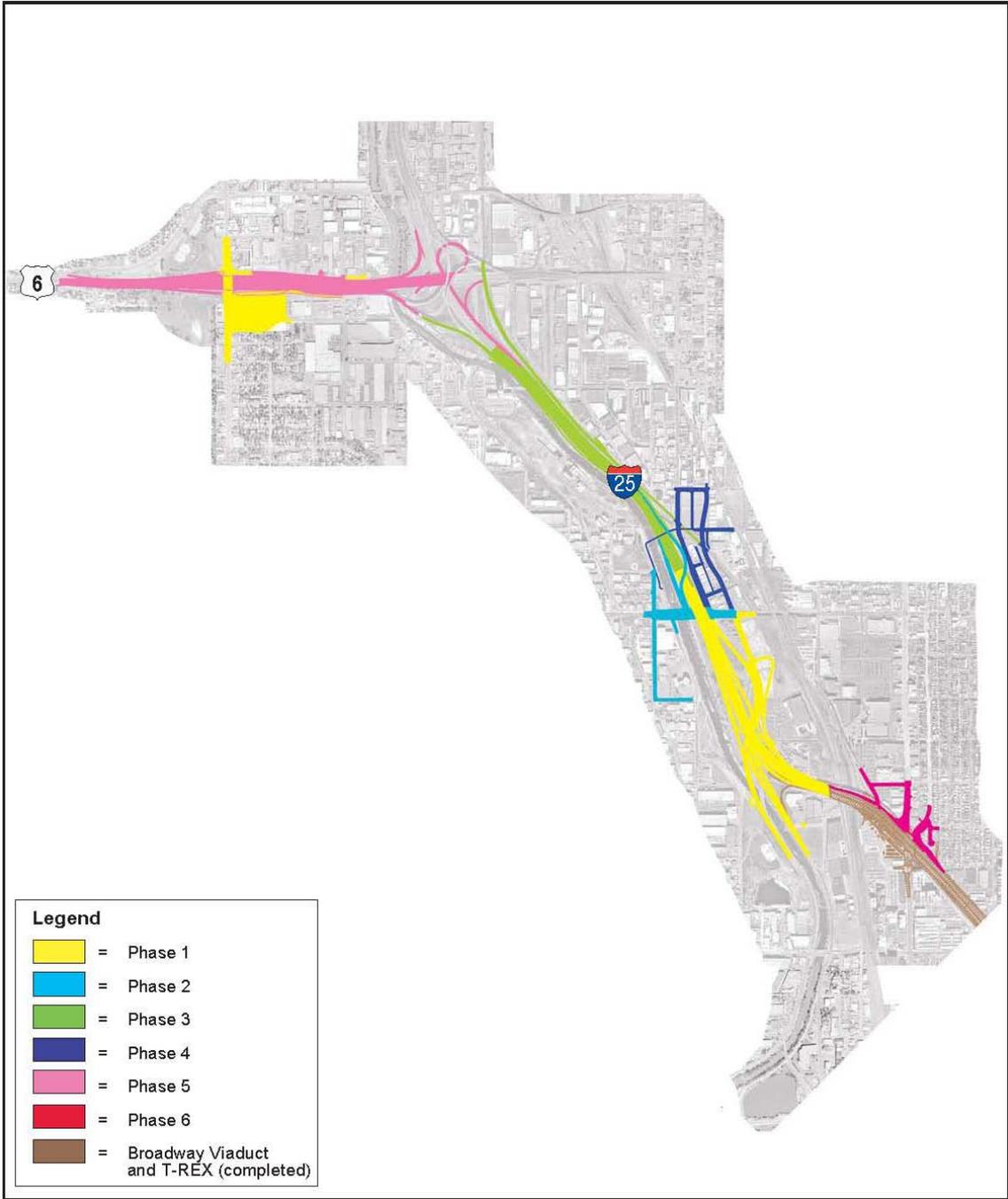


Figure 3: Valley Highway EIS Phased Implementation of the Preferred Alternative

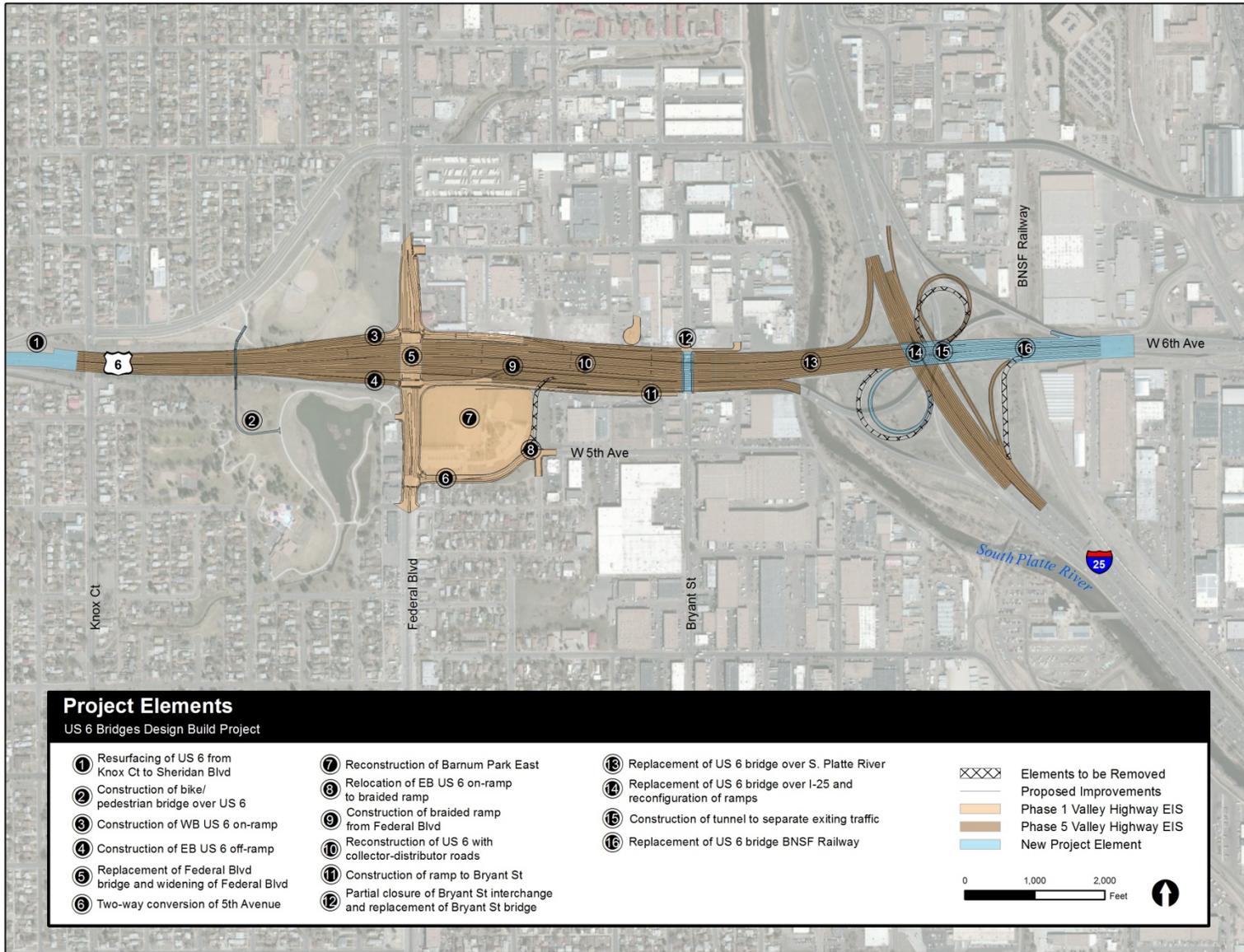


Figure 4: Project Elements

2. HAZARDOUS MATERIALS ANALYSIS

2.1 Purpose

This report discusses the potential for soil and groundwater impacts to be encountered within the Proposed Project area. The purpose of this report is to present available environmental assessment data for sites that are in the Project area that could affect worker safety, or result in additional costs due to managing hazardous waste or petroleum impacts. Excavation and drilling activities associated with the Project Preferred Alternative have the potential to encounter soil and groundwater that have been impacted by petroleum products or releases of hazardous substances. Other environmental issues such as asbestos or lead paint may be encountered during the demolition of the existing bridges and other structures.

Several environmental assessments have been conducted to evaluate potential environmental conditions and recognized environmental conditions where releases of hazardous substances may have resulted in a hazardous waste or releases of petroleum products have resulted in the creation of a special waste that may require additional characterization, handling, and proper disposal.

Felsburg Holt & Ullevig (FHU), acting on behalf of the Colorado Department of Transportation (CDOT), conducted a Modified Environmental Site Assessment (MESA) in 2005 for the Valley Highway Project in support of the 2006 Environmental Impact Statement (EIS) and 2007 Record of Decision (ROD). In addition, Pinyon Environmental Engineering Resources, Inc. completed an Initial Site Assessment (ISA) in 2011 near the US 6 Bridge over the Burlington Northern Santa Fe (BNSF) Railroad to evaluate the potential release of hazardous materials or petroleum products that may have been released into the subsurface. The purpose of this hazardous material analysis was done in support of obtaining environmental clearance for the US 6 Bridges Design Build project (Project), which is part of the overall Valley Highway Project.

The Project is in an area of Denver that has been developed since the late 1800's and early 1900's. Land use in this area has changed over time and has included various commercial and industrial activities along US 6, I-25, and Federal Boulevard. Use of hazardous substances such as solvents and metals at these businesses may have resulted in the release of these substances resulting in a hazardous waste. Underground storage tanks with the potential for releases of petroleum products to impact subsurface soil and groundwater are a concern. Additionally areas outside the Project along the South Platte River were historically used as landfills that were not designed or constructed with liners or other measures that prevent soil and groundwater impacts. These activities have the potential to have adversely impacted soil and groundwater within the Project area; and therefore, could impact the Project elements listed above. A summary of the methodologies and screening procedures implemented for this hazardous materials analysis is described in the following paragraphs.

2.2 Methodology

The methodologies used during the hazardous waste analysis primarily followed the procedures outlined in the 2005 MESA, which were based on the American Society for Testing and Materials (ASTM)

Standard Practice for Environmental Site Assessments E 1527-00 (ASTM, 2000), CDOT guidance (CDOT, 2002d), and through consultation with CDOT and CDPHE (FHU, 2003b). The methodology used the older ASTM E 1527-00 standard rather than the current E 1527-05 standard and EPA's All Appropriate Inquiry (40 CFR Part 312) since there are requirements in the newer standard that would be impractical to complete for a corridor study, and because the primary reason for performing these activities is to identify areas of financial risk rather than qualifying for one of the three Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) liability protections. The scope of work was intended as an evaluation for construction activities to encounter hazardous waste rather than conducting an ASTM compliant Phase I environmental site assessment, although there are elements that are common to both such as identifying recognized environmental conditions.

ASTM defines a **recognized environmental condition** as "the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicated an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water of the property". The term includes hazardous substances or petroleum products even under conditions in compliance with laws. Due to the limitations and nature of the 2005 MESA and this hazardous waste analysis, the term **potential environmental condition** has been used to identify properties where recognized conditions may be present but could not be confirmed without additional inspection or investigation, which was beyond the scope of the 2005 MESA and this hazardous waste analysis. Properties identified in this analysis are rated as either a site with **potential environmental conditions**, or **recognized environmental conditions**.

Recognized environmental conditions do not include de minimis conditions. ASTM defines these as "conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies."

Petroleum products are included within the scope of the practice (i.e., conducting environmental site assessments) because they are of concern with respect to many parcels of commercial real estate and current custom and usage to include an inquiry into the presence of petroleum products when doing an environmental site assessment of commercial real estate. Inclusion of petroleum products within the scope of the standard is not based upon the applicability, if any, of CERCLA to petroleum products.

The following actions were conducted in support of the hazardous waste analysis for the Project.

- Reviewed the 2005 MESA, FEIS, 2007 ROD, 2011 ISA, and any other relevant studies/documents prepared for the Project;
- Obtained an updated environmental database search (dated April 30, 2012) of local, state, and federal environmental agency databases within a maximum distance of one mile of the centerline of the Valley Highway Project footprint (e.g., from Federal Boulevard to the US 6 Bridge over the BNSF) as dictated by the CDOT guidance and ASTM Standard E1527-00;

- Reviewed relevant agencies files and/or agency websites of sites identified as having a **potential** and/or **recognized environmental conditions** associated with the Project footprint,
- Reviewed, as deemed necessary, property ownership of the sites with **potential** and/or **recognized environmental conditions** associated with the Project footprint;
- Performed limited site reconnaissance of sites previously identified in the 2005 MESA as sites with **potential** and/or **recognized environmental conditions** associated with the Project footprint;
- Performed limited site reconnaissance of any new sites identified in the 2012 environmental database search of local, state, and federal environmental agency databases with **potential** and/or **recognized environmental conditions** associated with the Project footprint; and;
- Olsson Associates conducted a limited subsurface investigation in December 2011 in conjunction with geotechnical borings advanced by Rocksol and Dakota Drilling of Denver. Olsson Associates conducted a second limited subsurface investigation in July 2012 along the US 6 and Federal Boulevard right-of-ways to assess recognized environmental conditions in these areas.

2.3 Site Reconnaissance

2.3.1 *Windshield Survey*

A site reconnaissance was performed in May 2012 to evaluate environmental conditions of sites with **potential** and/or **recognized environmental conditions** located within and/or adjacent to (within 100 feet of) the US 6 Bridge Project footprint. The site reconnaissance included sites previously identified in the 2005 MESA and any new sites identified in the 2012 environmental database as sites with **potential** and/or **recognized environmental conditions** associated with the US 6 Bridge Project footprint. For locations of sites and areas with environmental conditions refer to Figure 4.13-1 and Figure 4.13-4, respectively, located in the FEIS. As stated in the 2005 MESA, individual sites were typically not physically inspected during the site reconnaissance due to the size of the Project footprint and site access issues. The information regarding environmental conditions of sites obtained during the site reconnaissance was limited to “windshield surveys” and focused on visual areas of chemical and petroleum usage, storage, and discharges.

2.3.2 *Limited Subsurface Investigation*

A limited subsurface investigation and the installation of temporary groundwater monitoring wells were conducted in December 2011 in conjunction with geotechnical borings advanced by Rocksol. Subsurface soils from a total of six of the geotechnical borings drilled for retaining walls were collected for laboratory analysis. The retaining wall borings were selected since they were advanced to depths where groundwater was expected to be encountered based on a review of the State Engineer’s office records for existing water wells in the area. The six retaining wall borings were completed as temporary monitoring wells (RW 1-2, RW2-1, RW 3-2, RW 5-1, RW 6-1, and RW 7-1). These wells were installed along the US 6 right-of-way from the interchange with I-25 to approximately the Bryant Street bridge on December 7, December 9, December 12, and December 20, 2011.

Fluid level measurements and field parameters were measured in all six of these wells prior to sampling. Grab groundwater samples were collected all six monitoring wells on January 4, 2012. The results indicated that the subsurface soil and groundwater encountered in these borings were not significantly impacted. Metals concentrations may be related to anthropogenic sources or they may be due to elevated natural background, or a combination.

Olsson Associates conducted a limited subsurface investigation in July 2012 in the US 6 and Federal Boulevard right-of-way. This was done to identify areas adjacent to, or within the Project footprint that may have contaminated soils and/or groundwater, potentially impacting the construction of the Project. During the limited subsurface investigation, twelve (12) temporary monitoring holes were drilled along the Project footprint west of Bryant Street with soil and groundwater samples collected at each of the test hole locations. The location of the test holes are shown in Figure 1 of the Limited Subsurface Investigation Report, which is provided in **Appendix C**.

The collected soil and groundwater samples were submitted to a laboratory for analysis and were tested for petroleum hydrocarbon constituents benzene, toluene, ethylbenzene, and total xylenes (BTEX) by Method SW8260, total concentrations of the eight Resource Conservation and Recovery Act (RCRA) Metals by SW 6020/SW 7471A, and percent moisture by SW 3550. A summary of the findings of the limited subsurface investigation is provided in Section 3.2.1.1 of this report.

Groundwater level measurements were taken in the six temporary monitoring wells installed in December 2011, and the 12 monitoring wells (MH-1 through MH-12) installed in July 2012; however, groundwater samples were only collected from the 12 newly installed wells.

2.4 Agency Database Review

A review of local, state, and federal database records for information relating to the Project footprint was conducted. The approximate minimum search distance for each database is identified in **Table 1**. The approximate minimum search distance was performed according to ASTM Standard E1527-00 unless expanded according to CDOT guidance. The CDOT approximate minimum search distance is equivalent to or more stringent than the ASTM approximate minimum search distance.

Table 1. Database Descriptions and Minimum Search Distances

Database	ASTM Approximate Minimum Search Distance (mile)	CDOT Approximate Minimum Search Distance (mile)	Radius Searched (mile)
Federal National Priorities List (NPL) EPA's database of uncontrolled or abandoned hazardous waste sites identified for priority remedial actions under the Superfund Program.	1.0	-	1.0
Federal Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Compilation by the EPA of sites at which the potential exists for contamination originating from on-site hazardous substance storage or disposal. Sites designated as "NFRAP" indicate that No Further Remedial Action is Planned.	Site	0.25	0.25
Federal Resource Conservation and Recovery Act (RCRA) treatment, storage, or disposal (TSD) facilities RCRA permitted TSD facilities	1.0	1.0	1.0
Federal Resource Conservation and Recovery Information System (RCRIS) Facilities that are regulated based on current hazardous waste generation management activities.	0.5	1.0	1.0
Federal RCRA Corrective Action (CORRACTS) facilities Sites identified as needing Corrective Action after a release of a hazardous waste or constituent into the environment from a RCRA facility.	0.5	1.0	1.0
Federal/State Emergency Response Notification System (ERNS) List Database of public complaints and reports of unverified releases or incidents.	Site and Adjoining Properties	0.25	0.25
State Voluntary Cleanup Programs (VCUP) Sites being addressed under the Colorado Department of Public Health and Environment (CDPHE) Voluntary Cleanup Program (VCUP).	1.0	1.0	1.0
State Solid Waste Disposal (SWF) and/or Landfill (LF) sites Inventory of solid waste and landfill facilities.	0.5	1.0	1.0
State Historical Landfills sites Inactive landfill sites (including sites known to generate methane) and illegal dump sites.	0.5	1.0	1.0
State Above Ground Storage Tank (AST)/Underground Storage Tank (UST) List of sites that registered the presence of ASTs/USTs with the Colorado Department of Labor and Employment Division of Oil and Public Safety (OPS)	Site and Adjoining Properties	0.25	0.25
State Leaking Underground Storage Tanks (LUST) List of closed or unremediated reported LUSTs.	0.5	1.0	1.0

Source: 2005 MESA and FEIS

3. HAZARDOUS MATERIALS FINDINGS AND RECOMMENDATIONS ANALYSIS OF US 6 PROJECT FOOTPRINT

3.1 Summary of Hazardous Materials Analysis per the 2005 MESA, FEIS, and 2011 ISA

3.1.1 Findings

The 2005 MESA and FEIS identified sixteen (16) properties (three former landfill locations) along the Project footprint as sites with **potential** and **recognized environmental conditions**. These sites included Underground Storage Tank (UST) sites, Leaking Underground Storage Tank (LUST) sites, Resource Conservation and Recovery Act (RCRA) generators, Emergency Response Notification System (ERNS) sites, and Solid Waste Facilities/Landfill Sites (SWF/LF). Several of the identified sites and/or properties along the Project footprint are known or suspected to have, or have had, contaminated soils and/or groundwater as a result of releases of petroleum based products, former land use of area, and/or releases of various other hazardous material substances. The existing and/or suspected environmental site conditions for each of the identified sites are summarized in Table 2.

The 2011 ISA analyzed nine sites with **potential** and **recognized environmental conditions** located in the area of the Project over the BNSF Railroad (refer to Figure 1 and 2 in the 2011 ISA). Most sites were previously identified in the 2005 MESA. These sites included the following:

- | | |
|---|--|
| • Ppg Industries Inc. 590 Quivas Street | RCRA-NLR, UST; |
| • Unknown 1701 W. 6 th Avenue | SPILLS; |
| • Conrads Inc. 595 Quivas Street | UST, LUST; |
| • Dupont De Nemours and Co 555 Quivas Street | RCRA-NLR; |
| • Incident near 4 th and Navajo Streets | ERNS; |
| • Rio Grande Co/Unknown 5 th and Osage Streets | LUST; |
| • Landfill 490 Osage Street | Landfill with unknown use or contents; |
| • Unknown 500 Quivas Street | SPILLS; and |
| • Commercial Building 501 Raritan Way | USTs permanently closed. |

Based on the 2011 ISA, all of the above listed sites were identified as sites that have the potential to impact the Project over the BNSF Railroad.

3.1.2 Additional Issues and Findings

ASTM E 1527-00 lists several non-scope considerations that persons may want to assess in connection with real property transactions, but are not included under the standard. These non-scope issues include asbestos containing building materials, radon, lead-based paint, lead in drinking water, regulatory compliance, industrial hygiene, health and safety, indoor air quality, biological agents, mold, and vapor intrusion. Some of these non-scope issues are included as separate sections of the FEIS.

Pinyon Environmental collected four lead and one suspect asbestos containing material sample from the four paint colors observed on the BNSF bridge and from the caulking observed on the south bridge piers,

respectively. Three paint samples collected from the bridge were found to contain lead. The brown paint contained lead at 7.246% and the gray paint contained lead at 2.693%. These levels exceed the US Environmental Protection Agency (EPA) minimum lead by weight content, 0.5% lead by weight (EPA 1992); and are therefore considered to be lead-based. The silver paint sample contained 0.07% lead, which is below the EPA standard for lead-based paint. No lead was found in the red paint sample collected from the bridge. Asbestos was not found in the caulking collected from the south bridge piers; however, based on the number of samples, this screening should not be considered comprehensive.

The ISA recommends that the selected contractor be notified that two of the four paint colors on the bridge are painted with lead-based paint and should avoid sanding, cutting, burning, or otherwise causing the release of lead from the paint on the bridge components. All painted bridge components should be removed and recycled in accordance with CDOT Specification 250.04.

Table 2. Summary of Sites along US 6 with Potential and Recognized Environmental Conditions identified in the 2005 MESA and FEIS

Type of Environmental Conditions	Map ID Reported in 2003 EDR	Property Name(s) and Address	Database	Environmental Conditions	Potential Environmental Concern Ranking
Recognized	86	In Alley Dumpster Behind old TRW Bldg. 445 Federal BLVD. Denver, CO 80204	ERNS	ERNS - Hazardous material found in dumpster in alley behind building. No additional information obtained.	Medium
Recognized	86	Sound on Wheels (former KOK Auto Repair and Body Shop /Yamaguchi Property) 450 Federal BLVD. Denver, CO 80204	FINDS LUST UST	Automotive repair and supply facility. Former gas station with reported UST and LUST. Known petroleum impacted soil and groundwater on the property.	Medium
Potential	86	Phillips 66/Pester Marketing Company/1 st STOP #1207 438 Federal BLVD. Denver, CO 80204	FINDS UST	Gas station with USTs currently in use on property. No leaks or spills reported. Unknown site conditions (located adjacent to LUST site).	Low
Potential	51	Denver Public Schools Hilltop Bus Terminal 2800/2929 W. 7 th Avenue Denver, CO 80204	UST LUST	Denver Public Schools Hilltop Bus Terminal. USTs reported on site. No leaks or spills reported. Unknown material handling and disposal practices.	Site was not ranked
Recognized	87	PCB-Capacitor Cleanup 5 th and Decatur Street	SPILLS	CERCLIS site. RCRA Small Quantity Generator – no reported violations. No additional information available and site conditions are unknown.	High
Potential	81	Bryant Street Phillip 510 Bryant Street Denver, CO 80204	UST	Gas station with USTs currently in use on property. No leaks or spills reported. Unknown site conditions (located adjacent to LUST site).	Low
Recognized	81	Ryder Truck Rental 0155 550 Bryant Street Bryant Street Denver, CO 80204	RCRA-SQG FINDS LUST UST	Rental truck facility. FINDS site. RCRA Conditionally Exempt Small Quantity Generator – no violations reported. UST and LUST site. Known petroleum impacted soil and groundwater on the property.	Medium
Recognized	54	Southbound Ramp 6 th Avenue to I-25	ERNS	ERNS - Diesel tanker overturned and fell into South Platte River. Residual soil and groundwater contamination may be present. No additional information obtained.	Site was not ranked
Potential	N/A	Proctor Production/Fuji Photo Film USA INC /Associated Stationer INC 501 Raritan Way Denver, CO 80204	RCRANLR FINDS UST	Commercial building. USTs permanently closed at property. No leaks or spills reported. Unknown site conditions.	Site was not ranked

Type of Environmental Conditions	Map ID Reported in 2003 EDR	Property Name(s) and Address	Database	Environmental Conditions	Potential Environmental Concern Ranking
Recognized	75	Conrads Inc. (Warehouse)/Kenny Electrical Service 595 Quivas Street Denver, CO 80204	LUST UST	Commercial building. Former location of Conrads Inc. UST and LUST site. Residual petroleum impacted soil may be located on property.	Medium
Recognized	75	Sears Roebuck & Co. 1701 W. US 6 Denver, CO 80204 and 701 Osage Street Denver, CO 80219	LUST UST ERNS	Warehouse. UST, LUST, and ERNS site. Known petroleum impacted soil and groundwater on site.	Medium
Recognized	76	UPRR Burnham Yard 6 th and Osage Denver, CO 80204	ERNS	US 6 and Osage Street. ERNS site. Known petroleum impacted groundwater in area and vicinity of US6/I-25 interchange.	High
Recognized	80	Landfill 500 Julian Street Denver, CO 80204	SWF/LF	Unknown use or contents. Unknown site conditions (potential groundwater contamination and methane).	High
Recognized	81	Landfill 500 Alcott Street Denver, CO 80204	SWF/LF	Unknown use or contents. Unknown site conditions (potential groundwater contamination and methane).	High
Recognized	83	Landfill(California Expanded Metals Co./Champion Fence Co./Southwest Properties 490 Osage Street Denver, CO 80204	SWF/LF LUST FINDS TRIS	Unknown use or contents. Unknown site conditions (potential groundwater contamination).	High
Recognized	83	Rio Grand Co. Residential Products Div. 500 Osage Street Denver, CO 80204	FINDS UST	Manufacturing facility. FINDS, UST and LUST site. Related to the US 6 and Osage UPRR-Burnham Yard ERNS site. Known petroleum impacted groundwater and soil in area and vicinity of US6/I-25 interchange.	High

Source: 2005 MESA and FEIS

3.1.3 *Recommendations*

Based on the findings presented in the 2005 MESA and FEIS and given the variety of industrial and commercial uses and the long history of use, soil and groundwater throughout the Project area have the potential to be impacted. Sites with **potential** and **recognized environmental conditions** should be evaluated prior to the acquisition of right-of-way (ROW). The ROW acquisition process for sites with potential and recognized environmental conditions is a three step process: *Initial Site Assessment (ISA)*, *Phase I Environmental Site Assessment (Phase I)*, and *Remedial Investigation/Feasibility Study (RI/FS)* (CDOT, 2003b) (see 2005 MESA or 2006 FEIS for explanation of an ISA, Phase I, and RI/FS). Hereafter the RI/FS will be referred to as a Phase II. **Table 3** summarizes sites with potential and recognized environmental conditions and the recommended actions per the 2005 MESA and FEIS. It is important to note that a Phase I or Phase II may be recommended based on the findings of an ISA. Properties where a Phase I or Phase II are recommended are identified in Table 3. In addition, a Materials Handling Plan, as required by section 250.03 of the CDOT Standard Specifications for Road and Bridge Construction (CDOT, 1999), and a Health and Safety Plan are recommended for use throughout the Project footprint. The construction specifications should be written to include review of the Materials Handling and Health and Safety Plans by the CDOT Regional Environmental Manager.

The 2011 ISA also recommends that subsurface investigations, including collection of soil and groundwater samples, be conducted to evaluate the potential to encounter contaminated soil and groundwater near the US 6 Bridge over the BNSF Railroad.

The current Project design includes excavation in the area of the tunnel immediately east of I-25 under US 6 to separate traffic on northbound I-25 from traffic exiting the interstate to travel east and west on US 6. This is all within CDOT and CDOT is undertaking a Phase II investigation in this area to identify the presence and extent of and hazardous materials.

Table 3. Summary of Recommendations for Sites Identified along US 6 per the 2005 MESA and FEIS

Type of Environmental Conditions	Property Name(s) and Address	Environmental Conditions	Recommendations			
			ISA ¹	Phase I ²	PHASE II ³	H&S ⁴
Recognized	In Alley Dumpster Behind old TRW Bldg. 445 Federal BLVD. Denver, CO 80204	ERNS – Hazardous material found in dumpster in alley behind building. No additional information obtained.				x
Recognized	Sound on Wheels (former KOK Auto Repair and Body Shop /Yamaguchi Property) 450 Federal BLVD. Denver, CO 80204	Automotive repair and supply facility. Former gas station with reported UST and LUST. Known petroleum impacted soil and groundwater on the property.	x	x		x
Potential	Phillips 66/Pester Marketing Company/1 st STOP #1207 438 Federal BLVD. Denver, CO 80204	Gas station with USTs currently in use on property. No leaks or spills reported. Unknown site conditions (located adjacent to LUST site).	x			
Potential	Denver Public Schools Hilltop Bus Terminal 2800/2929 W. 7 th Avenue Denver, CO 80204	Denver Public Schools Hilltop Bus Terminal. USTs reported on site. No leaks or spills reported. Unknown material handling and disposal practices.	x	x		
Recognized	PCB-Capacitor Cleanup 5 th and Decatur Street	CERCLIS site. RCRA Small Quantity Generator – no reported violations. No additional information available and site conditions are unknown.	x	x		x
Potential	Bryant Street Phillip 510 Bryant Street Denver, CO 80204	Gas station with USTs currently in use on property. No leaks or spills reported. Unknown site conditions (located adjacent to LUST site).	x			
Recognized	Ryder Truck Rental 0155 550 Bryant Street Bryant Street Denver, CO 80204	Rental truck facility. FINDS site. RCRA Conditionally Exempt Small Quantity Generator – no violations reported. UST and LUST site. Known petroleum impacted soil and groundwater on the property.	x			x
Recognized	Southbound Ramp 6 th Avenue to I-25	ERNS - Diesel tanker overturned and fell into South Platte River. Residual soil and groundwater contamination may be present. No additional information obtained.				x
Potential	Proctor Production/Fuji Photo Film USA INC /Associated Stationer INC 501 Raritan Way Denver, CO 80204	Commercial building. USTs permanently closed at property. No leaks or spills reported. Unknown site conditions.	x			

Type of Environmental Conditions	Property Name(s) and Address	Environmental Conditions	Recommendations			
			ISA ¹	Phase I ²	PHASE II ³	H&S ⁴
Recognized	Conrads Inc. (Warehouse)/Kenny Electrical Service 595 Quivas Street Denver, CO 80204	Commercial building. Former location of Conrads Inc. UST and LUST site. Residual petroleum impacted soil may be located on property.	x			x
Recognized	Sears Roebuck & Co. 1701 W. US 6 Denver, CO 80204 and 701 Osage Street Denver, CO 80219	Warehouse. UST, LUST, and ERNS site. Known petroleum impacted soil and groundwater on site.	x	x		x
Recognized	UPRR Burnham Yard 6 th and Osage Denver, CO 80204	US 6 and Osage Street. ERNS site. Known petroleum impacted groundwater in area and vicinity of US6/I-25 interchange.	x	x		x
Recognized	Landfill 500 Julian Street Denver, CO 80204	Unknown use or contents. Unknown site conditions (potential groundwater contamination and methane).		x		x
Recognized	Landfill 500 Alcott Street Denver, CO 80204	Unknown use or contents. Unknown site conditions (potential groundwater contamination and methane).		x		x
Recognized	Landfill[California Expanded Metals Co./Champion Fence Co./Southwest Properties 490 Osage Street Denver, CO 80204	Unknown use or contents. Unknown site conditions (potential groundwater contamination).		x		x
Recognized	Rio Grand Co. Residential Products Div. 500 Osage Street Denver, CO 80204	Manufacturing facility. FINDS, UST and LUST site. Related to the US 6 and Osage UPRR-Burnham Yard ERNS site. Known petroleum impacted groundwater and soil in area and vicinity of US6/I-25 interchange.	x	x		x

Source: 2005 MESA and FEIS

⁽¹⁾ISA = Initial Site Assessment recommended

⁽²⁾Phase I = Phase I Environmental Site Assessment recommended

⁽³⁾PHASE II = Phase II Environmental Site Assessment recommended

⁽⁴⁾H&S = Materials Handling and Health and Safety Plans recommended

3.2 Summary of 2012 Hazardous Materials Analysis

3.2.1 Findings

The 2012 hazardous materials analysis re-evaluated the sites with ***potential*** and ***recognized environmental conditions*** along the Project Footprint that were identified in the 2005 MESA. In addition, the 2012 hazardous materials analysis evaluated any new sites along the Project Footprint that have been identified as sites with ***potential*** and ***recognized environmental conditions*** since the completion of the 2005 MESA. Furthermore, the findings of the limited subsurface investigation conducted in July 2012 were also reviewed and incorporated into the 2012 hazardous materials analysis.

3.2.1.1 Summary of Findings of the Limited Subsurface Investigation

The following paragraphs provide a brief summary of the findings in the limited subsurface investigation conducted in July 2012. The letter report prepared for the limited subsurface investigation provides a detailed discussion of the results and conclusions of in the limited subsurface investigation (see Appendix C, Limited Subsurface Investigation Letter Report).

3.2.1.1.1 Volatile Organic Compounds

BTEX constituents in soil and groundwater, at detectable concentrations, were not encountered in 11 of the 12 temporary monitoring wells installed during the July 2012 subsurface investigation. MH-11, located on the CDOT property (formerly operated as Austria Motors, Inc. at 642 Federal Boulevard) north and west of the Days Inn motel, was the only monitoring well where petroleum hydrocarbon impacts were identified. The laboratory results for the soil sample collected at 30 feet below ground surface (bgs) detected a benzene concentration of 1.70 milligrams per kilogram (mg/kg), which is above the Colorado Department of Public Health and Environment (CDPHE) Soil Cleanup Standards (July 2011) for residential soil (1.2 mg/kg) and worker clean up (1.6 mg/kg) as well as the groundwater protection benzene standard of 0.17 mg/kg. Benzene is a compound of concern due to potential migration to groundwater (OA 2012). Concentrations of toluene, ethylbenzene, and total xylenes were also detected in the soil sample collected at 30 feet bgs; however, the concentrations were below the CDPHE soil and groundwater clean-up standards. In soil samples collected from MH-11 at 20 feet, toluene was detected at 11 µg/kg, and toluene was estimated at a concentration of 3.9 µg/kg "J" in the sample collected from 39 feet. Both are well below the soil standards for toluene. The laboratory results for the groundwater sample collected at approximately 27.34 bgs detected a benzene concentration of 0.2 milligrams per liter (mg/L), which is above the CDPHE/Water Quality Control Division (WQCD) maximum contaminant level (MCL) of 0.005 mg/L. Concentrations of toluene, ethylbenzene, and total xylenes were also detected in the MH-11 sample, but were reported at concentrations that did not exceed their respective MCLs. Benzene is a compound of concern in groundwater since it exceeds the MCL (OA 2012).

3.2.1.1.2 RCRA Metals

The soil and groundwater samples collected (between 15 feet bgs and 39 feet bgs) at the 12 monitoring hole locations were also analyzed for concentrations of eight RCRA metals that included arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. Arsenic was the primary RCRA metal in the collected soil samples reported to be above the Colorado Soil Evaluation Values (CSEV) Table residential

and worker protection levels as based on human health risks (see **Appendix C**, Limited Subsurface Investigation Letter Report, Table 2). In addition, arsenic, barium, cadmium, chromium, lead, and selenium was detected in several of the groundwater samples, all exceeding the Colorado Basic Groundwater Standards (see **Appendix C**, Limited Subsurface Investigation Letter Report, Table 5).

The elevated total metals concentrations of arsenic, barium, cadmium, chromium, and selenium could pose a problem for disposal if groundwater is encountered during excavation, and if excavation dewatering is required (OA 2012).

3.2.1.1.3 Limited Subsurface Investigation Conclusions

Two limited subsurface investigations have been conducted on the west side of I-25 along the north and south right-of-ways of US 6 to Bryant Street and Federal Boulevard. These limited subsurface investigations included the collection of soil and groundwater samples to assess whether there were hazardous waste or petroleum impacts resulting from past land use. With the exception of the petroleum hydrocarbon impacts in MH-11 north of the Days Inn motel on Federal Boulevard, the soil and groundwater results do not indicate the presence of hazardous material or petroleum hydrocarbon impacts. One caveat to this is that the metals concentrations in soil and groundwater may be the result of natural background, anthropogenic activities, or a combination of the two. Certain metals such as arsenic or selenium could impact site activities if it becomes necessary to obtain a groundwater discharge permit in order to dewater excavations. If these metals are elevated above surface water standards, it may be necessary to treat the water prior to discharge or to dispose of the water through a commercial sanitary sewer system.

3.2.1.2 LUST Sites within Project Footprint

The acquisition of right-of-way will be required from four LUST sites (former and active) within the Project Footprint. These sites (Legend Numbers 1, 3, 16, and 17) are shown in **Figure 5 ROW / Hazmat Conditions** and listed in **Table 4**. One site, Legend Number 2, is not a LUST site; however, it is discussed in the following paragraphs since it may have been impacted by an adjacent LUST site (Legend Number 3).

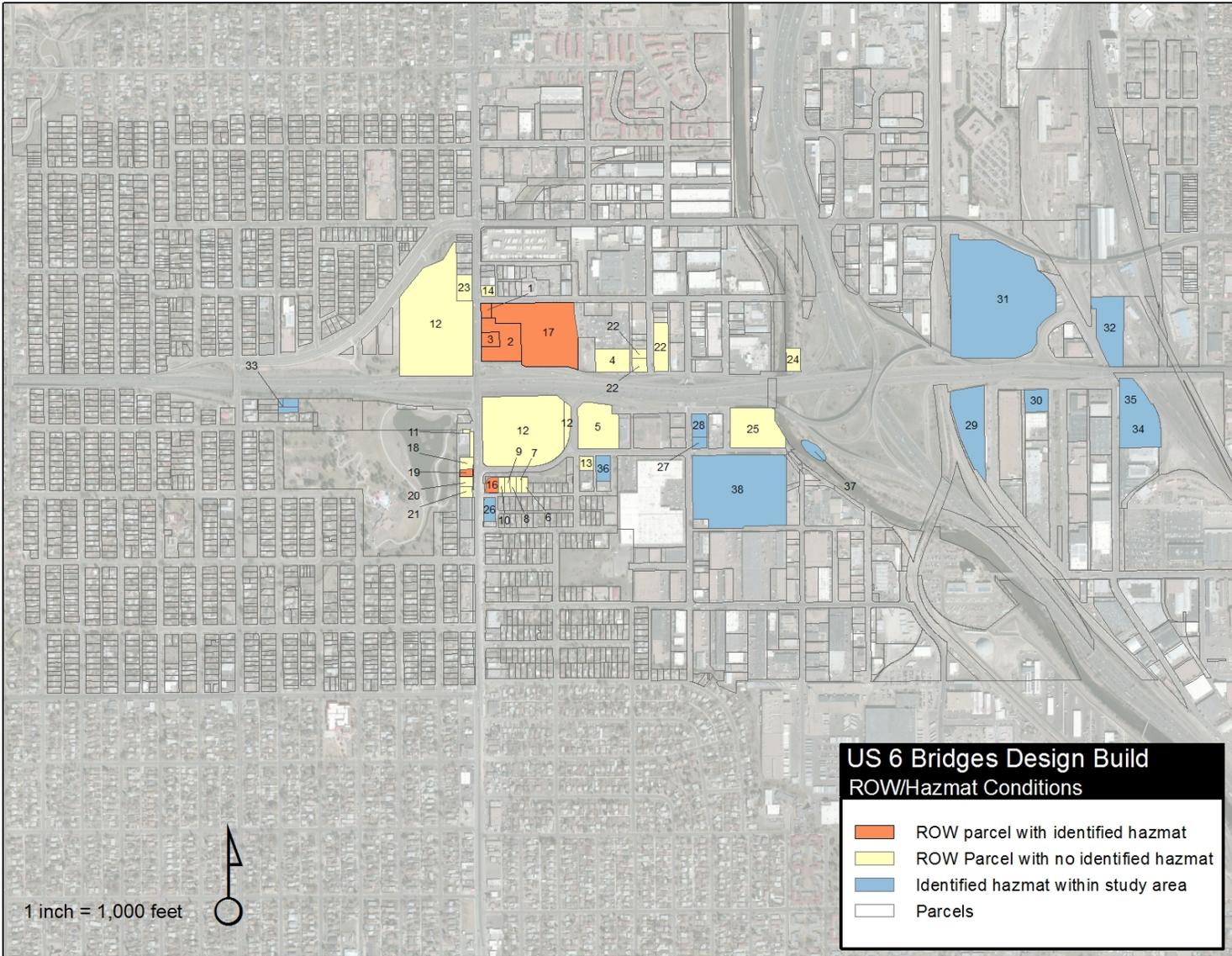


Figure 5: ROW / Hazmat Conditions

Table 4. Summary of Recommendations for Sites Identified along US 6 per the 2012 Hazardous Materials Analysis

Legend #	Type of Environmental Conditions	ROW Parcel Number	Property Name(s) and Address	Amount of ROW Required at Site/Description of ROW Acquired	Environmental Conditions (Based on Information available at time of 2012 Investigation)	2012 Potential Environmental Concern Ranking	Recommendations	Reasons for Recommendations
1	Recognized	200	Fergs Enterprise, LLC, a Colorado limited liability company/Marco's Auto Tech 690 Federal BLVD. Denver, CO 80204	Entire parcel. A 510 sf office building, four garages used as automotive service bays (the total size of the building and bays is 2,407 sf) and 2 abandoned underground petroleum storage tanks that have been filled with concrete, a cell tower, and associated appurtenances located on 620 Federal Blvd, Denver CO 80204. Sheet No. 5.04	Confirmed release reported in the LUST database on 2/15/2000. Two USTs permanently closed on 6/15/2000. Closure letter sent on 8/15/2000. CDOT completed and ISA on 4/1/11.	Medium	ISA Materials Handling and Health and Safety Plans recommended	ROW acquisition required from a site that is listed in the LUST database.
2	Recognized	102, 102A, TE-102, TE-102A, TE-102B, TE-103, PE-202.	U.S. Motels Federal, LLC	Parking lot/ asphalt Lobby/administration building used as part of the Day's Inn Motel at 620 Federal Boulevard, Denver CO 80204. Sheet No.5.04	This site is associated with Site 3 (see Site 3 environmental conditions) and may have contaminated soil and groundwater.	Medium	Phase II if results of site #3 investigation raises risk ranking Materials Handling and Health and Safety Plans recommended	Recommendation is dependent upon the results of the additional subsurface investigations scheduled to take place at Site 3. If results of this investigation do not indicate potential contamination at this site, then it is anticipated that any additional investigation is necessary at Site 2.

Legend #	Type of Environmental Conditions	ROW Parcel Number	Property Name(s) and Address	Amount of ROW Required at Site/Description of ROW Acquired	Environmental Conditions (Based on Information available at time of 2012 Investigation)	2012 Potential Environmental Concern Ranking	Recommendations	Reasons for Recommendations
3	Recognized	AP-103 103-RM TE-103	Colorado Department of Transportation/Austria Motors 642 Federal BLVD. Denver, CO 80204	Assumed to be sliver parallel to US 6. 50' x 300'. Area appears to be trees/weeds/dirt and asphalt. Sheet Nos. 5.08 and 5.11	Confirmed release reported in LUST database on 10/23/1997. Four USTs permanently closed on 10/23/1997. LUST clean up initiated on 10/29/1997. Site cleanup completed on 7/7/1999. NFAR received on 7/7/1999. PSI conducted in July 2012 identified benzene in soils at 30 feet bgs with concentration levels above groundwater protection benzene standards and above residential and worker soil cleanup standards. Benzene was also detected in groundwater samples with a concentration level of 0.2 mg/L, which exceeds the MCL of 0.0005 mg/L.	High	Phase II Materials Handling and Health and Safety Plan recommended	Additional subsurface investigations are scheduled at this site to further evaluate level/area of soil and groundwater contamination discovered in the July 2012 SI. Pending the results of those investigations, a remediation or other appropriate actions may be required.
4		104	Colorado Department of Transportation 2727 W. 6th Avenue, Denver, Colorado 80204	Sheet No. 6.01	None	No	N/A	

Legend #	Type of Environmental Conditions	ROW Parcel Number	Property Name(s) and Address	Amount of ROW Required at Site/Description of ROW Acquired	Environmental Conditions (Based on Information available at time of 2012 Investigation)	2012 Potential Environmental Concern Ranking	Recommendations	Reasons for Recommendations
5		205 Rev. 205A Rev. PE-205	5th Avenue Properties LTD, Liability Co.	50' x 400' area east of Barnum Park East. 40' x 250' sliver south of US 6 and parallel to the highway. Area of take is barren – trees/weeds/dirt. Sheet Nos. 5.09 and 5.10	None	No	N/A	
6		206, TE-206	John Orlando	Area to be Acquired – < 5' x 50' sliver at front of property. Temporary Easement – 10' x 50' sliver adjacent to acquisition. Area is barren – trees/weeds/dirt. Sheet No. 5.07	None	No	N/A	
7		207, TE-207, TE-207A	Dina Hinojos and Nancy Jacinto	A garage located on 2929 West Short Place, Denver, CO 80204 Area to be Acquired – < 5' x 50' sliver at front of property. Temporary Easement – 40' x 50' area adjacent to acquisition. Residential property. Area has garage and debris. Sheet No. 5.07	None	No	N/A	

Legend #	Type of Environmental Conditions	ROW Parcel Number	Property Name(s) and Address	Amount of ROW Required at Site/Description of ROW Acquired	Environmental Conditions (Based on Information available at time of 2012 Investigation)	2012 Potential Environmental Concern Ranking	Recommendations	Reasons for Recommendations
8		208, TE-208	Juan Luna	<p>Area to be Acquired – < 5' x 50' sliver at front of property.</p> <p>Temporary Easement – 10' x 50' sliver adjacent to acquisition.</p> <p>Area is barren – trees/weeds/dirt.</p> <p>Sheet No. 5.07</p>	No	No	N/A	
9		209, TE-209, TE-209A	Thomas Harvey	<p>Area to be Acquired – < 5' x 50' sliver at front of property.</p> <p>Temporary Easement – 20' x 50' sliver adjacent to acquisition.</p> <p>Area is barren – trees/weeds/dirt. Looks there may be impact to a small shed.</p> <p>Sheet No. 5.07</p>	None	No	N/A	
10		210, TE-210	Jim Zakhem	<p>Area to be Acquired – < 5' x 50' sliver at front of property.</p> <p>Temporary Easement – 10' x 50' sliver adjacent to acquisition.</p> <p>Area is barren dirt and asphalt.</p> <p>Sheet No. 5.07</p>	None	No	N/A	

Legend #	Type of Environmental Conditions	ROW Parcel Number	Property Name(s) and Address	Amount of ROW Required at Site/Description of ROW Acquired	Environmental Conditions (Based on Information available at time of 2012 Investigation)	2012 Potential Environmental Concern Ranking	Recommendations	Reasons for Recommendations
11		211, TE-211	Young J. Kwon and Lily Kwon	<p>Area to be Acquired – < 5' x 125' sliver at front of property along Federal Blvd.</p> <p>Temporary Easement – 15' x 50' sliver adjacent to acquisition.</p> <p>Area is asphalt.</p> <p>Sheet No. 5.07</p>	None	No	N/A	
12		212 Rev., 212A, 212B Rev., 212C, PE-212, PE-212A	City and County of Denver	<p>Area to be Acquired – 25' – 50" x 800' area in Barnum Park east along Federal and US 6.</p> <p>Permanent Easement – 15' x 400' area adjacent to acquisition along US 6.</p> <p>Area is grass and trees.</p> <p>Sheet Nos. 5.06 and 5.07</p>	None	No	N/A	
13		TE-213	Vassilios & Lynne L. Sirolaidis	<p>Temporary Easement - 20' – 25' x 150' area in the southeast corner of West 5th Avenue and Decatur.</p> <p>Area is asphalt.</p> <p>Sheet No. 5.09</p>	None	No	N/A	

Legend #	Type of Environmental Conditions	ROW Parcel Number	Property Name(s) and Address	Amount of ROW Required at Site/Description of ROW Acquired	Environmental Conditions (Based on Information available at time of 2012 Investigation)	2012 Potential Environmental Concern Ranking	Recommendations	Reasons for Recommendations
14		TE-214	M&M Hi Performance Car Wash	Temporary Easement - 10' x 200' area on the northeast corner of West 7 th Avenue and Federal Blvd. Area is asphalt. Sheet No 6.01	None	No	N/A	
15		PE-216	Edward A. Robinson & Marcia K. Robinson	Permanent Easement – 25'-30' x 220' area along US 6. Area is asphalt. Semi box trailers on property. Sheet No. 5.12	None	No	N/A	
16	Recognized	TE-217	Charles S. Yamaguchi and Chiseko Yamaguchi Sound on Wheels (former KOK Auto Repair and Body Shop /Yamaguchi Property) 450 Federal BLVD. Denver, CO 80204	Temporary Easement – 10' x 200' sliver on the southeast corner of West 5 th Avenue and Federal. Area is gravel and asphalt. Sheet No. 5.07	Automotive repair and supply facility. Former gas station with reported UST and LUST. Known petroleum impacted soil and groundwater on the property. A CAP and monitoring activities are currently in place at this site.	High	ISA Materials Handling and Health and Safety Plan recommended	An ISA is recommended to ascertain the results of the current corrective action measures that are in progress at this site. The completion date of the clean-up efforts is currently not known.

Legend #	Type of Environmental Conditions	ROW Parcel Number	Property Name(s) and Address	Amount of ROW Required at Site/Description of ROW Acquired	Environmental Conditions (Based on Information available at time of 2012 Investigation)	2012 Potential Environmental Concern Ranking	Recommendations	Reasons for Recommendations
17	Recognized	218, PE-218, TE-218 Rev.	School District No. 1 in the City and County of Denver and State of Colorado Denver Public Schools Hilltop Bus Terminal 2800/2929 W. 7 th Avenue Denver, CO 80204	Area to be Acquired – 25’ – 50” x 475’ area parallel to US 6 – north side. Permanent Easement – 20’ x 475’ swath adjacent to acquisition along US 6. Acquisition area is barren – trees/weeds/dirt. Permanent easement area is oil-stained concrete. Sheet No. 5.08	Denver Public Schools Hilltop Bus Terminal. USTs reported on site. Confirmed release reported in the LUST database on 9/10/2009. Residual petroleum impacted soil and/or groundwater may be present. A closure letter for the 9/10/2009 LUST incident was received on 11/17/2009. Unknown material handling and disposal practices.	Medium	ISA Materials Handling and Health and Safety Plan recommended	Although the status of the LUST incident is listed as closed, there is a potential to encounter undocumented/unknown soil/groundwater contamination at this site. Therefore, an ISAS is recommended at this site to obtain the status of this site. Depending upon the results of the ISA and type of construction activity at this site such as soil excavation/removal, additional investigation may be warranted to determine if soil/groundwater contamination is present at this site.
18		TE-219	Neostar, LLC, a Colorado limited liability company	Temporary Easement - 10’ x 100’ sliver along the western side of Federal Blvd. Area appears to be asphalt/parking area. Sheet No. 5.07	None	No	N/A	
19	Recognized	TE-220	Rui Fen Auyeung and Shun Y. Auyeung In Alley Dumpster Behind old TRW Bldg. 445 Federal BLVD. Denver, CO 80204	Temporary Easement - 10’ x 75’ sliver along the western side of Federal Blvd. Area appears to be asphalt/parking area. Sheet No. 5.07	ERNS - Hazardous material found in dumpster in alley behind building. No additional information obtained.	Low	ISA Materials Handling and Health and Safety Plan recommended	An ISA is recommended at this site to determine the current status of the site such as evidence of inappropriate disposal of hazardous materials. Materials Handling and Health and Safety Plan is recommended due to the documentation of inappropriate disposal of hazardous materials at this site.

Legend #	Type of Environmental Conditions	ROW Parcel Number	Property Name(s) and Address	Amount of ROW Required at Site/Description of ROW Acquired	Environmental Conditions (Based on Information available at time of 2012 Investigation)	2012 Potential Environmental Concern Ranking	Recommendations	Reasons for Recommendations
20		TE-221	405 Federal Blvd., LLC	Temporary Easement - 10' x 75' sliver along the western side of Federal Blvd. Area appears to be asphalt/parking area. Sheet No. 5.07	None	No	N/A	
21		TE-222	Kayla Hanh Tran	Temporary Easement - 10' x 25' sliver at the corner of Federal Blvd. and West 4 th Avenue. Area appears to be asphalt/parking area. Sheet No. 5.07	None	No	N/A	

Legend #	Type of Environmental Conditions	ROW Parcel Number	Property Name(s) and Address	Amount of ROW Required at Site/Description of ROW Acquired	Environmental Conditions (Based on Information available at time of 2012 Investigation)	2012 Potential Environmental Concern Ranking	Recommendations	Reasons for Recommendations
22		223, 223A, PE-223, PE-223A, TE-223	R.W. Properties, LLC	<p>Area to be Acquired – 75' x 100' area west of North Canosa Ct. Area completed cul-de-sac for dead-end street.</p> <p>20' x 130' sliver along US 6</p> <p>Temporary Easement – 10' x 170' area adjacent to acquisition are needed for cul-de-sac.</p> <p>Permanent Easement – 15' x 100' area adjacent to the acquisition along US 6.</p> <p>Area is asphalt and parking</p> <p>Sheet No. 5.11</p>	None	No	N/A	
23		TE-224	Sun H. Kim	<p>Temporary Easement - 10' x 125' area on the west side of West 7th Avenue and Federal Blvd.</p> <p>Area is asphalt.</p> <p>Sheet No 6.01</p>	None	No	N/A	

Legend #	Type of Environmental Conditions	ROW Parcel Number	Property Name(s) and Address	Amount of ROW Required at Site/Description of ROW Acquired	Environmental Conditions (Based on Information available at time of 2012 Investigation)	2012 Potential Environmental Concern Ranking	Recommendations	Reasons for Recommendations
24		225	The Gail G. Gordon Marital Trust, dated November 12, 2009, Gail G. Gordon and BOKF, National Association, dba Colorado State Bank and Trust, Co-Trustees.	Area to be acquired – 110' x 200' area located east of the South Platte River. Area is vacant with grass and trees present. Sheet No. 5.13	None	No	N/A	
25	Recognized	PE-226	Lordlan Properties, LLC - 70% Interest & DYNA, LLC, a Colorado Limited Liability Company - 30% Interest	Permanent Easement – 25' x 75' area south of US 6, west of the South Platte River. Area is concrete/asphalt. Sheet No. 5.12	None	Low	ISA	Site is the former location of a landfill. Therefore, an ISA is recommended to determine if previous land uses at this site may have impacted areas (e.g. contamination migration from site) within the Project footprint.

Legend #	Type of Environmental Conditions	ROW Parcel Number	Property Name(s) and Address	Amount of ROW Required at Site/Description of ROW Acquired	Environmental Conditions (Based on Information available at time of 2012 Investigation)	2012 Potential Environmental Concern Ranking	Recommendations	Reasons for Recommendations
26	Recognized		Conoco (former Phillips 66/Pester Marketing Company/1 st STOP #1207) 438 Federal BLVD. Denver, CO 80204	This property appears to be on the southeast corner of Federal and Short Place. Not showing any ROW needed at this address.	Confirmed release reported in the LUST database on 7/6/2011. Gas station with USTs currently in use on property. Three monitoring wells observed in alley behind site. Fourteen unmarked 55-gallon drums observed behind gas station building. Petroleum impacted groundwater was reported offsite. .	Medium	ISA	A CAP is currently being developed for this site. Therefore, clean-up efforts at this site have not begun and the extent/level of contamination may not be fully known. Due to the uncertainty of the extent/level of contamination at this site, an ISA is recommended to determine current status of the site.
27	Recognized		Bryant Street Phillips 66 510 Bryant Street Denver, CO 80204	Not showing any ROW needed at this address.	Gas station with USTs currently in use on property. Confirmed release reported in the LUST database on 5/11/2006. Petroleum impacted groundwater on- and off-site. The EDR reported that the status of the LUST incident was reported as closed on 8/6/2007.	Medium	ISA	An ISA is recommended at this site to determine the current status of this site

Legend #	Type of Environmental Conditions	ROW Parcel Number	Property Name(s) and Address	Amount of ROW Required at Site/Description of ROW Acquired	Environmental Conditions (Based on Information available at time of 2012 Investigation)	2012 Potential Environmental Concern Ranking	Recommendations	Reasons for Recommendations
28	Recognized		Ryder Truck Rental 0155 550 Bryant Street Denver, CO 80204	Not showing any ROW needed at this address.	Rental truck facility. FINDS site. RCRA Conditionally Exempt Small Quantity Generator – no violations reported. UST and LUST site. Known petroleum impacted soil and groundwater on the property. A closure letter was received on 2/11/2003.	Medium	ISA	An ISA is recommended at this site to determine the current status of this site.
29	Potential		Proctor Production/Fuji Photo Film USA INC /Associated Stationer INC 501 Raritan Way Denver, CO 80204	Not showing any ROW needed at this address.	Commercial building. USTs permanently closed at property. No leaks or spills reported. Unknown site conditions.	Medium	ISA	An ISA is recommended at this site to determine the current status of this site.
30	Recognized		Conrads Inc. (Warehouse) [SIC]/Kenny Electrical Service 595 Quivas Street Denver, CO 80204	Not showing any ROW needed at this address.	Commercial building. Former location of Conrads Inc. UST and LUST site. Residual petroleum impacted soil may be located on property. A closure letter was received on 8/14/1997.	Medium	ISA	An ISA is recommended at this site to determine the current status of this site.
31	Recognized		Sears Roebuck & Co. 1701 W. US 6 Denver, CO 80204 and 701 Osage Street Denver, CO 80219	Not showing any ROW needed at this address.	Warehouse. UST, LUST, and ERNS site. Known petroleum impacted soil and groundwater on site. The status of this site is listed as being enrolled in the LUST TRUST FUND Program.	High	ISA	An ISA is recommended at this site to determine the current status of this site.

Legend #	Type of Environmental Conditions	ROW Parcel Number	Property Name(s) and Address	Amount of ROW Required at Site/Description of ROW Acquired	Environmental Conditions (Based on Information available at time of 2012 Investigation)	2012 Potential Environmental Concern Ranking	Recommendations	Reasons for Recommendations
32	Recognized		UPRR Burnham Yard 6 th and Osage Denver, CO 80204	Not showing any ROW needed at this address.	US 6 and Osage Street. ERNS site. Known petroleum impacted groundwater in area and vicinity of US6/I-25 interchange.	Medium	ISA	An ISA is recommended at this site to determine the current status of this site.
33	Recognized		Landfill 500 Julian Street Denver, CO 80204	Not showing any ROW needed at this address.	Unknown use or contents. Unknown site conditions (potential groundwater contamination and methane).	Low	ISA	An ISA is recommended at this site to determine the current status of this site.
34	Recognized		Landfill[California Expanded Metals Co./Champion Fence Co./Southwest Properties 490 Osage Street Denver, CO 80204	Not showing any ROW needed at this address.	Unknown use or contents. Unknown site conditions (potential groundwater contamination).	Medium	ISA	An ISA is recommended at this site to determine the current status of this site.
35	Recognized		Rio Grand [SIC] Co. Residential Products Div. 500 Osage Street Denver, CO 80204	Not showing any ROW needed at this address.	Manufacturing facility. FINDS, UST and LUST site. Related to the US 6 and Osage UPRR-Burnham Yard ERNS site. Known petroleum impacted groundwater and soil in area and vicinity of US6/I-25 interchange. The status of the LUST is listed as closed on 9/15/2003.	Medium	ISA	An ISA is recommended at this site to determine the current status of this site.

Legend #	Type of Environmental Conditions	ROW Parcel Number	Property Name(s) and Address	Amount of ROW Required at Site/Description of ROW Acquired	Environmental Conditions (Based on Information available at time of 2012 Investigation)	2012 Potential Environmental Concern Ranking	Recommendations	Reasons for Recommendations
36	Recognized		PCB-Capacitor Cleanup 5 th and Decatur Street	Not showing any ROW needed at this address.	CERCLIS site. RCRA Small Quantity Generator – no reported violations. No additional information available and site conditions are unknown.	Low	ISA	An ISA is recommended at this site to determine the current status of this site.
37	Recognized		Southbound Ramp 6 th Avenue to I-25	Not showing any ROW needed at this address.	ERNS - Diesel tanker overturned and fell into South Platte River. Residual soil and groundwater contamination may be present.	Low	ISA	An ISA is recommended at this site to determine the current status of this site.
38	Recognized		Landfill 500 Alcott Street Denver, CO 80204 –	Not showing any ROW needed at this address.	Unknown use or contents. Unknown site conditions (potential groundwater contamination and methane).	Low	ISA	An ISA is recommended at this site to determine the current status of this site.
			ROW parcel with identified hazmat					
			ROW parcel with no identified hazmat					
			Identified hazmat within study area					

Source: 2005 MESA, FEIS, and 2011 ISA

Legend No. 1 – Fergs Enterprise, LLC, a Colorado limited liability company/Marco’s Auto Tech - 690 Federal Blvd. Denver, CO 80204

This site is a closed LUST site located at 690 Federal Boulevard and is an automotive garage that performs various repair services on automobiles. According to the environmental database report, this site is listed in the LUST database with two USTs that are permanently closed. A closure letter for the LUST incident was received on June 15, 2000. CDOT completed an ISA on 4/1/11.

Based on the area topography and various other resources, groundwater flows in a northeasterly direction, away from the Project Footprint. However, this site is located to the north of the site identified as Legend Number 3, a LUST site, with a recent discovery of benzene in soil and groundwater samples above the CDPHE clean-up standards (see Legend Number 3 discussion) collected during a subsurface investigation conducted in July 2012. The current right-of-way plans indicate that entire property would be acquired to accommodate the Project. Therefore, due to the site’s listing in the LUST database, acquisition of the entire property, and recent discovery of soil and groundwater contamination at a site (Legend No. 3) located to the south of this site, and the direction of groundwater flow, this site received an environmental concern ranking of Medium.

Legend No. 2 – U.S. Motels Federal, LLC - 620 Federal Blvd. Denver, CO 80204

This site is located at 620 Federal Boulevard and is a Days Inn motel. This site was not identified in any of the environmental databases. However, this site is located adjacent to the Legend Number 3 site, which is a LUST site with a recent discovery of benzene in collected soil and groundwater samples (see Legend Number 3 discussion).

Based on the area topography and various other resources, groundwater flows in a northeasterly direction at this site. Thus, the southern half of the site located along US 6 is less likely to be impacted by the environmental conditions identified at the Legend Number 3 site. However, the northern portion of the site may be impacted by the environmental conditions identified at the Legend Number 3 site due to the direction of groundwater flow. The current right-of-way plans indicate that temporary easements will be required from the southern and northern portions of this site. Therefore, due to the site’s location in relation to the Legend Number 3 site, direction of groundwater flow, and temporary easement requirements at this site, this site received an environmental concern ranking of Medium. Additional subsurface investigations are scheduled to determine the extent/level of soil and groundwater contamination at the Legend Number 3 site. Depending upon the results of the additional subsurface investigations, this site’s environmental concern ranking may be reduced to Medium or Low.

Legend No. 3 –Colorado Department of Transportation/Austria Motors - 642 Federal Blvd. Denver, CO 80204

This site is a closed LUST site located at 642 Federal Boulevard and was the former site of Austria Motors. However, the site is currently an empty lot that is partially paved. According to the environmental database report this site is listed in the LUST database with four USTs that are permanently closed. An NFAR for the LUST incident was received on July 7, 1999. However, soil and

groundwater samples (boring location - MH-11) collected at this site during the limited subsurface investigation conducted in July 2012 revealed the presence of benzene in soils at 30 feet below grade (bgs) that was above the CDPHE Soil Cleanup Standards (July 2011) for residential soil and worker clean up and the groundwater protection benzene standard. Due to this discovery, CDOT is in the process of scheduling additional subsurface investigations to determine the extent/level of soil and groundwater contamination at this site.

Based on the area topography and various other resources, groundwater flows in a northeasterly direction, away from the Project Footprint. However, due to a portion of this site being within the current right-of-way plans including a temporary easement, site's listing in the LUST database, and the recent discovery of soil and groundwater contamination above clean up levels, this site received an environmental concern ranking of High. Depending upon the results of the additional subsurface investigations and/or proposed construction activities (i.e., depth of soil excavation and area) at this site, this site's environmental concern ranking may be reduced to Medium.

Legend No. 16 – Charles S. Yamaguchi and Chiseka Yamaguchi/ Sound on Wheels (former KOK Auto Repair and Body Shop/Yamaguchi Property) - 450 Federal Blvd. Denver, CO 80204

This site is an active LUST site located at 450 Federal Boulevard and is currently an automotive accessories garage. According to the environmental database report, this site is listed in the LUST database as a site currently undergoing corrective actions for a confirmed release of petroleum reported in May 1994.

Based on the area topography and various other resources, groundwater flows in a northeasterly direction, away from the Project Footprint along Federal Blvd., but towards the West 5th Ave. Project Footprint. Based on the current right-of-way plans, a temporary easement from this site will be required along the southeast corner of West 5th Ave. Therefore, due to the site's listing in the LUST database as a site undergoing corrective actions, right-of-way acquisition from the site in the form of a temporary easement, and direction of groundwater flow towards the Project Footprint, this site received an environmental concern ranking of High.

Legend No. 17 – Denver Public Schools Hilltop Bus Terminal - 2800/2929 West 7th Avenue Denver, CO 80204

This site is a closed LUST site located at 2800 W. 7th Avenue. This site is a bus terminal and re-fueling area for the Denver Public Schools. The site is located 100 to 500 feet north of the westbound off-ramp to 6th Avenue from Federal Boulevard. According to the environmental database report two LUST incidents, one in 1989 and one in 2009, have been reported at this site. A closure letter has been received for both incidents. In addition, eight USTs are reported to be in-use at this site and range in size from 250-gallons to 20,000-gallons.

Based on the area topography and various other resources, groundwater flows in a northeasterly direction away from the Project Footprint. The current right-of-way plans indicate that a portion of this site (area located parallel to the north of side of US 6) will be acquired by the Project. A permanent

easement will also be required in the same area of the right-of-way acquisition. Therefore, due to the site's listing in the LUST database, acquisition of right-of-way from this site, and the current activities conducted at this site that includes bus re-fueling, this site received an environmental concern ranking of Medium.

3.2.1.3 *LUST Sites within the Study Area of the Project Footprint*

Six LUST sites (former and active) were identified within the study area of the Project Footprint. These sites were located immediately adjacent, or within close proximity, (generally a few hundred feet or less) to the Project Footprint. Currently, it is not anticipated that the acquisition of right-of-way would be acquired from these sites. However, based on the type of environmental concern (i.e., LUST site) these sites were further evaluated to determine their environmental concern ranking in regards to the Project. The sites are listed in **Table 4** and identified with the legend numbers 26, 27, 28, 30, 31, and 35. A summary of these sites is provided in the following paragraphs.

Legend No. 26 – Conoco (former Phillips 66/Pester Marketing Company/1st STOP #1207) – 438 Federal Blvd. Denver, CO 80204

This site is an open LUST site located at 438 Federal Boulevard and is currently a Conoco gas station; however, it was known as a Phillips 66 gas station at the time of the 2005 MESA. The site is located less than 100 feet south of the eastbound on-ramp to US 6 from Federal Boulevard. According to the environmental database report, three USTs are reported to be in-use at this site that include one 10,000-gallon UST filled with unleaded regular gasoline, one 8,000-gallon UST filled with unleaded premium gasoline, and one 6,000-gallon UST filled with diesel fuel. The site was reported in the LUST database on July 6, 2011 for a confirmed release of petroleum products. The CDHP Colorado Storage Tank Information System (COSTIS) web site indicates that a Corrective Action Plan (CAP) is currently being developed for the clean-up of the LUST incident.

During the 2012 windshield survey, three monitoring wells were observed in the alley behind the gas station and 14 unlabeled 55-gallon drums were observed behind the gas station building (**Appendix B – Photo Log**).

Based on the area topography and various other resources, groundwater flows in a northeasterly direction, away from the Project Footprint along Federal Blvd., but towards the West 5th Ave. Project Footprint. The current right-of-way plans indicate that the acquisition of right-of-way will not be required at this site as it is beyond the Project Footprint. Therefore, based on the site's listing in the LUST database with required corrective actions, direction of groundwater flow towards the Project Footprint along West 5th Ave., unknown extent of soil and groundwater contamination (unknown at the time of this report), and no acquisition of right-of-way from this site, this site received an environmental concern ranking of Medium.

Legend No. 27 - Bryant Street Phillips 66 – 510 Bryant Street, Denver, CO 80204

This site is a closed LUST site located at 510 Bryant Street and is approximately 100 to 500 feet south of the Project Footprint. According to the environmental database report, four USTs are reported to be in-use at this site and include one 10,000-gallon UST filled with unleaded regular gasoline, one 3,000-gallon UST filled with unleaded premium gasoline, one 3,000-gallon UST filled with diesel fuel, and one 300-gallon UST filled with used oil. The site was reported in the LUST database on May 11, 2006 for a confirmed release of petroleum products. A closure letter was received on August 6, 2007 for the reported LUST incident at this site. This site was also identified in the 2005 MESA as a site with petroleum impacted groundwater (onsite and offsite) above Colorado state standards (2005 MESA). In addition, the 2005 MESA stated that petroleum impacted soil may also be present on- and/or offsite. During the 2012 windshield survey, no evidence was observed that suggests active remediation and/or monitoring activities are currently taking place at this site.

Based on the area topography and various other resources, groundwater flows in a northeasterly direction at this site, towards the Project Footprint along US 6. The current right-of-way plans indicate that the acquisition of right-of-way will not be required at this site as it is beyond the Project Footprint. Therefore, based on the site's listing in the LUST database with currently no active or required remediation, distance of site from the Project Footprint, and no acquisition of right-of-way from this site, this site received an environmental concern ranking of Medium.

Legend No. 28 – Ryder Truck Rental # 0155 – 550 Bryant Street, Denver, CO 80204

This site is a closed LUST site located at 550 Bryant Street and is less than 100 ft south of the US 6 Project Footprint. The site is currently a rental truck office and fueling facility. According to the environmental database records, three USTs are reported to be in-use at this site and include one 20,000-gallon UST filled with diesel, one 4,000-gallon UST filled with lube, and one 2,500-gallon UST filled with used oil. In addition, one 10,000-gallon UST for gasoline and one 12,000-gallon UST for diesel were removed from the site in October 1999. Approximately 650 yds³ of petroleum impacted soil were removed from the site. Eight additional USTs ranging in size from 560-gallons to 12,000-gallons have also been permanently closed on the site. A closure letter was received on February 4, 2004 as clean up actions at the site have met the criteria the State uses for determining adequate clean up. However, benzene impacted groundwater is present on-site and residual petroleum impacted soil may also be present.

Based on the area topography and various other resources, groundwater flows in a northwesterly direction at this site, towards the Project Footprint along US 6. The current right-of-way plans indicate that the acquisition of right-of-way will not be required at this site. Therefore, based on the site's listing in the LUST database as a site that has met the required clean up criteria and no acquisition of right-of-way from this site, this site received an environmental concern ranking of Medium.

Legend No. 30 – Conrads Inc. (Warehouse){SIC}/Kenny Electrical Service – 595 Quivas Street, Denver, CO 80204

This site is a closed LUST site located at 595 Quivas Street, between Quivas Street and Raritan Way. According to environmental database records, two USTs were removed from the site in October 1996. The site was reported in the LUST database due to the discovery of petroleum impacted soil and groundwater that was identified in the tank excavation. However, laboratory analytical results for total petroleum hydrocarbons (TPH) were below the State clean-up standard of 500 ppm. A groundwater sample was not collected. A closure letter for the site was received on August 18, 1997. However, residual petroleum impacted soil and groundwater may be present at the site.

Based on the area topography and various other resources, groundwater flows in a west to northwesterly direction at this site, towards the Project Footprint along US 6. The current right-of-way plans indicate that the acquisition of right-of-way will not be required at this site. Therefore, based on the site's listing in the LUST database as a site that, at this time, has received an NFAR, no other reported violations involving hazardous materials, distance of site in relation to the Project Footprint, and no acquisition of right-of-way from this site, this site received an environmental concern ranking of Medium.

Legend No. 31 – Sears Roebuck & Co. – 1701 W. US 6, Denver, CO 80204 and 701 Osage Street, Denver, CO 80219

This site is a closed LUST site located at 1701 W. 6th Avenue. The site consists of a retail outlet facility that is located less than 100 ft north of US 6, between Seminole Road and I-25. According to environmental database records, a 4,000-gallon and 6,000-gallon UST for diesel were removed from the site in October 1988. The site was reported in the LUST database due to the discovery of petroleum impacted soil and groundwater identified on-site. A pump and treat system was reportedly installed on the property and several thousand gallons of petroleum product were removed in 1988. On May 18, 2001 the site was transferred to the LUST TRUST FUND Program.

Based on the area topography and various other resources, groundwater flows in a west to northwesterly direction at this site, towards the Project Footprint along US 6. The current right-of-way plans indicate that the acquisition of right-of-way will not be required at this site. Therefore, based on the site's listing in the LUST database with a status of "closed", distance of site in relation to the Project Footprint, and no acquisition of right-of-way from this site, this site received an environmental concern ranking of High.

Legend No. 32 – UPRR Burnham Yard – 6th and Osage, Denver, CO 80204

This site is bounded to the north by 8th Avenue, to the south by 3rd Avenue, to the east by the Union Pacific Burnham railroad yard, and to the west by Quivas Street and the Consolidated Main Line railroad tracks. This site is identified in as an ERNS site. According to environmental records, groundwater in the area has been identified as containing elevated levels of petroleum TEPH in exceedances of 3,100 mg/l. Petroleum stained soils have also been observed in the area (2005 MESA).

In addition, this site has been identified as a one of the three potential sources of a petroleum plume that has resulted in soil and groundwater contamination on the north and south side of US 6. The three suspected sources include: the UPRR Burnham Yard (Legend No. 32), the Rio Grande Products site (Legend No. 35) at 500 Osage St., and an abandoned UPRR diesel pipeline located east of the Rio Grande Products site. The UPRR Burnham Yard site is the source of the contamination north of 6th Avenue, and the Rio Grande Products site is the source of the contamination south of 6th Avenue. Approximately 670 linear ft of the storm drain located southwest of the UPRR Burnham Yard has been sealed, and a Corrective Action Plan approved for the UPRR Burnham Yard site. The lining and sealing of the storm drain is intended to prevent further diesel seepages into the stormwater drain from groundwater. However, diesel impacted groundwater is seeping into the stormwater drain from the south. The Rio Grande Products Site overlies the likely source of the diesel plume located south of 6th Avenue (2005 MESA).

Based on the area topography and various other resources, groundwater flows in a west to northwesterly direction at this site, towards the Project Footprint. The current right-of-way plans indicate that the acquisition of right-of-way will not be required at these sites. Therefore, based on these sites listing in the LUST database, distance of site in relation to the Project Footprint, known/suspected soil and/or groundwater contamination, and no acquisition of right-of-way from this site, these sites received an environmental concern ranking of Medium.

Legend No. 34 – Landfill/California Expanded Metals Co./Champion Fence Co./Southwest Properties – 490 Osage Street, Denver, CO 80204

This site is a closed LUST site located at 490 Osage Street, just south of the Legend No. 35 site. According to environmental database records, site clean-up for the LUST incident was completed on October 20, 1993. On October 28, 1993, the site received a closure letter for the LUST incident.

Based on the area topography and various other resources, groundwater flows in a west to northwesterly direction at this site, towards the Project Footprint. The current right-of-way plans indicate that the acquisition of right-of-way will not be required at this site. Therefore, based on the site's listing in the LUST database as a site that, at this time, has received an NFA, distance of site in relation to the Project Footprint, and no acquisition of right-of-way from this site, this site received an environmental concern ranking of Medium.

Legend No. 35 – Rio Grande [SIC] Co. Residential Products Div. – 500 Osage Street, Denver, CO 80204

This site is a closed LUST site located at 500 Osage Street, just south of US 6 and north of the Legend No. 34 site. According to environmental database records, the status of the LUST incident was reported as closed on September 15, 2003. However, the 2005 MESA reported that this site likely overlies the source of the diesel impacted groundwater that is seeping into a stormwater drain associated with the Legend No. 32 site (2005 MESA). The 2005 MESA also indicated that petroleum contaminated soil and groundwater are located on the site and in the vicinity of existing I-25 and 6th Avenue (2005 MESA).

Based on the area topography and various other resources, groundwater flows in a west to northwesterly direction at this site, towards the Project Footprint. The current right-of-way plans indicate that the acquisition of right-of-way will not be required at this site. Therefore, based on the site’s listing in the LUST database, distance of site in relation to the Project Footprint, and no acquisition of right-of-way from this site, this site received an environmental concern ranking of Medium.

Based on the hazardous materials concerns addressed in this report, Table 5 lists the three sites with a High risk for environmental contamination and Figure 6 includes those sites and the known landfill areas in proximity to the Project footprint.

Table 5. Summary of High Risk Sites

Legend #	ROW Parcel Number	Property Name(s) and Address	Amount of ROW Required at Site/Description of ROW Acquired	2012 Potential Environmental Concern Ranking
3	AP-103 103-RM TE-103	Colorado Department of Transportation/Austria Motors 642 Federal BLVD. Denver, CO 80204	Assumed to be sliver parallel to US 6. 50' x 300'. Area appears to be trees/weeds/dirt and asphalt. Sheet Nos. 5.08 and 5.11	High
16	TE-217	Charles S. Yamaguchi and Chiseko Yamaguchi Sound on Wheels (former KOK Auto Repair and Body Shop /Yamaguchi Property) 450 Federal BLVD. Denver, CO 80204	Temporary Easement – 10' x 200' sliver on the southeast corner of West 5 th Avenue and Federal. Area is gravel and asphalt. Sheet No. 5.07	High
31		Sears Roebuck & Co. 1701 W. US 6 Denver, CO 80204 and 701 Osage Street Denver, CO 80219	Not showing any ROW needed at this address.	High

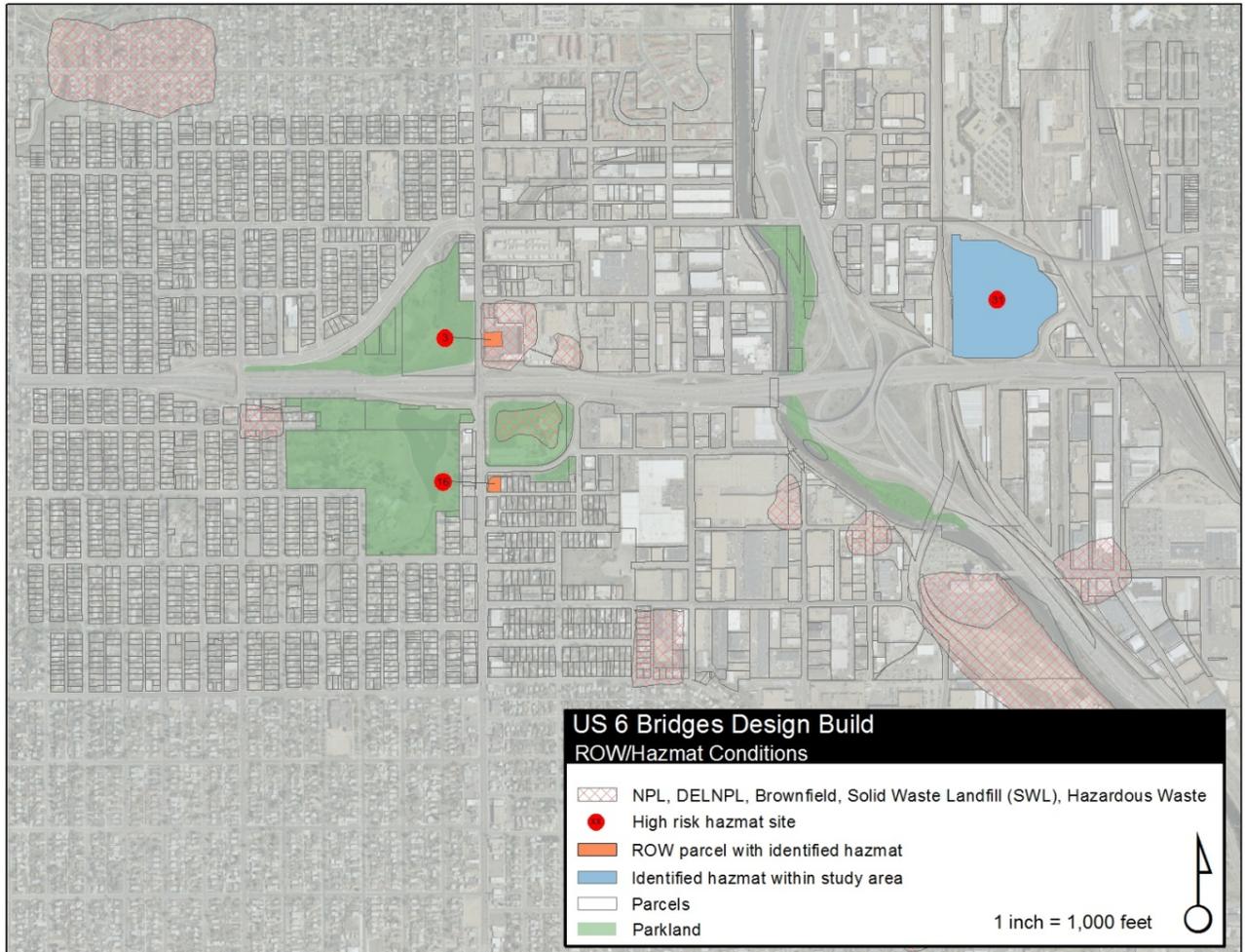


Figure 6: High Risk and Landfill Sites

3.2.1.4 Asbestos and Lead Based Paint Analysis on US 6 Bridge Structures

Five bridges, Federal Boulevard Bridge (F-16-EK), Bryant Street Bridge (F-16-EN/EM), South Platte River Bridge (F-16-EF), I-25 Bridge (F-16-DU), and the BNSF Railway Bridge (F-16-EJ), will be replaced by the Project. Therefore, paint samples and materials suspected to contain asbestos were collected from the US 6 Bridge structures (Structure IDs. F-16-EK, F-16-EN, F-16-EF, F-16-DU, and F-16 EJ) and sent to a laboratory for analysis. The laboratory analysis revealed that none of the bridge structures contained asbestos based materials. However, lead based paint was detected on the bridge structure over the BNSF Railroad (F-16-EJ). The paint colors identified as containing lead include the silver paint (0.07% lead), the brown paint (7.246% lead), and the gray paint (2.693% lead) (2011 ISA).

4. MITIGATION RECOMMENDATIONS

4.1 As Presented in FEIS and/or ROD

4.1.1 *Right-of-Way Acquisition*

The 2006 FEIS and 2007 ROD indicated that properties with potential or recognized environmental conditions would be partially or completely acquired for the US 6 Mainline Improvements and Bridge Projects. **Tables 4.13-2 to 4.13-5** in the FEIS include the recommended requirements for ROW acquisition. The CDOT ROW process is discussed in Section 4.13.3.2 of the FEIS.

4.1.2 *Known Soil and Groundwater Contamination*

Active LUST sites would be acquired for ROW for the Project (See **Tables 4.13-2 to 4.13-5** in the FEIS). In conjunction with final design, a detailed review of Colorado Department of Labor and Employment Division of Oil and Public Safety (OPS) files related to these properties would identify the results of any additional site investigations conducted at these properties, remedial systems or actions installed at the properties, and quarterly monitoring requirements. Prior to acquisition of these properties, coordination with OPS would be required. If site characterization and/or remediation have not been completed, CDOT may be required by OPS to complete these activities after acquisition. The OPS requirements may include:

- Removal of any underground storage tanks
- Excavation and management of petroleum contaminated soil
- Modifications to or redesign of remediation systems
- Replacement of any monitoring wells destroyed during construction
- Long-term groundwater monitoring

During the ROW acquisition process, additional properties may require similar actions depending on the results of the ISA.

4.2 Changes Based on the Project

Based on the review of the 2005 MESA, FEIS, as well as a 2011 ISA, new information presented in the 2012 EDR and various other agency databases, the findings of the 2012 site reconnaissance, and the limited subsurface investigations conducted in December 2011 and July 2012; there is a potential to encounter contaminated soil and groundwater throughout the Project Area and will be addressed as described below.

4.2.1 *Soil and Groundwater Contamination Investigations for Proposed ROW Acquisition*

Based on the 2012 design and analysis, six properties with potential or recognized environmental conditions will be partially or completely acquired for the Project. Within **Table 4**, there are descriptions of the six properties that CDOT is planning to acquire, their hazardous material concerns, and the investigations that CDOT recommends prior to construction. Prior to ROW acquisition, CDOT will conduct the following additional investigations.

- Given the results of the July 2012 subsurface investigation, CDOT is conducting a Phase II investigation at 642 Federal Blvd. (Legend # 3 –Colorado Department of Transportation/Austria Motors) to further determine the extent/level of soil and groundwater contamination at the site. Depending on the results of that investigation, CDOT will either require additional investigation at 620 Federal Blvd (Legend # 2 – U.S. Motels Federal, LLC) or reduce that sites risk ranking.
- The only other ROW site with a High risk ranking is 450 Federal Blvd (Legend # 16 – Charles S. Yamaguchi and Chiseka Yamaguchi/ Sound on Wheels). A 10 foot by 200 foot sliver of the site is needed as a temporary easement and therefore no additional investigation is required.

4.2.2 ***The other three sites with some ROW acquisition have Medium or Low risk rankings so no additional investigation is required.***

4.2.3 ***Other Soil and Groundwater Contamination***

In addition to the proposed ROW acquisitions, with known or suspected soil and groundwater contamination are within the Project study area and are listed in Table 4. CDOT is recommending but not requiring that the contractor selected to construct the Project conduct ISA's and if necessary additional investigations to determine the potential presence of soil/groundwater contamination at these sites, potentially impacting areas within the Project footprint.

Given the results of the 2005 MESA, 2011 ISA, and 2012 hazardous materials analysis, CDOT is conducting a Phase II investigation at the area under/around the BNSF Bridge and the area around the location of the Tunnel/I-25 Bridge to further determine if soil/groundwater contamination is present in these areas.

Additionally, given the results of the July 2012 subsurface investigation indicating that RCRA metals are likely present in soil and groundwater throughout the Project area, acquisition of properties with known/suspected contaminated soil and groundwater, and documented presence of lead based paint on two of the bridge structures, a Materials Management Plan (MMP) and a Health and Safety Plan (HASP), as required by Section 250.03 of the CDOT Standard Specifications for Road and Bridge Construction (CDOT, 1999) will be used throughout the project area. Prior to demolition of any structures or removal of utility lines, materials abatement will be conducted, as necessary, according to Section 250, Environmental, Health, and Safety Management, of the CDOT Standard Specifications for Road and Bridge Construction (CDOT, 1999) and relevant Occupational Safety and Health Administration (OSHA) and other regulatory requirements.

5. REFERENCES

American Society for Testing and Materials. 2000. ASTM Standards on Environmental Site Assessments for Commercial Real Estate, E 1527-00 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.

United States. Cong. Senate. *Residential Lead-Based Paint Hazard Reduction Act of 1992* – Title X. 102nd Cong., 2nd Session. S 3672. Washington: GPO, 1992. Available: <http://www.epa.gov/lead/pubs/titleten.html> Accessed August 2012.

FirstSearch Technology Corporation. April 30, 2012. Environmental Database Report

CDOT. 2006. Environmental Impact Statement (EIS) Valley Highway – Logan Road to 6th Avenue.

Felsburg Holt & Ullevig (FHU). 2005. Modified Environmental Site Assessment (MESA) for the Valley Highway Project. 2005 MESA.

Pinyon Environmental Engineering Resources, Inc. 2011. Initial Site Assessment. US 6 Bridge over the BNSF Bridge.

USEPA. Enforcement and Compliance History Online (ECHO). 2012.

Colorado Department of Labor and Employment/Division of Oil and Public Safety. Colorado Storage Information System. 2012.

Olsson Associates. August 2012. Limited Subsurface Investigation and Temporary Groundwater Monitoring Well Installation, U.S. Highway 6 Bridges and Federal, , Denver, Colorado. Olsson Associates Project #A11-2359.