8.0 Solid Waste Disposal and Hazardous Materials

8.1. Introduction

This chapter defines the solid waste and hazardous materials resources pertinent to the Long Bridge Project (the Project), and defines the regulatory context, methodology, and Affected Environment. For each Action Alternative and the No Action Alternative, this chapter assesses the potential short-term and long-term impacts on solid waste and hazardous materials. This chapter also discusses proposed avoidance, minimization, and mitigation measures to reduce adverse impacts of the Project.

Solid waste includes both hazardous and non-hazardous wastes. The United States Environmental Protection Agency (EPA) defines solid waste as any "garbage or refuse, sludge for a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, resulting from industrial, commercial, mining, and agricultural operations, and from community activities."[1] Hazardous wastes are certain solid wastes that require additional regulation because they are dangerous or known to be harmful to human health or the environment. Solid waste also includes construction debris and excavated soils.

The term **hazardous materials** is a broader term collectively used to describe:

- Hazardous wastes (as defined by the Resource Conservation and Recovery Act of 1976 [RCRA])[2]
- Hazardous substances (as defined in the Comprehensive Environmental Response, Compensation and Liability Act [section 101[14]] and listed at 40 CFR 302 to include listed hazardous wastes or unlisted solid wastes that exhibit specific characteristics such as ignitability, corrosivity, reactivity, or toxicity characteristic)[3]
- Asbestos (referring to the naturally occurring fibrous minerals used in many commercial and industrial applications, also defined under 40 CFR 302 as a hazardous substance)[4]
- Petroleum products (materials derived from crude oil such as fuel oil and gasoline)
- Any item or chemical which, when being transported or moved in commerce, is a risk to public safety of the environment and is regulated as such under its Pipeline and Hazardous Materials Safety Administration Regulations[5]
- Any substance or chemical which is a "health hazard" or "physical hazard" as defined by the Occupational Safety and Health Administration[6]

[1] EPA. Undated. *Criteria for the Definition of Solid Waste and Solid and Hazardous Waste Exclusions*. Accessed from https://www.epa.gov/hw/criteria-definition-solid-waste-and-solid-and-hazardous-waste-exclusions#solidwaste. Accessed April 30, 2018.
[2] 42 USC 6901
[3] 40 CFR 302
[4] 40 CFR 302
[5] 49 CFR 100-199
[6] 29 CFR 1910.1200

8.2. Regulatory Context and Methodology

This section describes the most pertinent regulatory context for evaluating impacts of solid waste and hazardous materials, and summarizes the methodology for evaluating current conditions and the probable consequences of the alternatives. This section also includes a description of the Study Area. **Appendix D1, Methodology Report**, provides the complete list of laws, regulations, and other guidance considered, and a full description of the analysis methodology**.**

8.2.1. Regulatory Context

Many laws and regulations govern the use and disposal of waste. At a Federal level, non-hazardous industrial solid waste and municipal solid waste are managed under the Solid Waste Program (RCRA Subtitle D), which sets criteria for municipal solid waste landfills and other solid waste facilities, and prohibits the open dumping of solid waste.[7] The Hazardous Materials Transportation Act of 1975 applies to the transportation of hazardous materials in commerce, including interstate and intrastate carriers.[8] Hazardous materials in railroad cars may only be shipped by persons registered by the United States Department of Transportation (USDOT) and the hazardous material must be properly classed, described, packaged, marked, labeled, and in condition for shipment.

Under RCRA, the District and Virginia have the authority to ensure safe and effective hazardous waste management and to establish a program regulating the generation, storage, transportation, treatment, and disposal of hazardous waste on land.[9] Following excavation for work in the Potomac River, soil transported by vessel must be done in accordance with United States Coast Guard (USCG) regulations.

8.2.2. Methodology

The Local Study Area for solid waste and hazardous materials is the Project Area, which includes the construction limits of disturbance. The Regional Study Area consists of the public and government land within a 1-mile radius of the Project Area surrounding the proposed bridge improvements and railroad infrastructure, as shown in **Figure 8-1**. This radius is generally consistent with the recommended search distance for standard environmental record sources suggested by the American Society for Testing and Materials. **Appendix D1, Methodology Report**, provides detailed information on methodology.

[7] EPA. Undated. *Criteria for the Definition of Solid Waste and Solid and Hazardous Waste Exclusions*. Accessed from https://www.epa.gov/hw/criteria-definition-solid-waste-and-solid-and-hazardous-waste-exclusions. Accessed May 18, 2018.
[8] 42 USC 6901
[9] District Law 2-64, District Code 8-1301 to 8-1322, and Virginia Code 10.1-1400 et seq.

Figure 8-1 | Regional Study Area for Solid Waste and Hazardous Materials

8.2.2.1. Solid Waste

The Affected Environment documentation identified all relevant past and current solid waste disposal sites within the Local Study Area based on available data sources. The impact analysis evaluated solid waste impacts qualitatively and quantitatively for both direct and indirect impacts. The analysis considered the generation of new types of solid waste and the relative sensitivity of areas within the Local Study Area to solid waste arising from operations or maintenance of the alternatives. The analysis also evaluated how the Project would manage solid waste and the impacts from solid waste disposal sites.

8.2.2.2. Hazardous Materials

The Affected Environment documentation identified the locations of potentially sensitive areas near the Regional Study Area (such as schools, health care facilities, dependent care facilities, places of worship, etc.), and included a database search report[10] (obtained from Environmental Risk Information Services on November 14, 2017) for known contaminated sites and for sites containing or generating hazardous substances that may affect soils or groundwater within the Project Area. The impact analysis for direct and indirect impacts considered:

- New sources of hazardous materials that would be introduced, such as potential contaminants associated with the operation of the Action Alternatives and hazardous materials stored or used at or along the Project Area;
- Existing resources identified near the Action Alternatives, which were evaluated for potential impacts during construction;
- Hazardous materials requiring disposal in railroad cars, which would be shipped by persons registered by the USDOT;
- Historical documentation, including aerial photographs, topographic, and Sanborn fire insurance maps;
- Historical USGS topographic maps showing the Local Study Area for the years 1900, 1945, 1951, 1956, 1965, 1971, 1972, 1979, 1980, 1983, 2013, and 2014; and
- Potential sites located within the Regional Study Area that may be impacted by hazardous and contaminated materials.

8.3. Affected Environment

This section summarizes the existing conditions of the area impacted by solid waste and hazardous materials. For a complete description of the Affected Environment, see **Appendix D2, Affected Environment Report**.

8.3.1. Solid Waste

Due to the current use of the Local Study Area as an active railroad right-of-way, currently no solid waste is generated or stored within it. Trains passing through do not generate or release solid waste.

[10] Environmental Risk Information Services (ERIS) Database Report. November 14, 2017.

Based on a review of the environmental record sources, the analysis did not identify any solid waste facilities or landfills within the Local Study Area. The closest permitted solid waste facility within the Regional Study Area is the Pentagon solid waste incinerator at 425 Old Jefferson Davis Highway in Arlington, Virginia, approximately 1,000 feet northwest of the Local Study Area, which would not impact the Local Study Area.

8.3.2. Hazardous Materials

8.3.2.1. Sensitive Areas

According to the District Atlas online database, no additional sensitive receptors such as daycare facilities, hospitals, or places of worship exist in the Local Study Area. However, the analysis in **Chapter 12, Land Use and Property**, determined the presence of schools and places of worship within 0.5 miles of the Project Area. **Chapter 5, Natural Ecological Systems and Endangered Species**, and **Chapter 6, Water Resources and Water Quality**, discuss sensitive environmental areas in the Local and Regional Study Areas.

8.3.2.2. Database Search Report

The analysis reviewed a database report[11] for evidence of hazardous materials releases and the storage of hazardous materials within the Local and Regional Study Areas. The database report identified no releases of oil and hazardous material or generators of hazardous waste within the Local Study Area. However, the database report identified several nearby properties where a release of oil or hazardous materials had occurred, or the generation of hazardous waste is located within the Regional Study Area. The analysis further reviewed the sites identified within the Regional Study Area using state and Federal databases to determine whether the sites may be located within or near to the Local Study Area. **Appendix D2, Affected Environment Report**, summarizes information obtained during these reviews**.**

8.3.2.3. Environmental Listings Identified at Nearby Properties

Although there are currently no environmental listings within the Local Study Area (see **Appendix D2, Affected Environment Report)**, 13 nearby environmental listings within the Regional Study Area may have the potential to impact the Local Study Area (**Figure 8-2**). These include three Voluntary Remediation Program (VRP) listings near the Long Bridge Park, one Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) No Further Remedial Action Planned site, and several Leaking Underground Storage Tank (LUST) sites and Federally listed generators of hazardous waste (**Table 8-1**). Additional testing would be required to determine if these nearby properties have impacted soils or groundwater within the Project Area.

[11] Environmental Risk Information Services (ERIS) Database Report. November 14, 2017.

Figure 8-2 | Map of Environmental Listings Identified at Nearby Properties

Table 8-1 | Environmental Listings Identified at Nearby Properties

Map ID	Property Name	Environmental Listing
1	SEI Arlington Acquisition Corp.	VRP and Spills database
2	Long Bridge Park	VRP database
3	RF&P Scrapyard Davis Industries	UST releases – releases listed as closed
4	Davis Industries Site	Institutional control; CERCLIS site; VRP database; National Priorities List site; Polychlorinated Biphenyl (PCB) site; and former EPA Superfund Site
5	Exxon Service Station #25644	UST releases – releases listed as closed; RCRA Conditionally Exempt Small Quantity Generator (CESQG) database
6	Potomac River	Federal Emergency Release Notification System (ERNS) database; UST – five listed as permanently out of use, two currently in use
7	NPS East Potomac Transit Storage Facility and Maintenance Yard	LUST database – releases listed as closed; RCRA-CESQG and RCRA No Longer Generating (NonGen) databases; UST – four listed as permanently out of use, three currently in use
8	Portal Hotel	LUST database – releases listed as closed; Federal Facility Index System (FINDS) and RCRA-CESQG databases; one UST listed as permanently out of use
9	CVS Pharmacy	FINDS and RCRA-CESQG databases
10	Washington Marina	ERNS database; FINDS, RCRA-CESQG, and RCRA NonGen databases
11	Potomac Center North	FINDS and RCRA-CESQG databases
12	901 D Street	Listed in the Hazardous Materials Information Reporting System database – listed as closed; RCRA-CESQG database
13	Exxon	LUST database – releases listed as closed; RCRA NonGen database; UST – 10 listed as permanently out of use

Active Railroad Right-of-Way within the Project Area

According to historical sources, railroad tracks have been located within the Project Area since at least 1858.[12] Although the third-party database report does not specifically identify this past use, railroad rights-of-way are often impacted with residual oil and hazardous materials, including metals, pesticides, and petroleum constituents such as polycyclic aromatic hydrocarbons (PAHs). Railroad-related sources of oil and hazardous materials may include creosote- or arsenic-laced railroad ties, herbicides, lubricating oils, diesel fuel, and diesel exhaust. Fill dirt of unknown origin used to bring tracks to grade may contain debris, coal, coal ash, coal slag, or other potential contaminants. Additional testing would determine whether contaminants have impacted the soil or groundwater of these nearby properties within the Project Area.

[12] Boschke, A. Topographic Map of the District of Columbia Surveyed in the Years 1856, 1857, 1858, and 1859. Accessed from https://www.loc.gov/resource/g3850.cw0678500/. Accessed March 22, 2018.

Former Railroad Station and Railroad Switching Yard Adjacent to the Local Study Area

The Baltimore and Potomac Freight Station and a railroad switching yard formerly abutted the Project Area on the south and north, respectively. Similar to railroad rights-of-way, railroad stations and switching yards have the potential for residual contamination due to the more frequent, intensive, and long-term use of pesticides to improve sight lines. As well as a greater intensity of train activity, railroad switching yards also have a higher potential for having a history that includes accidents involving hazardous cargoes, and may contain hazardous materials from equipment cleaning areas, fueling areas, and maintenance and repair activities. Additional testing would determine whether contaminants have impacted soil or groundwater of these nearby properties within the Project Area.

8.4. Permanent or Long-Term Effects

This section discusses the permanent or long-term effects following the construction of the No Action Alternative and Action Alternatives on the generation and handling of solid waste including hazardous materials within the Local and Regional Study Areas. For a complete description of the permanent or long-term effects, see **Appendix D3, Environmental Consequences Report.**

8.4.1. Solid Waste

8.4.1.1. No Action Alternative

The No Action Alternative would have no adverse permanent direct impacts on the environment and human health relative to existing solid waste generation or disposal. Based on the current and foreseeable use of the Local Study Area as an active railroad right-of-way, there is currently no solid waste generated or stored within the Local Study Area except for occasional wastes derived from track maintenance, which is properly disposed of in accordance with applicable local and federal regulations. There are currently no solid waste facilities or landfills within the Regional Study Area that would be impacted by the No Action Alternative, and it is not anticipated that a new solid waste facility would be constructed based on the current and foreseeable layout and space constraints of the Regional Study Area. The projects included in the No Action Alternative are not expected to increase solid waste generation, and therefore no adverse effect is anticipated.

8.4.1.2. Action Alternative A (Preferred Alternative)

Action Alternative A would have minor permanent indirect adverse impacts on the environment due to an increase in solid waste generation and disposal. Long-term direct impacts would be negligible and related to track maintenance; permanent indirect impacts would be minor and related to the ultimate off-site disposal location for soil generated during construction of the Project.

Although routine maintenance for Action Alternative A would cause a marginal increase in solid waste generation, the new bridge would not create any new on-site sources of solid waste. The addition of two tracks within the existing Corridor for four tracks total, with the construction of a new two-track bridge upstream of the existing Long Bridge, would result in approximately 32,100 feet of new or realigned track that would require occasional maintenance once the track is in service. However, solid waste derived from track maintenance would be properly disposed of and not have an adverse effect, similar to existing maintenance-related waste. The construction of power substations, track greasers,

and other features potentially containing oil and/or hazardous materials (OHM) is not anticipated and therefore would not have an adverse effect.

Up to 29,000 cubic yards of soil generated during construction will ultimately require off-site disposal at a landfill or other type of facility depending on the chemical characteristics of the soil. Soil that is not contaminated above residential thresholds can typically be reused at an off-site location with no adverse human or environmental impacts, while contaminated soils must be handled appropriately in accordance with local and state regulations. Minor adverse environmental effects would be associated with the off-site disposal of contaminated soils, since these soils would be moved to another location where they would result in the use of new land for their disposal. However, these soils would be stored to prevent future impacts to human health and the environment via appropriate containment within a properly licensed/permitted disposal facility. Several potential receiving facilities have been identified within 40 miles of the Local Study Area.

8.4.1.3. Action Alternative B

The permanent impacts associated with Action Alternative B would be similar to the impacts under Action Alternative A. The difference between the alternatives is that Action Alternative B will generate slightly more soil due to the construction of a new two-track bridge upstream of the existing Long Bridge and the replacement of the existing Long Bridge, resulting in approximately 45,000 cubic yards of soil requiring the same off-site disposal measures as Action Alternative A.

8.4.2. Hazardous Materials

8.4.2.1. No Action Alternative

The No Action Alternative would have adverse permanent impacts on the environment and human health relative to hazardous materials. As noted in **Appendix D2, Affected Environment Report**, the Local Study Area has a long history of use as a railroad right-of-way. Railroad rights-of-way are often impacted with residual OHM due to creosote- or arsenic-laced railroad ties, herbicides, lubricating oils, diesel fuel, diesel exhaust, and fill material of unknown origin used to bring tracks to grade. There are also documented releases of hazardous materials at nearby properties as listed in **Appendix D2, Affected Environment Report**. These have likely resulted in direct impacts to environmental media (such as soil and groundwater). Under the No Action Alternative, some contaminated environmental media (soil and groundwater), if present in the Local Study Area, could be disturbed by the planned railroad projects.

No changes in vegetation management practices are anticipated. The use of herbicides would likely continue throughout the railroad right-of-way, in accordance with local and state regulations. Therefore, no new adverse effects are predicted in association with vegetation management.

While rare, potential releases of hazardous materials from freight trains can occur along the Corridor either from train mechanical systems or cargoes. The quantity of hazardous wastes currently transported within the Project Area is unknown due to data collection limitations; therefore, it is considered infeasible to estimate potential future hazardous waste shipments. There is an even slighter potential for release of petroleum-based constituents from passenger trains from mechanical systems. Since these events are rare, although there would be an increase in the number of freight and passenger

trains, an increase in adverse effects cannot be approximated. Therefore, there are no new adverse effects of trains and their cargoes anticipated in relation to the No Action Alternative.

8.4.2.2. Action Alternative A (Preferred Alternative)

Action Alternative A would have minor permanent indirect adverse impacts on the environment and human health relative to hazardous materials. Long-term adverse direct impacts would be negligible and related to vegetation management and releases of OHM, and minor adverse indirect impacts would be related to the ultimate off-site disposal location for any contaminated soil generated during construction of the Project.

Following the construction of the new two-track bridge located upstream of the existing bridge and the additional two tracks within the existing right-of-way, vegetation along the new bridge as well as within the Corridor would be managed to prevent fire hazards and obstruction to visibility. Vegetation management practices often include the application of herbicides, which would have an intended impact on plants within the Local Study Area. Vegetation management practices would likely increase slightly upon the implementation of Action Alternative A. However, this increase would be negligible as the same length of railroad right-of-way would be managed. These practices would be conducted in accordance with local and Federal regulations to not result in an adverse effect.

Potential releases of OHM could occur from freight trains and their cargoes traveling along the Action Alternative A corridor. However, since there are no additional freight train trips compared to the No Action Alternative, no new adverse effects of trains and their cargoes are anticipated as a result of Action Alternative A.

The disposal of contaminated soils at an off-site location, such as a landfill, would have a minor adverse indirect impact since these soils would be moved to another location where they would result in the use of new land for their disposal. However, these soils are expected to be stored to prevent future impacts to human health and the environment via appropriate containment within a properly licensed and permitted disposal facility. Several potential receiving facilities have been identified within 40 miles of the Local Study Area.

8.4.2.3. Action Alternative B

The impacts under Action Alternative B would be the same as the impacts under Action Alternative A, except that soil generation from construction would be higher for Action Alternative B.

8.5. Temporary Effects

This section discusses the direct or indirect temporary effects of the No Action Alternative and Action Alternatives during construction, based on conceptual engineering design. For the complete technical analysis of the potential temporary impacts of generating and handling of solid waste including hazardous materials, see **Appendix D3, Environmental Consequences Report**.

During the construction phase of the Project, each Action Alternative would generate hazardous materials and solid waste. The types of solid waste and hazardous materials generated during construction would likely be related to environmental media (such as soil and groundwater), demolition

debris (for example, hazardous building materials and hazardous materials–containing equipment), and construction materials (such as machinery and supplies).

8.5.1. Solid Waste

8.5.1.1. No Action Alternative

The No Action Alternative may have temporary adverse direct and indirect impacts on human health and the environment due to an increase in solid waste generation and disposal during construction activities. Direct impacts would be associated with the excavation and removal of solid waste, and indirect impacts would primarily consist of the off-site transportation of these materials.

8.5.1.2. Action Alternative A (Preferred Alternative)

Action Alternative A would have minor temporary direct and indirect adverse impacts on human health and the environment due to an increase in solid waste generation and disposal. Direct impacts would be minor and associated with the excavation and removal of solid waste, and indirect impacts would be minor and primarily consist of the off-site transportation of these materials. The ultimate disposal of these material is discussed as a minor adverse permanent impact in **Section 8.4.1, Solid Waste**. Construction impacts would occur over a period of approximately 5 years.

During the construction phases of Action Alternative A, a moderate amount of construction debris is anticipated due to construction of the new bridge located upstream of the existing bridge. Construction debris would also be generated during construction and realignment of track within the railroad Corridor. This debris may include materials such as steel, concrete, railroad ties, and ballast.

A total of approximately 22,000 cubic yards of soil would be removed from the upstream crossing of the Potomac River; 1,000 cubic yards of sediment would be removed at the Washington Channel for pier and abutment work; and 6,300 cubic yards would be removed for the structures in the Corridor on land, totaling approximately 29,000 cubic yards of soil. These materials would be removed off-site and shipped to an appropriate receiving facility depending on chemical characteristics. Appropriate receiving facilities for contaminated soils may include landfills or recycling facilities. Several potential receiving facilities have been identified within 40 miles of the Local Study Area. There is a small risk of improper disposal or handling of impacted soils and sediments, which is considered a minor adverse indirect impact.

Asbestos-containing materials may be encountered if demolition disturbs unidentified conduits beneath the tracks, depending on their age. In addition, lead-based paint, mercury, PCBs, and other special wastes may also be present in conduits and bridge structures. The abatement of these materials would be performed in accordance with appropriate regulations and licensed disposal facility to ensure that there would be no adverse effect from these materials. Used wooden railroad ties are typically coated with chemical preservatives including creosote, which contains semi-volatile organic compounds and would require special handling procedures.

Since the solid waste (primarily construction debris and soils) must be managed and disposed of in accordance with applicable regulations, their generation would not result in a major adverse effect. Action Alternative A is projected to generate approximately 12,000 cubic yards of concrete and

3,000 tons of steel. There is a small risk of improper disposal (misdirected solid waste) during their handling, which is considered a minor adverse direct impact.

8.5.1.3. Action Alternative B

The impacts under Action Alternative B would be similar to the impacts under Action Alternative A, except for an increase in soil generated during construction phases of the Project. Action Alternative B would generate approximately 45,000 cubic yards of soil required for construction. While this is a greater amount of soil generated compared to Action Alternative A, it is still considered a minor adverse direct impact. Construction impacts would occur over a period of approximately 8 years and 3 months.

Action Alternative B would generate a higher volume of construction debris during the demolition of the existing bridge which includes approximately 40,000 cubic yards of concrete and 10,000 tons of steel. Although there is a higher risk compared to Action Alternative A, the risk of improper disposal (misdirected solid waste) during handling is still considered a minor adverse direct impact.

8.5.2. Hazardous Materials

8.5.2.1. No Action Alternative

As noted in **Section 8.5.1,** the No Action Alternative may have temporary adverse direct and indirect impacts on human health and the environment due to an increase in solid waste generation and disposal during construction activities. Within the Local Study Area, construction activities for railroad projects included in the No Action Alternative could potentially encounter hazardous soils and require proper removal.

8.5.2.2. Action Alternative A (Preferred Alternative)

Action Alternative A would have minor temporary direct and indirect adverse impacts on the environment and human health relative to hazardous materials. Action Alternative A would cause minor direct impacts related to the excavation and transportation of contaminated soils or sediments, and potential spills from construction-related equipment. Action Alternative A would cause minor indirect impacts primarily from the off-site transportation of these materials. Construction impacts would occur over a period of approximately 5 years.

With the construction of the new two-track bridge and construction and realignment of track within the railroad right-of-way, potential hazardous and non-hazardous soils and sediments would likely be excavated and require proper removal. All soil and sediments removed from the Project Area would be removed in accordance with the Virginia Department of Environmental Quality Division of Land Protection and Revitalization regulations and guidance as well as the District Department of Energy and Environment's (DOEE) Remediation and Site Response Program. Hazardous materials would be disposed of at a licensed disposal facility. Several potential receiving facilities have been identified within 40 miles of the Local Study Area.

All impacted soils and sediments would require proper disposal during the construction phases of the Project, which may require resources such as vehicles and barges for off-site transportation. Impacted sediments would be disposed of in accordance with the applicable USCG regulations. The movement of contaminated materials within the Local Study Area could have a minor adverse indirect impact on the

Regional Study Area during the transportation, disposal, and management of contaminated media due to the potential for improper handling, misdirection of wastes.

Construction-related equipment contains mechanical fluids that have the potential to result in spills or leaks when not maintained in good working order. Contractors working within the Local Study Area may also employ the use of supplies containing hazardous materials to conduct their work. Although the spill or release of OHM in the process of construction is an unlikely event, spill prevention plans would be required to prevent and control any such spills. Therefore, construction-related equipment is anticipated to result in a negligible adverse direct effect.

A temporary concrete plant would be required during the construction phase of the Project. The process of creating concrete involves the use of aggregate, sand, and water, which would need to be transported to and stored within the Local Study Area. The raw materials associated with concrete generation may originate from a variety of sources and have the potential to contain OHM. Therefore, materials containing OHM would need to be stored properly either on impermeable surfaces covered as needed to prevent erosion, or within containers to prevent the materials from impacting the surrounding environment. The generation of concrete also involves the use of chemical additives, lubricants, and fuel, the use of which has the potential to impact environmental media within the Local Study Area. These materials would be stored in vessels such as tanks and drums with secondary containment in order to prevent an accidental spill. The contractor operating the plant would also need to implement a Spill Prevention Plan to respond to a release of fuel or chemicals, if an incident were to occur. Finally, the process of creating concrete may generate dust, which would need to be monitored and suppressed to prevent off-site migration of particulate matter. Based on the processes noted above, the operation of the concrete plant would likely have a minor temporary adverse impact on the Local Study Area and indirect impacts based on the potential for dust generation, spills of OHM (that would be cleaned up if they occur), and transportation impacts (truck emissions and fuel usage).

8.5.2.3. Action Alternative B

The impacts under Action Alternative B would be similar to the impacts under Action Alternative A, except for the demolition and removal of the existing bridge. Potential contaminants of concern associated with the construction debris from the bridge include lead-based paint, mercury, PCBs, and other special wastes that may be present in conduits and bridge structures. Although there is a higher risk compared to Action Alternative A, the risk of improper disposal during handling is still considered a minor adverse direct impact. Construction impacts would occur over a period of approximately 8 years and 3 months.

8.6. Avoidance, Minimization, and Mitigation

This section describes proposed mitigation to the generation and handling of solid waste including hazardous materials.

As noted in the above sections, the primary impacts associated with the Action Alternatives stem from hazardous building debris abatement, and contaminated soil and sediment generation. For a complete description of the avoidance, minimization, and mitigation measures, see **Appendix D3, Environmental Consequences Report**.

8.6.1. Solid Waste

The construction of a new bridge and construction and realignment of track within the railroad right-of-way would generate construction debris. The Virginia Department of Rail and Public Transportation (DRPT, the project sponsor for final design and construction, would require the contractor to remove and dispose of solid waste generated during clearing and grubbing, demolition, and other construction operations according to local and Federal regulations.

DRPT would require the contractor to inventory potentially hazardous building materials (such as asbestos, lead-based paint, PCBs, etc.) prior to any structural demolition or renovation work. If these hazardous materials are found to be present in the structures, then they would be properly handled and disposed of in accordance with state and local regulations. The materials would be transferred to a receiving facility licensed to handle the specific type of solid waste.

8.6.2. Hazardous Materials

The construction of a new bridge and construction and realignment of track within the railroad right-of-way would generate hazardous materials (such as contaminated soil and sediment). DRPT would require the contractor to develop a Soil Management Plan (SMP) in accordance with Federal Railroad Administration specifications based on results of subsurface investigations. Soil analytical results from these subsurface investigations would be used to pre-characterize soils designated for excavation during construction phases of the Project. The SMP would outline standards and procedures for the identifying and disposing of contaminated materials during construction. Soil tracking protocols would be detailed in the SMP to include tracking soils from the point of excavation to designated testing areas and to the ultimate disposal site. Fugitive dust would be controlled through wetting, sweeping, and other suppression techniques. Furthermore, DRPT would develop a Health and Safety Plan (HSP) to provide the minimum health and safety specifications for contractors during construction including requirements for environmental monitoring, personal protective equipment, site control and security, and training. The implementation of SMPs and HSPs would be applicable to both Action Alternatives.

Spills and leaks associated with vehicles, train collisions, the concrete plant, and heavy machinery would be mitigated through spill response programs that would specify emergency response procedures for spill and leak events. Depending on the nature of the spill or discharge to the environment, it may also be necessary to contact regulatory agencies such as the National Response Center, the EPA Region 3 Office, the USCG Marine Safety Office, Virginia Department of Emergency Service, and DOEE. NPS must also be notified of a spill or discharge within or adjacent to NPS lands.