

Section 4.15

Hazardous Materials

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Acronyms and Abbreviations

BRT	Bus Rapid Transit
CFR	Code of Federal Regulations
EIS	Environmental Impact Statement
ESA	Environmental Site Assessment
LRT	Light Rail Transit
NYCRR	New York Codes, Rules, and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOT	New York State Department of Transportation
REC	Recognized Environmental Condition
Superfund	Federal Comprehensive Environmental Response, Compensation and Liability Act

4.15 HAZARDOUS MATERIALS

This section identifies the potential for existence of contaminated materials within or proximate to the Project and evaluates the Project’s potential effects on public health and the environment arising from any such contamination. “Hazardous materials” are generally defined as any substance that poses a threat to human health or the environment and include petroleum products, pesticides, organic compounds, heavy metals, asbestos-containing materials, lead-based paint, or other compounds that could harm human health or the environment (42 CFR § 9601). For the construction phase, all potentially affected receptor groups (e.g., on-site workers, nearby residents, and sensitive environmental resources) are considered, along with the possible exposure pathways – inhalation of airborne contaminants, ingestion of contaminated dust or water, and dermal contact with hazardous materials.

Appendix E1, “Hazardous Materials Supplemental Information” and Appendix E2, “Phase I ESA” contains additional details. Table 4.15-1 summarizes the impact findings related to hazardous materials.

Table 4.15-1. Hazardous Materials Impacts Summary

Alternative	Permanent Impacts	Mitigation
No Build Alternative	No impacts	None
LRT Build Alternative	5 sites impacted by Project construction with hazardous waste or contaminated materials present.	No adverse impacts after proposed mitigation.
BRT Build Alternative	5 sites impacted by Project construction with hazardous waste or contaminated materials present.	No adverse impacts after proposed mitigation.

Construction activities associated with either the LRT Build Alternative or BRT Build Alternative are anticipated to result in temporary hazardous or contaminated material Project impacts. The assessment of these temporary Project construction impacts, and proposed mitigation measures are described in Section 4.17, “Construction Effects.” Requiring the contractor to identify hazardous or contaminated materials and procedures for safely handling these materials in accordance with applicable federal, state, and local regulations and environmental controls will mitigate these temporary construction impacts.

4.15.1 Environmental Consequences

4.15.1.1 No Build Alternative

No adverse construction or permanent impacts related to hazardous or contaminated materials would occur as part of the No Build Alternative.

4.15.1.2 Build Alternatives

Table 4.15-2 lists the 39 locations identified in Appendix E3, “Phase I ESA” where there is potential for hazardous or contaminated materials to affect the cost and construction schedules of the LRT Build Alternative and the BRT Build Alternative. These locations are those which are

expected to require Project property acquisition or easements as documented in Section 4.1, “Property Acquisition and Displacements.”

Table 4.15-2. Potential Phase I ESA Sites of Concern Affected by Project Property Acquisitions

Map Key	Property Name and Address	LRT Build Alternative	BRT Build Alternative
6	Vacant Lot – 159 Kenmore Ave	Permanent Easement	-
8	Sweeney’s Garage – 424 Niagara Falls Blvd	Partial Acquisition or Permanent Easement	Partial Acquisition or Permanent Easement
9	American Auto World – 733 Niagara Falls Blvd	Partial Acquisition or Permanent Easement	-
10	Empire Auto Electric – 803 Niagara Falls Blvd	Partial Acquisition or Permanent Easement	-
12	Sentry North Appliance Service – 845 Niagara Falls Blvd	Partial Acquisition or Permanent Easement	Partial Acquisition or Permanent Easement
13	Fancy Florist – 853 Niagara Falls Blvd	Partial Acquisition or Permanent Easement	Partial Acquisition or Permanent Easement
14	Corsi A First Klass Collision Center – 874 Niagara Falls Blvd	Partial Acquisition or Permanent Easement	Partial Acquisition or Permanent Easement
15	Lombardo Funeral Home – 899 Niagara Falls Blvd	Full Acquisition	Full Acquisition
17	Sun City Mattress – 926 Niagara Falls Blvd	Full Acquisition	Full Acquisition
18	Partner’s Bar & Pizzeria – 934 Niagara Falls Blvd	Partial Acquisition or Permanent Easement	Partial Acquisition or Permanent Easement
20	El Palenque Restaurant – 951 Niagara Falls Blvd	Partial Acquisition or Permanent Easement	Partial Acquisition or Permanent Easement
23	Pep Boys Auto Parts & Service – 1025 Niagara Falls	Partial Acquisition or Permanent Easement	Partial Acquisition or Permanent Easement
24	AudioMotive Creations – 1167 Niagara Falls Blvd	Full Acquisition	Full Acquisition
25	Plaza – 1200 Niagara Falls Blvd	Partial Acquisition or Permanent Easement	Partial Acquisition or Permanent Easement
26	Boulevard Mall – 1261-1265 Niagara Falls Blvd	Partial Acquisition or Permanent Easement	Partial Acquisition or Permanent Easement
27	Goodyear Auto Service – 1280 Niagara Falls Blvd	Partial Acquisition or Permanent Easement	Partial Acquisition or Permanent Easement
28	Valu Muffler & Brake Auto Center – 1346 Niagara Falls	Partial Acquisition or Permanent Easement	Partial Acquisition or Permanent Easement
29	Delta Sonic Car Wash – 1355 Niagara Falls Blvd	Partial Acquisition or Permanent Easement	Partial Acquisition or Permanent Easement
30	Firestone Complete Auto Care – 3893 Maple Rd	Full Acquisition	Full Acquisition
31	Premiere Group – 3900 Maple Rd	Partial Acquisition or Permanent Easement	Partial Acquisition or Permanent Easement
32	Sweet Home Middle School – 4150 Maple Rd	Partial Acquisition or Permanent Easement	Partial Acquisition or Permanent Easement
33	NOCO Express – 4265 Maple Rd	Partial Acquisition or Permanent Easement	Partial Acquisition or Permanent Easement
35	Anchor Bar – 4300 Maple Rd	-	Partial Acquisition or Permanent Easement
36	Ball Pump Station – 1201 Sweet Home Rd	Partial Acquisition or Permanent Easement	-
37	University of Buffalo – Millersport Hwy	Partial Acquisition or Permanent Easement	Partial Acquisition or Permanent Easement

Map Key	Property Name and Address	LRT Build Alternative	BRT Build Alternative
39	Town of Amherst – 350 JJ Audubon Pkwy	Partial Acquisition or Permanent Easement	Partial Acquisition or Permanent Easement

Source: Watts Architecture & Engineering. May 17, 2024. Phase I ESA for the Buffalo-Amherst-Tonawanda Corridor Transit Expansion, City of Buffalo, Towns of Amherst & Tonawanda

A detailed review of the 26 potential sites of concern affected by project property acquisition was then completed to determine anticipated Project impacts (Appendix D10, “Construction Effects Supplemental Information”). There are no active or legacy Brownfield, Superfund, or state-led remediation sites that were identified within the Project study area. The identified 26 sites affected by the Project with potential hazardous or contaminated materials were determined to fall into one or both categories, auto related industry, sites with tanks, and were also listed on the NY Spill database.

4.15.1.3 **Auto Related Industry (Gas Stations, Auto Sales & Service, Auto Parts)**

Properties with current or historic auto-related industry uses are a concern due to potential petroleum impacts. However, Project impacts are not identified for this reason alone, unless supported by additional Recognized Environmental Conditions (REC) (e.g., spills, regulatory violations).

4.15.1.4 **NY Tanks**

Properties with storage tank use are a concern due to potential petroleum impacts. However, Project impacts are not identified for this reason alone, unless supported by additional RECs (e.g., leaking storage tanks, spills).

4.15.1.5 **NY Spills Cases**

The most frequent RECs identified were closed NY Spills cases related to petroleum releases. These cases were evaluated based on their closure status and regulatory compliance. No open NY Spills cases were found adjacent to the Project alignment. Closed NY Spills cases were categorized as follows:

- **Low Risk:** Cases closed by NYSDEC with documentation confirming cleanup standards (CP-51, legacy STARS, or unlisted values) were met.
- **High Risk:** Cases closed without meeting clean-up standards, typically due to infeasible remediation/excavation (e.g., subsurface utilities, paved surfaces preventing soil excavation). These sites have a higher risk of encountering residual contamination and may constitute a Project impact as a result of construction disturbance and may require a limited Phase II investigation to assess extent of remaining contamination.

4.15.1.6 Detailed Review of Phase I ESA Findings

A detailed analysis of the 26 potential sites of concern affected by project property acquisition was completed and summarized in Table 4.15-3. This included an assessment of current and historic property uses, an evaluation of the Project's anticipated property acquisition needs, and a detailed review of the regulatory database findings.

Table 4.15-3 Description of Sites Effected by the Project with Potential Hazardous or Contaminated Materials

Map Key	Property Name and Address	Regulatory Agency Database Review	Assessment	Project Impact
6	159 Niagara Falls Blvd Kenmore Ave	NY Spill case # 9875345 (tank failure, cleanup but did not meet NYSDEC standards), # 9206303 (spill case closed), # 9206340 (spill case closed), 0651775 (tank failure, contaminated soil found, spill case closed, but did not meet NYSDEC cleanup standards). NYSDEC Bulk Storage: Red Apple Food Mart 3 tanks (all closed-removed).	NY Spill case # 9875345: Four sidewall and two floor post-excavation samples meet STARS # 1 standards, except for low-levels on south wall (benzene 31ppb, MTBE 390ppb, 1,2,4-Trimethylbenzene 130ppb, M,P-Xylenes 200ppb). 10 Yds of soil removed, but contractor could not dig anymore due to utilities. Stained soil remained on excavation sides and bottom. Did not meet NYSDEC cleanup standards. Higher likelihood of contamination. NY Spill case # 9206303: post-excavation TCLP samples below detection. Met standards. NY Spill case # 0651775: Excavation, sampling, and disposal documented. No exceedances in sample results, elevated PID readings remained.	Yes, Project construction will impact this site.
8	Sweeney's Garage – 424 Niagara Falls Blvd	NY LTANKS Site ID: 192730 Spill Number/Closed Date: 9802942/ 1998-09-14 NY Spill case # Spill Number/Closed Date: 0075398 / 2000-12-05 Spill Number/Closed Date: 9975654 / 2000-01-24 Spill Number/Closed Date: 9306642 / 1993-09-03	Eliminated from consideration. No RECs (e.g., spills, regulatory violations) identified.	None
9	American Auto World – 733 Niagara Falls Blvd	NY Spill case # 0485611 (spill was cleaned up and closed, but did not meet NYSDEC cleanup standards).	NY Spill case # 0485611: Excavated all accessible impacted soils, excavated 2128 tons impacted soils. Some contaminated soil was not accessible due to utilities along Niagara Falls Blvd. 20 post-excavation sidewall samples taken with 6 showing CP51 exceedances. 8 bottom samples taken with no CP51 exceedance. Sample exceedances are minor except at samples W4 along the buildings north side and W16 adjacent to utilities and Niagara falls Blvd. Did not meet NYSDEC cleanup standards. Higher likelihood of contamination.	Yes, Project construction will impact this site.
10	Empire Auto Electric - 803 Niagara Falls Blvd	N/A	Site is not listed in any regulatory databases and no specific indication of tanks and/or spills.	None
12	Sentry North Appliance - 845 Niagara Falls Blvd	Historic Cleaner: Economy Cleaners operated 1980-1985	Historic cleaner location. Site has no record of spills or tanks.	None

Map Key	Property Name and Address	Regulatory Agency Database Review	Assessment	Project Impact
13	Fancy Florist - 853 Niagara Falls Blvd	NY Spill # 0550174	NY Spill case # 0550174: abandoned drums removed. 105 tons of impacted soil removed. Five post-excavation samples showed no exceedances. NFA. Spill was cleaned up and met NYSDEC cleanup standards.	None
14	Corsi A First Klass Collision Center - 874 Niagara Falls Blvd	ECHO: one record identified, AIRS: one record for point source emissions identified.	Site has history of use as auto repair shop; this site use is commonly known to potentially exhibit petroleum contamination; however no documented cases of petroleum/solvent spills recorded in databases.	None.
15	Lombardo Funeral Home – 899 Niagara Falls Blvd	NY Spill # 0075336: gasoline contaminated soil was removed. Spill was cleaned up, closed, and met NYSDEC cleanup standards.	NY Spill case # 0075336: Phase II found contaminated soil in 1 out of 11 borings. Day Environmental excavated contaminated soil. 4 side and 1 bottom post-excavation samples were below TAGM levels. NY Spill case was cleaned up, closed, and met NYSDEC cleanup standards. Site historic auto use is commonly linked with petroleum contamination, however only recorded spill case was cleaned up and met NYSDEC standards.	None
17	Sun City Mattress – 926 Niagara Falls Blvd	N/A	Site historic auto use is commonly linked with petroleum contamination, however no documented cases of petroleum/solvent spills recorded in databases.	None
18	Partner's Bar & Pizzeria – 934 Niagara Falls Blvd	NYSDEC Bulk Storage: 1 tank closed and removed	Site has a history of tanks on site and historical use as auto repair shop commonly linked to petroleum contamination, however no documented cases of spill cases on-site.	None
20	El Palenque Restaurant – 951 Niagara Falls Blvd	NY Spill # 0911057: contaminated soil was removed but minor amounts remained around sewer line.	NY Spill # 0911057: Excavation was not able to reach on sidewalks along Niagara Falls Blvd and Eggert ave. Excavated 408 tons of impacted soils. Collected 8 samples, CP51 exceedance in samples SW8, SW14. Groundwater showed minor exceedances. NY Spill case was cleaned up and closed, but did not meet NYSDEC cleanup standards, higher likelihood of encountering contamination.	Yes, Project construction will impact this site.
23	Pep Boys Auto Parts & Service – 1025 Niagara Falls	NYSDEC Bulk Storage: 1 tank closed and removed. NYSDEC Spill # 1006430 gasoline spill. NY Spill # 9912271, contamination found during tank removal.	Site former generator of haz waste. Tank was removed/closed. NY Spill # 9912271: Removed a 550 gallon waste oil tank along with impacted soils. 2 samples taken, no exceedances observed. 52 tons of contaminated soil disposed. NFA. NY Spill # 1006430: car fire gas tank spilled and entered storm drain. Pads and booms used to absorb product. NFA. Historical site use as auto shop is linked with petroleum contamination, however two recorded closed spill cases met NYSDEC cleanup standards.	None
24	AudioMotive Creations – 1167 Niagara Falls Blvd	NY Spill case #9875468: oil found in storm culvert. NY Spill case # 9713614: oil found in storm culvert.	NY Spill case #9875468: minor amount of oil in the excavation for new storm drain. Floor drains discharge to storm sewer. All floor drains were permanently sealed. NY Spill case # 9713614: no evidence of spilling to floor drains. NFA. Historical site use as auto shop is linked with petroleum contamination, however two recorded closed spill cases met NYSDEC cleanup standards.	None

Map Key	Property Name and Address	Regulatory Agency Database Review	Assessment	Project Impact
25	Plaza – 1200 Niagara Falls Blvd	NY Spill case #9213436: equipment failure.	NY Spill # 9213436: tank failure, spill absorbents deployed and disposed of. Site historical use as auto shop and dry cleaner are linked with contamination, however 1 spill was cleaned up, closed and met NYSDEC cleanup standards. Building is approximately 500ft from proposed route, which lowers likelihood of encountering contamination.	None
26	Boulevard Mall – 1261-1269 Niagara Falls Blvd	NY Spill cases # 9106426, 0175412, 9406936 closed and met NYSDEC clean up standards. NYSDEC Bulk Storage: 1 tank was closed and removed.	NY Spill cases # 9106426: small spill of non-PCB oil into vault, cleaned up debris and disposed. NFA. NY Spill case #0175412: hydraulic oil spill while removing hydraulic lift. NY Spill case # 9406936: diesel spill into storm sewer. Speedi Dry applied. NFA. Three NY Spill cases closed and met NYSDEC cleanup standards.	None
27	Goodyear Auto Service - 1280 Niagara Falls Blvd	NY Spill cases # 9302662, 9113171, 9416566 cleaned up, closed and met NYSDEC cleanup standards	NY Spill cases # 9302662: hydraulic lift leaked fluid to ground. Contaminated soil excavated. Post-excavation samples were all non-detect. NY Spill #9113171: waste oil spill under concrete pad. contaminated soil excavated. Post-excavated samples were non-detect. NY Spill# 9416566: Waste oil spill from hydraulic lift. Post-excavation samples under standard. Three NY Spill cases closed and met NYSDEC cleanup standards. Located 500ft from route - lower likelihood of encountering contamination.	None
28	Valu Muffler & Brake Auto Center – 1346 Niagara Falls	Property not listed	Eliminated from consideration. No REC's (e.g., spills, regulatory violations) identified.	None
29	Delta Sonic Car Wash – 1355 Niagara Falls Blvd	NYSDEC Bulk Storage: 46 tanks, 22 in service, 24 closed/removed. NYSDEC Spill cases # 1306629, 8504373, 0514837, 0102552, 9406720, 9807773, 0900340, 0910621, 1508488 closed and met NYSDEC clean up standards.	Post-excavation sample results below CP-51 standards. Historic use as auto body shop, however, all nine spill cases were cleaned up, closed, and met NYSDEC clean up standards.	None
30	Firestone Complete Auto Care – 3893 Maple Rd	NYSDEC Bulk Storage: 1 tank in service. LTANKS: spill # 9212411 cleaned up, closed, and met NYSDEC clean up standards.	Tank was removed and closed. Historical use as autobody shop, however only NY Spill case # 9212411 was cleaned up, closed, and met NYSDEC cleanup standards. NFA. No other record of contamination on site.	None
31	Premiere Group – 3900 Maple Rd	NYSDEC Bulk Storage: 6 tanks closed/removed. NY Spill cases # 1001596, 9975473, 8702308, 9201849.	NY Spill # 1001596: hydraulic oil spill. Disposal of 1125 tons of impacted soil. Post-excavation results show no exceedances. Sheen still produced in areas of the old building. Other spill cases NFA and no remaining contamination. Historical use as auto body shop and one NY Spill case that did not meet NYSDEC cleanup standards - higher likelihood of encountering contamination.	Yes, Project construction will impact this site.

Map Key	Property Name and Address	Regulatory Agency Database Review	Assessment	Project Impact
32	Sweet Home Middle School – 4150 Maple Rd	NYSDEC Bulk Storage: 1 tank removed and closed. NY Spill cases # 0608981, #9509066	NY Spill # 0608981: 5 gallons of non-PCB oil spill on concrete pad and on soil. Absorbents used to clean up spill and contaminated soil removed. NFA. NY Spill # 9509066: muriatic acid and hypochlorite mixture created fumes, no spill. NFA. Spills met NYSDEC clean up standards - lower likelihood of contamination.	None
33	NOCO Express – 4265 Maple Rd	NYSDEC Bulk Storage: 5 tanks (2 in service, 3 closed/removed), NY Spill cases # 0751262 LTANKS spill # 9709710	NY Spill # 0751262: petroleum odor/staining found during piping installation. Excavation to 6-8bgs. 1114 tons impacted soil removed. Post-excavation samples show all bottom samples meet CP-51, exceedances remain in sidewall samples but cannot dig any closer to road or sewer line. NY Spill # 9709710: removal of tanks and soil. Post-excavation sampling results found exceedances of STARS standards. Two spills are closed but did not meet NYSDEC cleanup standards, higher likelihood of encountering contamination.	Yes, Project construction will impact this site.
35	Anchor Bar – 4300 Maple Rd	Historic Auto: Mobile Station 1972.	Site is a historic auto site which are linked to historic petroleum contamination, however no records of spills associated with the site.	None
36	Ball Pump Station – 1201 Sweet Home Rd	NY SPILL cases # 1603248, 0375269. LTANKS spill case # 9209938	NY Spill # 1603187: hydraulic oil spill on soil and stone, stone and impacted soil removed. NFA. NY Spill # 9209938: Boring B-12 over guidance. Standards not documented. Spills did not meet NYSDEC standards or standards were not documented. Location is approximately 500 ft from proposed excavation area on Sweet Home Rd. - lower likelihood of encountering contamination.	None
37	University of Buffalo – Millersport Hwy	NYSDEC Bulk Storage: 113 tanks (55 in service, 53 closed/removed). NY Spill cases # 9000336, 8806382, 8708045, 0175123, 0075497, 9975668, 0101732, 9007861, 9207489, 8805153, 0206015, 0104381. LTANKS Spills # 0104703, 9805985, 0102567, 9706838, 0011535	All 12 NY Spill cases were closed and met NYSDEC cleanup standards. LTANKS spill # 0104703 did not meet NYSDEC cleanup standards. Post-excavation samples were TAGM 4046 standards, but not below STARS standards. LTANKS spill # 0102567 did not meet NYSDEC cleanup standards. Impacted soil excavated, post-excavation samples showed some exceedances in SVOCs, however all feasible excavation on site was completed, so spill case was closed. Due to large size of university campus, need more information on location of spills not meeting NYSDEC cleanup standards to determine proximity to proposed excavation.	None
39	Town of Amherst – 350 JJ Audubon Pkwy	NYSDEC Bulk Storage: 1 tank closed/removed. LTANKS spill # 9210347	LTANKS # 9210347: No visual contamination, excavated material was not contaminated. Met NYSDEC cleanup standards. Building is approximately 250ft from roadway - lower likelihood of encountering contamination.	None

4.15.2 Anticipated Project Impacts

The detailed evaluation of the Phase I ESA findings has identified five locations with anticipated Project impacts for both Build Alternatives. These five sites are listed below:

- 159 Niagara Falls Blvd Kenmore Ave
- American Auto World – 733 Niagara Falls Blvd
- El Palenque Restaurant – 951 Niagara Falls Blvd
- Premiere Group – 3900 Maple Rd
- NOCO Express – 4265 Maple Rd

All five locations have a historic NY Spill case that has been closed but did not meet applicable standards at the time of the investigation and remediation activities due to technical infeasibility. Technical infeasibility is defined as an area of the property where exceedances for hazardous or contaminated materials have been identified, but the materials were not addressed because of the presence of existing roadways and utilities. To complete remediation activities would require the demolition and reconstruction of existing roadways and utilities.

As a result, Project construction disturbance at these five locations has been identified as a temporary Project impact. While no long-term adverse effects are expected after remediation, construction activities at these locations could temporarily increase the risk of exposure to hazardous materials. Without proper controls, workers could inhale contaminated dust or vapors, nearby individuals could inadvertently ingest or come into contact with contaminated materials, and contaminants could potentially migrate off-site. Potential receptor groups with temporary increased risk of exposure to hazardous materials are on-site construction workers and project personnel, nearby residents and general public, sensitive populations, sensitive ecosystems and wildlife, and future users of each site. Sensitive populations include children at schools and the Sweet Home Middle School on Maple Road is near the NOCO Express site located at 4265 Maple Road. The likelihood of the Project impacting the community through increased exposure to hazardous materials is low, due to contractor requirements for identifying and safely handling such materials in accordance with federal, state, and local regulations, as well as the implementation of environmental mitigation measure.

4.15.2.1 Exposure Pathways and Risks

For each receptor group identified, there are three key exposure pathways – inhalation, ingestion, and dermal contact – both during construction and after construction. Table 4.15-4 is an assessment of how hazardous materials in the project area could pose risks via each pathway.

Table 4.15-4 Exposure Pathways and Risks

Exposure Pathway	Risks During Construction	Risks After Construction
Inhalation Exposure	<ul style="list-style-type: none"> ▪ Dust Particles: Dry, contaminated soil can be pulverized by excavation or drilling and become dust. If the soil contains hazardous substances (like lead, arsenic, or hydrocarbons), those substances can adhere to dust particles. Nearby workers or residents could inhale this dust if it is not controlled. ▪ Volatile Organic Compounds (Vapors): Petroleum products and solvents can emit vapors when exposed to air. During excavation of a former gas station site with residual gasoline in soil, volatile organic compounds (VOCs) such as benzene, toluene, or others may evaporate. Workers in the trench or people downwind could inhale these vapors. 	<ul style="list-style-type: none"> ▪ Dust from Residual Contamination: Once construction is complete, most soils will be backfilled and surfaces restored (paved or vegetated). This greatly reduces dust generation. The only scenario where inhalation post-construction is an issue would be if contaminated soil was left exposed or if future ground-disturbing activities occur without precautions. ▪ Residual Vapor Intrusion: If some contaminants remain under newly paved areas or near structures, vapors could migrate through soil and accumulate in confined spaces (for example, in utility manholes, basements of adjacent buildings, or the enclosed portions of stations). This risk is unlikely given that any remaining contaminated soil is expected to be either removed or contained.
Ingestion Exposure	<ul style="list-style-type: none"> ▪ Direct Ingestion of Soil or Water: This is most relevant to workers at the site. Construction workers are trained to avoid this, but it is a risk addressed via the Health and Safety Plan. ▪ Indirect Ingestion for Public: Nearby residents typically wouldn't intentionally ingest soil from the site, but dust that settles from the air onto surfaces could later be ingested. ▪ Drinking Water Pathway: The project area is served by municipal water, so residents are not drinking local groundwater. Thus, construction disturbing groundwater is unlikely to directly cause ingestion by the public. However, if contaminated groundwater or runoff were to reach a surface water body used for recreation or fishing, there could be exposure. ▪ Construction Equipment and Materials: There could be exposure due to contaminated materials being improperly handled – for instance, if trucks hauling contaminated soil are not covered, soil could spill on roads where people might later have contact. 	<ul style="list-style-type: none"> ▪ Ingestion of Residual Contamination: Neither the public nor the environment should have pathways to ingest residual contamination because any remaining contaminated soil is expected to be either removed or capped by pavement/structures. ▪ Wildlife Ingestion: Ecological receptors might experience negligible long-term ingestion exposure if any contaminants leach into soil or water that plants and animals interact with.

Exposure Pathway	Risks During Construction	Risks After Construction
Dermal Contact Exposure	<ul style="list-style-type: none"> ▪ Workers: Construction personnel may directly touch contaminated soil, groundwater, or debris. Workers also risk dermal exposure when handling demolition debris that has hazardous components. ▪ Public: It's less likely that members of the public will have direct skin contact with contaminants during construction, because the work areas will be restricted. However, it's possible in scenarios like: a dust cloud from the site settles on a person's skin or clothes while they are walking by, or a child trespasses into an unsecured construction area and comes into contact with contaminated mud. ▪ Environmental Dermal Contact: During active construction, wildlife is expected to avoid the area due to noise and activity, but if any do enter (e.g. birds picking at soil piles), they could be exposed. The project will manage soil stockpiles (covering them) to reduce such contact. 	<ul style="list-style-type: none"> ▪ After construction, dermal contact risk should be eliminated or greatly reduced due to the removal or isolation of contaminants.

4.15.3 Proposed Mitigation Strategies

Five sites with hazardous or contaminated materials are anticipated to be impacted by the construction of the Project. The proposed mitigation strategies for the Project include requiring the Contractor to properly remove, contain, and transport the materials in accordance with the applicable regulations defined in 40 CFR 260-282, 300-355, and 6 NYCRR Part 370 Series. In addition, the contractor would be required to clean its vehicles to prevent off-site contamination.

4.15.3.1 Temporary Construction Mitigation Strategies

Sites with hazardous and contaminated materials impacted during construction of either Build Alternative would typically result from the removal and transportation of materials from the site or the discovery of previously unidentified hazardous and contaminated materials during construction. To mitigate anticipated Project impacts, final construction plans and contractor requirements will be consistent with federal, state, and local laws. These temporary construction impacts, and proposed Project mitigation measures are summarized in Table 4.15-5.

Materials necessary for construction that would be transported to the site would typically consist of native or manufactured materials. Manufactured materials would typically include concrete, metal components, reinforcing steel, fencing, or similar elements that would not contain hazardous or contaminated materials. Native materials incorporated into the construction would typically consist of borrow material or select material for use in embankments and mechanically stabilized retaining-wall type applications. As a precautionary measure, the contractor would be required to submit the sources and the appropriate testing for approval, in accordance with 6 NYCRR Part 360 series, which would prevent hazardous or contaminated materials from being incorporated into construction operations.

Table 4.15-5. Construction Mitigation Measures for each Build Alternative

Construction Impact	LRT Build Alternative Mitigation	BRT Build Alternative Mitigation
Construction activities that result in transport, removal and remediation, accidental spills, and discovery of previously unidentified hazardous or contaminated materials.	<ul style="list-style-type: none"> Require the development of a detailed Phase II ESA¹ and Soil Management Plan² before and associated with property acquisition. Direct Contractor to develop a Field Organic Vapor Monitoring Plan³. Direct Contractor to develop a Project Health and Safety Plan. Direct Contractor to submit native construction materials for the appropriate testing in accordance with 6 NYCRR Part 360 series. Direct Contractor to suppress dust generation in all work zones, especially when excavating contaminated soil. Direct Contractor to ensure workers in excavation pits or handling hazardous materials will wear appropriate respiratory protection and Personal Protective Equipment. For the removal and remediation of contaminated sites, the Contractor will be required to properly remove, contain, and transport the materials in accordance with the applicable regulations defined in 40 CFR 260-282, 300-355, and 6 NYCRR Part 370 Series. In addition, the contractor would be required to clean its vehicles to prevent off-site contamination. Require the Contractor to manage discharge of hazardous or contaminated materials or accidental spills during construction according to 40 CFR Part 61, sub-part M and Part 763, 29 CFR 1910.1001, and 12 NYCRR Part 56 and 6 NYCRR Parts 610-614 regulations. During final design and before start of construction activities an Unanticipated Contamination Discoveries Plan will be developed. 	<ul style="list-style-type: none"> Require the development of a detailed Phase II ESA⁴ and Soil Management Plan⁵ before and associated with property acquisition. Direct Contractor to develop a Field Organic Vapor Monitoring Plan⁶. Direct Contractor to develop a Project Health and Safety Plan. Direct Contractor to submit native construction materials for the appropriate testing in accordance with 6 NYCRR Part 360 series. Direct Contractor to suppress dust generation in all work zones, especially when excavating contaminated soil. Direct Contractor to ensure workers in excavation pits or handling hazardous materials will wear appropriate respiratory protection and Personal Protective Equipment. For the removal and remediation of contaminated sites, the Contractor will be required to properly remove, contain, and transport the materials in accordance with the applicable regulations defined in 40 CFR 260-282, 300-355, and 6 NYCRR Part 370 Series. In addition, the contractor would be required to clean its vehicles to prevent off-site contamination. Require the Contractor to manage discharge of hazardous or contaminated materials or accidental spills during construction according to 40 CFR Part 61, sub-part M and Part 763, 29 CFR 1910.1001, and 12 NYCRR Part 56 and 6 NYCRR Parts 610-614 regulations. During final design and before start of construction activities an Unanticipated Contamination Discoveries Plan will be developed.

¹ Detailed Site Investigation (a.k.a., Phase II ESA) - A Phase II Environmental Site Assessment is the second stage of a phased contaminated land assessment.

² Soil Management Plan — A soil management plan addresses excavation, handling, and disposal of contaminated soil. This is also known as a Contaminated Material Handling Plan and can be found under Section 205 - Contaminated Soil in NYSDOT's Standard Specifications

³ Field Organic Vapor Monitoring Plan specifications can be found under Section 205 - Contaminated Soil in NYSDOT's Standard Specifications.

⁴ Detailed Site Investigation (a.k.a., Phase II ESA) - A Phase II Environmental Site Assessment is the second stage of a phased contaminated land assessment.

⁵ Soil Management Plan — A soil management plan addresses excavation, handling, and disposal of contaminated soil. This is also known as a Contaminated Material Handling Plan and can be found under Section 205 - Contaminated Soil in NYSDOT's Standard Specifications

⁶ Field Organic Vapor Monitoring Plan specifications can be found under Section 205 - Contaminated Soil in NYSDOT's Standard Specifications.