

# Hazardous Materials Final Technical Report

## WOODWARD AVENUE LIGHT RAIL TRANSIT PROJECT

Detroit, Michigan

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U.S. Department  
of Transportation  
**Federal Transit  
Administration**



City of Detroit  
Department of Transportation

**WOODWARD LIGHT RAIL**

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# 1.0 Introduction

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This Hazardous Materials Technical Report has been prepared in support of the Woodward Avenue Light Rail Transit Project Final Environmental Impact Statement (FEIS). This report documents the evaluation of potential contaminant sources that may be present within the study area. It discusses the assessment of the potential for encountering hazardous waste and impacted soil and/or groundwater during project construction activities, as well as the project's potential use of hazardous materials and its potential impact to the environment.

To evaluate potential contaminant sources, Phase I Environmental site Assessment (ESA) activities were conducted along The Project alignment, on three candidate vehicle storage and maintenance facilities (VSMF's), nine candidate traction power substations (TPSS) sites and at the Gateway Center building site near the proposed Rosa Parks Station. The objective of a Phase I ESA is to identify, to the extent feasible, Recognized Environmental Conditions (RECs), i.e. contamination or potential contamination on a site.

Full Phase I ESAs were conducted on all candidate VSMF and TPSS sites and the Gateway Center building site, as the sites selected for the project would be acquired. A modified Phase I ESA was conducted along The Project alignment, for which no property acquisition is planned. A full Phase I ESA includes all of the elements outlined in American Society for Testing and Materials (ASTM) Method E1527-05 Standard Practice for Environmental site Assessments. A modified Phase I ESA is one that includes some, but not all, elements of a full Phase I ESA.

The evaluations completed for the FEIS include the following, each of which is included as an appendix to this report:

- A modified Phase I ESA of the LPA Alignment; this level of assessment was adequate to identify RECs where no property acquisition is planned (Appendix A);
- Full Phase I ESAs of the Highland Park Ford Plant, Amsterdam Street, and MLK Boulevard VSMF sites (Appendices B through D) where property acquisition is planned; and
- Full Phase I ESAs of the nine proposed TPSS sites (Appendices E through M) where property acquisition is also planned.
- Full Phase I ESA of the Gateway Center building sites (Appendix N) where property acquisition is also planned.

## **2.0 DEIS Alternative Evaluated**

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Following FTA guidelines for conducting an Alternatives Analysis the Detroit Transit Options for Growth Study (DTOGS) was prepared by the Detroit Department of Transportation (DDOT) and its planning partners, including the City of Detroit, neighboring cities, the Southeast Michigan Council of Governments (SEMCOG), Wayne County, the State of Michigan, and regional and federal agencies. DTOGS identified a wide range of potential transit improvements in a study area encompassing the City of Detroit and the Cities of Dearborn, Hamtramck, and Highland Park. DTOGS used a systematic process to narrow the number of alternatives, ultimately resulting in the selection of the Locally Preferred Alternative (LPA): light rail transit (LRT) on Woodward Avenue between Downtown Detroit and the Michigan State Fairgrounds near 8 Mile Road. The Draft Environmental Impact Statement (DEIS) evaluated a No Build Alternative, as well design options for the LPA (build alternatives). Following the DEIS public comment period, a fourth build alternative was identified (A4) and selected as the Preferred Alternative.

### **2.1 No Build Alternative**

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The No Build Alternative includes transit, roadway, and non-motorized elements.

#### **2.1.1 Transit**

The No Build Alternative includes increased service frequencies on DDOT Route 53 (Woodward Avenue) and reorganization of feeder bus routes to optimize travel times. Route 53 would continue to use 40-foot buses, as are used for current services, and would operate on ten-minute headways all day. There would also be an express route with 30-minute headways but only in the peak direction and peak period. Schedules of some cross routes would be adjusted to coincide with Route 53 service to accommodate transfers. The No Build Alternative does not include any new bus routes. In addition, the No Build Alternative assumes bus services on existing roads in mixed traffic; it does not assume any change in future (2030) bus travel speeds or travel times on Routes 53. The No Build Alternative assumes DDOT's existing fare and transfer structure.

The Ann Arbor to Detroit Commuter Rail project, which is currently listed in SEMCOG's Transportation Improvement Program (TIP) for the Detroit-Warren-Livonia Metropolitan Statistical Area (MSA) for fiscal years 2008 through 2011, is also included in the No Build Alternative.

#### **2.1.2 Roadway**

The No Build Alternative includes all capacity-related transportation system projects listed in SEMCOG's Transportation Improvement Program (TIP) for the Detroit-Warren-Livonia Metropolitan Statistical Area (MSA) for fiscal years 2008 through 2011. In addition to the TIP projects, the No Build Alternative also includes capacity-related transportation projects listed in SEMCOG's financially constrained Regional Transportation Plan (RTP) for the corridor.

Figure 2-1. Project Location



### **2.1.3 Non-Motorized**

A shared-use path for pedestrians and bicycles is currently being constructed along Kirby Street on both sides of Woodward Avenue. There are also plans to construct a shared-use path along Canfield Street on both sides of Woodward Avenue within the next few years. There are no other plans to improve or construct any other non-motorized facilities within the study area.

## **2.2 Locally Preferred Alternative**

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The LPA considered for the DEIS is to construct LRT on Woodward Avenue from Downtown Detroit to 8 Mile Road (Figure 2-1), with two mainline design options (Figures 2-3 to 2-5) and three Downtown design options (Figure 2-2). The mainline design options along Woodward Avenue are a median-running operation separated from traffic (Option A) and a curb-running operation in mixed traffic (Option B).

The LPA is defined as an at-grade system entirely within existing rights-of-way. It would be fully functional as a stand-alone project, but would be designed to accommodate possible future extensions.

LRT uses electric rail vehicles and may operate with just one vehicle or two that are joined; if the latter, the LRT would not be expected to be longer than 180 feet. However, some City blocks in Downtown are shorter than 180 feet; therefore, LRT vehicles would be given priority at traffic signals to avoid blocking intersections and crosswalks by stopped LRT vehicles. LRT vehicles are powered via overhead electric wire (catenary); therefore, there are no safety issues as there would be with a live third rail at ground level.

Existing road rights-of-way vary considerably in the study corridor. Within Downtown, rights-of-way range from 78 feet along Washington Boulevard to 109 feet along Woodward Avenue south of Adams Street. North of Adams Street, the right-of-way widens along Woodward Avenue to 120 feet until reaching Grand Boulevard. The narrowest section of Woodward Avenue – at 100 feet – is north of Grand Boulevard to Manchester Parkway, where the right-of-way then returns to 120 feet. The widest section of right-of-way is north of McNichols Road where it widens to 204 feet.

### **2.2.1 Operating Options on Woodward Avenue**

The two operating options considered for Woodward Avenue are as follows:

#### **Operating Option A: Median-Running/Traffic Separated (Figure 2-3 and Figure 2-4)**

The LRT would operate in the center median of Woodward Avenue from north of Adams Street to the Michigan State Fairgrounds. Within this section, the LRT would be running separate from vehicular traffic. There may or may not be a physical barrier between the LRT and vehicular traffic. Stations with center platforms would be located in the median. There would be 12 stations north of Adams Street. This option includes one Downtown design option, Downtown Option 1 (described below), and was originally identified as part of the DTOGS project. Examples of existing median-running LRT operations include portions of Boston's Green Line and San Jose's Blue Line. The Central Corridor between Minneapolis and St. Paul will also be constructed in the median.

## **Operating Option B: Curb-Running (Figure 2-5)**

The LRT would operate in the right-most travel lane (the second lane from the curb in areas with parking) of Woodward Avenue from Adams Street to just north of Grand Boulevard. From north of Grand Boulevard to the Michigan State Fairgrounds, the LRT would operate in the median, as described above. Within the curb-running/mixed traffic section, the LRT would be running with vehicular traffic. There would be 15 stations. Option B includes two Downtown design options, Downtown Options 2 and 3 (described below), and were identified during more recent stakeholder meetings.

### **2.2.2 Downtown Design Options**

Three Downtown design options for the LPA are as described below (Figure 2-2)

#### **Downtown Option 1: Woodward, Grand River, Washington, Larned, Randolph, Congress**

Option 1 would include median-running dual tracks south on Woodward Avenue to Grand River Avenue. On Grand River Avenue, the LRT would run westbound in the opposite direction of vehicular traffic in an exclusive right-of-way. It would then travel south in the median on Washington Boulevard to Larned Street, at which point it would transition to a single-track, curb-running, one-way loop east on Larned Street to Randolph Street, then west on Congress Street back to Washington Boulevard, and then east with vehicular traffic on Grand River Avenue back to Woodward Avenue. This option has four stations and would be implemented with Woodward Avenue Operating Option A.

#### **Downtown Option 2: Woodward, State, Washington, Larned, Randolph, Congress**

Option 2 would include curb-running single tracks south on Woodward Avenue to State Street, then south on the west side of Washington Boulevard to Larned Street. At that point it would transition to a single-track, curb-running, one-way loop east on Larned Street to Randolph Street, then west on Congress Street back to the east side of Washington Boulevard, and then east in the opposite direction of vehicular traffic on State Street in an exclusive right-of-way, back to northbound Woodward Avenue. This option has seven stations and would be implemented with Woodward Avenue Operating Option B.

#### **Downtown Option 3: Woodward Avenue**

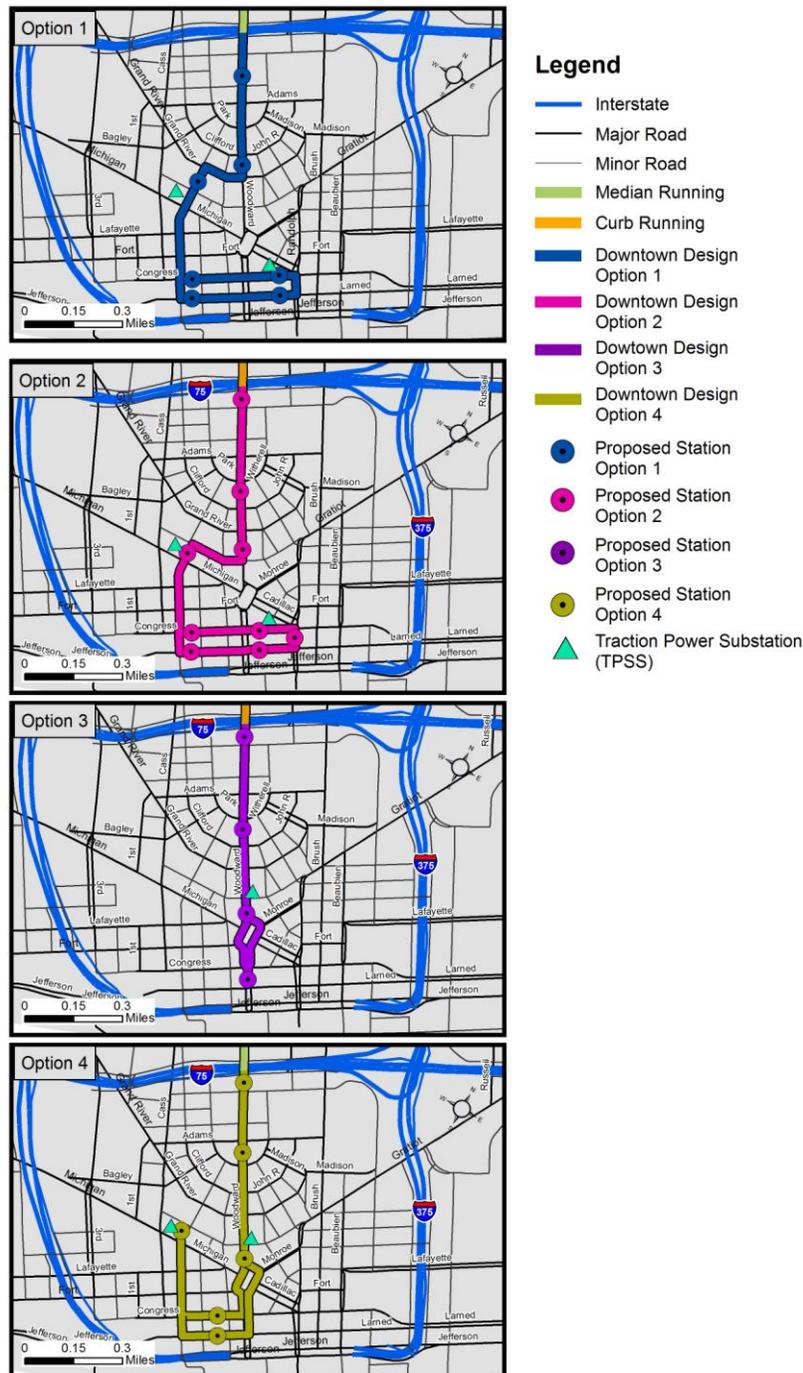
Option 3 would include curb-running single tracks south on Woodward Avenue to Campus Martius, counter-clockwise travel around Campus Martius in the direction of vehicular traffic, and then continuing south on Woodward Avenue to a stop on Woodward Avenue between Congress and Larned streets. It would then reverse direction to travel north on Woodward Avenue, counter-clockwise around Campus Martius with vehicular traffic and then continue north. This option has four stations and would be implemented with Woodward Avenue Operating Option B.

#### **Downtown Option 4: Woodward, Park, Campus Martius, Congress, Washington, Larned**

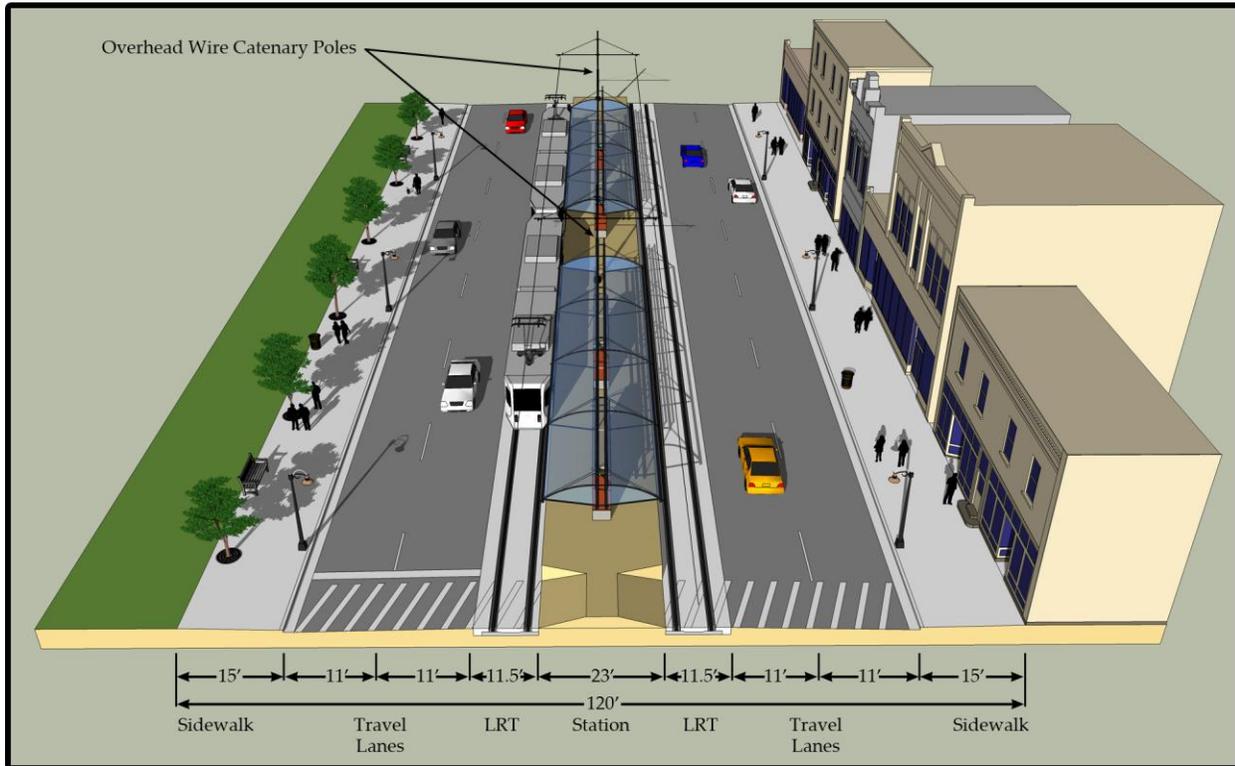
Median-running dual tracks south on Woodward Avenue to Park Avenue/Witherell Street. Then the LRT would transition to curb-running single tracks continuing on Woodward Avenue to Campus Martius, counter-clockwise travel around Campus Martius with vehicular traffic, and then continuing south on Woodward Avenue with the southbound track turning west onto the south side of Congress Street. The alignment would then turn north on Washington Boulevard in the median with double tracks until the final stop at the Rosa Parks Transit Center at the northwest corner of Washington Boulevard and Michigan Avenue. The train would then reverse

along the median-running tracks along Washington Boulevard, turning left (east) onto the south side of Larned Street, and again onto northbound Woodward Avenue, counter-clockwise around Campus Martius. It would then transition to median-running north of Park Avenue/Witherell Street. This option has five stations (Table 2-2) and would be implemented with Woodward Avenue Operating Option A.

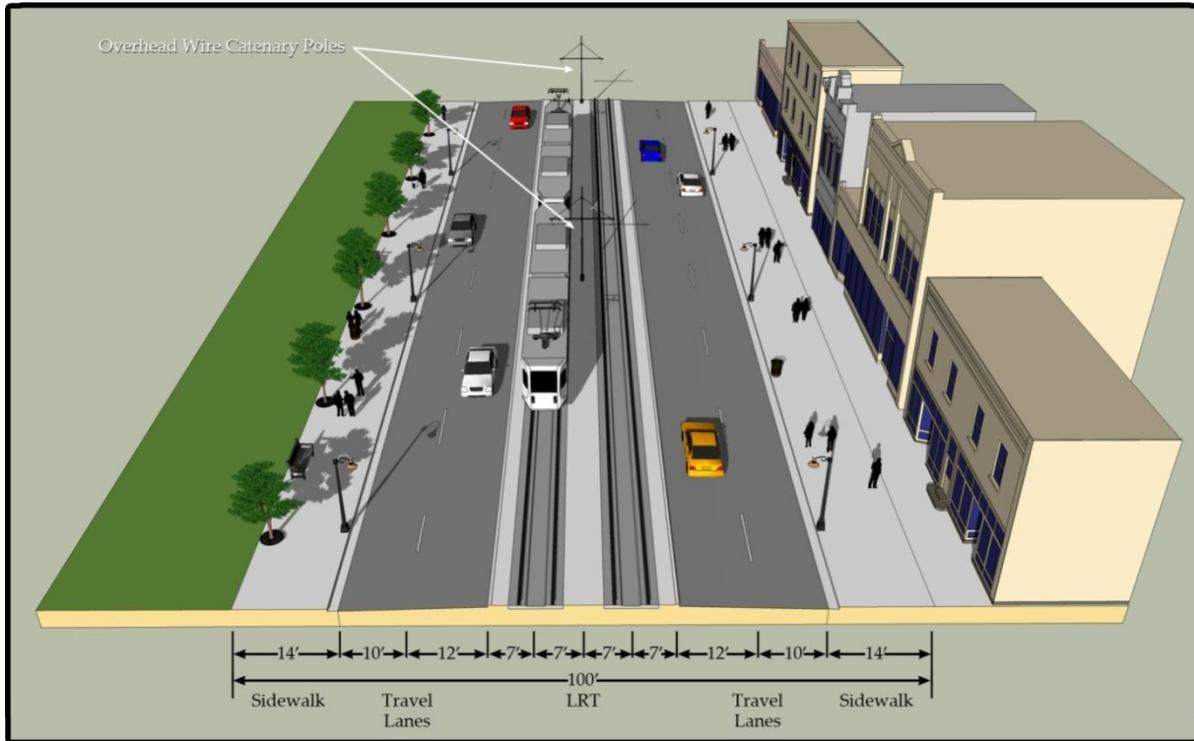
**Figure 2-2. Downtown Design Options**



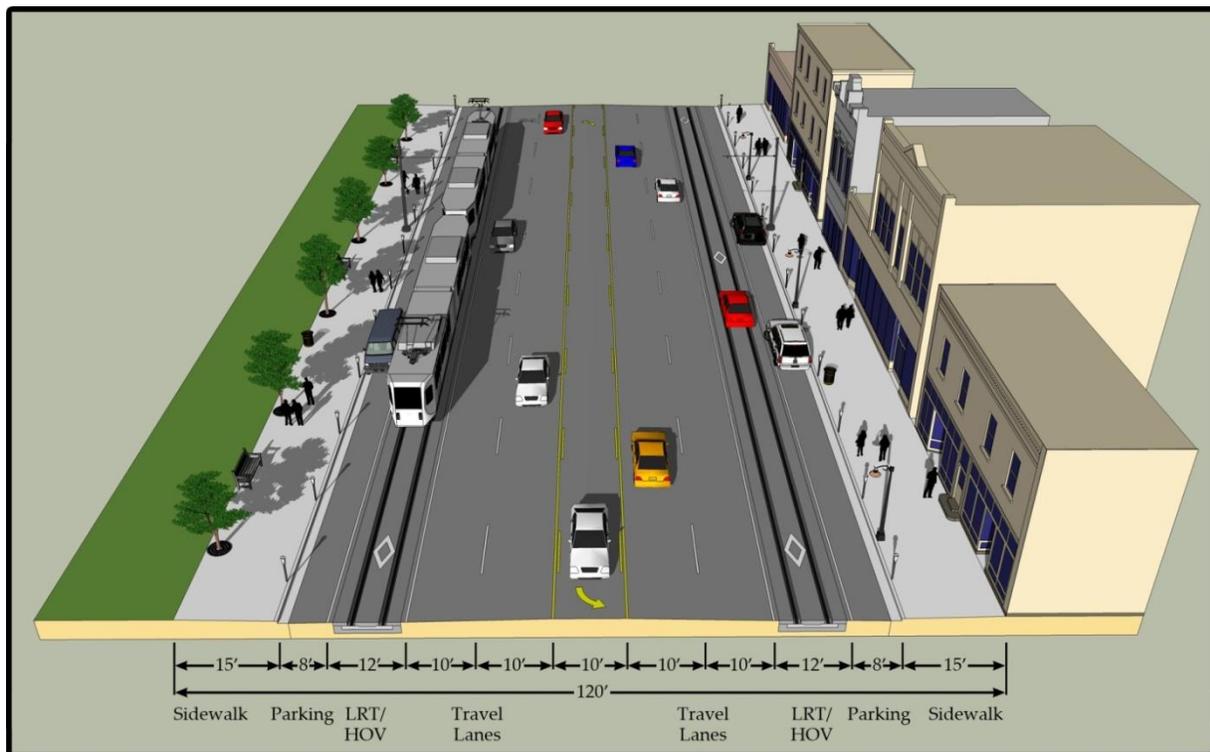
**Figure 2-3. Cross-Section of Operating Option A: Median-Running/Traffic Separated in 120-foot Right of Way**



**Figure 2-4. Cross-Section of Operating Option A: Median Running/Traffic Separated in 100-foot Right of Way**



**Figure 2-5. Cross-Section of Operating Option B: Curb-Running/Mixed Traffic in 120-foot Right of Way**



### 2.2.3 LPA Variations

Combining the operating and Downtown design options, four variations of the LPA were evaluated in the FEIS.

- Alternative A1 – median-running (Figure 2-3 and Figure 2-4) with Downtown design option 1; 15 stations;
- Alternative B2 – curb-running (Figure 2-5) with Downtown design option 2; 21 stations; and
- Alternative B3 – curb-running (Figure 2-5) with Downtown design option 3; 18 stations.
- Alternative A4 – combination of median- and curb-running (Figure 2-6) with Downtown design option 4; 19 stations.

### 2.2.4 Stations

In general, LRT stations are designed to include several components that are essential for traveler safety and security, as well as amenities for passenger comfort and convenience. LRT station design also reflects compliance with Americans with Disabilities Act (ADA) requirements. Primary elements of LRT stations include the platform(s), shelter, wheelchair ramps, and station amenities such as lighting, benches, security systems, and information displays. Platforms for the proposed Project alternatives will be compatible with low-floor LRT vehicles, typically requiring a 14-inch station platform height. The platform length would likely

range from 190 to 200 feet based on the LRT vehicle length of two linked vehicles and space available for each LRT station at the proposed locations. Platform length would also depend on whether the alignment is median- or curb-running.

**Table 2-1. LRT Station Locations**

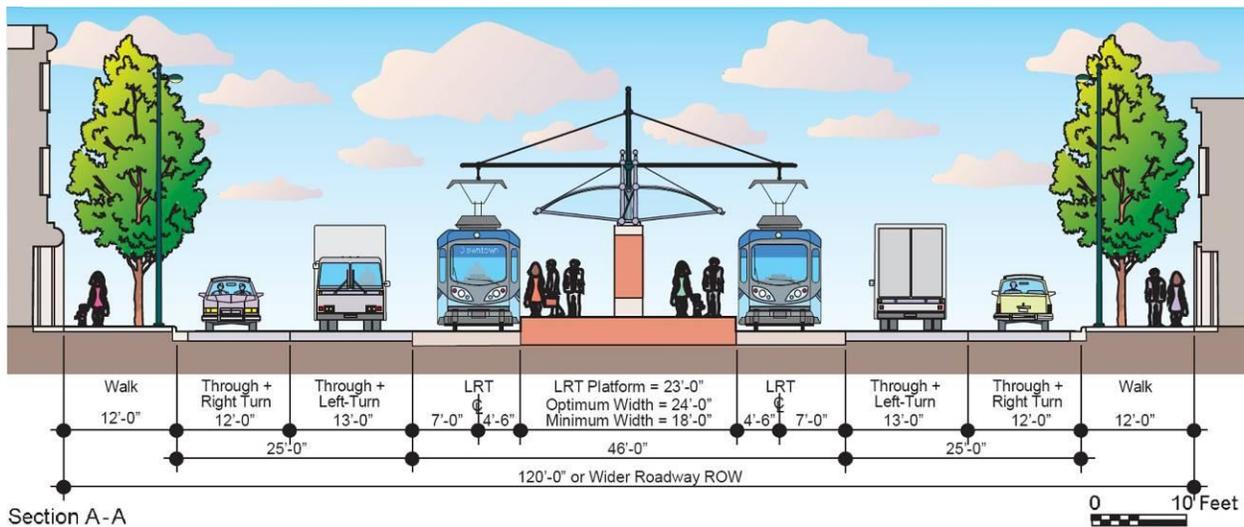
Station	Alternative			
	A1	B2	B3	A4
Rosa Parks Transit Center (Washington Boulevard)	X	X		
Rosa Parks Transit Center (W of Washington , N of Michigan)				X
Cobo Center: Larned at Washington Boulevard & Congress at Washington	X	X		
Cobo Center: Larned at Shelby Street & Congress at Shelby Street				X
Woodward: Larned at Woodward & Congress at Woodward		X	X	
Randolph St.: Larned at Randolph & Congress at Randolph	X			
Michigan Avenue			X	X
Randolph Street		X		
State/Gratiot		X		
Grand River	X			
Adams/Grand Circus Park		X	X	X
Foxtown/Stadium	X	X	X	X
Temple Street		X	X	X
MLK Jr. Blvd./Mack Avenue	X	X	X	X
Canfield Street		X	X	X
Warren Avenue	X	X	X	X
Ferry Street		X	X	X
Piquette Street/Amtrak Station	X	X	X	X
Grand Boulevard	X	X	X	X
Hazelwood Street/Holbrook Street	X	X	X	X
Calvert Street	X	X	X	X
Glendale Street	X	X	X	X
Manchester Street	X	X	X	X
McNichols Road	X	X	X	X
7 Mile Road	X	X	X	X
Michigan State Fairgrounds	X	X	X	X
<b>Total Stations</b>	<b>16</b>	<b>21</b>	<b>18</b>	<b>19</b>

Platform width would typically range from 15 to 24 feet for double-sided median platforms for Alternatives A1 and A4 (the Preferred Alternative), and 10.5 to 12 feet for single-sided platforms for all Build Alternatives. A minimum LRT station width of 15 feet was used for Alternative A1 for double-sided platforms. For single-sided platforms, a minimum width of 10.5 feet was used. For Alternatives B2 and B3, all stations are single-sided; therefore, a minimum station width of 10.5 feet was used. Stations operating under Alternatives B2 and B3 would bump out approximately eight feet from the existing edge of sidewalks. The parking lane would be removed on one side of the street to accommodate the LRT station platform. The platforms would be 10.5 feet wide, requiring the removal of 4.5 feet of sidewalk width on each side of the

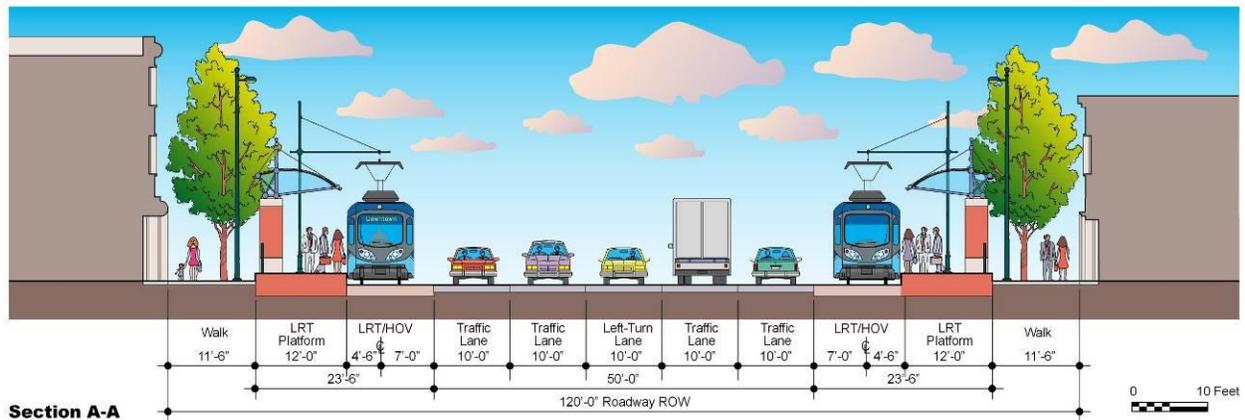
street, leaving 10.5 feet of existing sidewalk width on one side and 15 feet of sidewalk width on the other side of the street. In locations along the LRT alignment where stations would be located on both sides of the street, sidewalks would be approximately 10.5 feet wide.

Shelter designs would include a conventional canopy (Figure 2-10 and Figure 2-11). The DEIS described a 10-foot roof-mounted square billboard extending above the canopy for curb-running stations. However, the City has decided against billboards: no billboards, no rooftop mounted structures, nor vertical elements (as described in the DEIS) will be included as part of the station canopy designs for the Project. Canopy design guidelines will be further developed during the Project’s design phase.

**Figure 2-6. Operating Option A Cross Section at Station**



**Figure 2-7. Operating Option B Cross Section at Station**



## 2.2.5 Facilities

This section describes the type and location of all ancillary facilities needed to support the maintenance and operations for the Project Alternatives (Table 2-3).

### Vehicle Storage and Maintenance Facility

The proposed Vehicle Storage and Maintenance Facility (VSMF) would house the administrative offices and provide for indoor storage, inspection, and repair and light maintenance of LRT

equipment. The square footage of the facility is anticipated to be between 75,000 SF and 110,000 SF, depending on site size, configuration and facility design. For the DEIS, there were three sites considered for the VSMF (Figure 2-12), which were identified on the basis of proximity to Woodward Avenue, size and configuration, zoning, land use, site ownership, and potential utilities and traffic impacts. The three potential sites were as follows:

- **MLK Boulevard Site (4.2 acres)** – would occupy two lots north and south of West Stimson Street, just west of Woodward Avenue and south of MLK/Mack Avenue. This site would have frontage on Woodward Avenue.
- **Amsterdam Street Site (4.6 acres)** – would occupy two lots east and west of Cass Avenue between Amsterdam Street and the two grade-separated tracks owned by Consolidated Rail Corporation (CR) and Canadian National Railway (CN), respectively, just south of Baltimore Avenue. This site would have frontage on Woodward Avenue and is adjacent to the Amtrak station.
- **Highland Park Ford Plant Site (19.0 acres)** – would occupy one large lot east of Woodward Avenue north of Manchester Street and the former Highland Park Ford Plant. As this site is about 900 feet east of Woodward Avenue, direct access would be via the right-of-way for CR’s currently abandoned rail line.

Of the three potential VSMF sites considered in the DEIS, the MLK Boulevard site would be nearest to residential use. The proposed VSMF at this site for Phase I has been eliminated from consideration at this time due to potentially significant adverse effects to the human and natural environment for both environmental justice (EJ) and Section 106 reasons. Therefore, this VSMF site has been removed from further evaluation in this FEIS.

If the City pursues a phased approach to Project implementation, a temporary VSMF would be constructed at the Amsterdam Street site. Once the full Project was completed, the Highland Park Ford Plant would become the permanent site for the VSMF and the temporary VSMF at the Amsterdam Street site will cease operations. The changes to each of the two potential VSMF sites are described in more detail below.

#### **Amsterdam Street Site**

Since the publication of the DEIS, a preliminary concept plan was developed for the proposed Amsterdam Street VSMF site. The VSMF itself would be located on the parcel east of Cass Avenue, which is approximately three acres in size. The small size and shape of the site are not sufficient to accommodate the requirements for a permanent VSMF facility. Therefore, it is proposed that a temporary VSMF be built on this site until a larger facility could be constructed during Phase II of the Project.

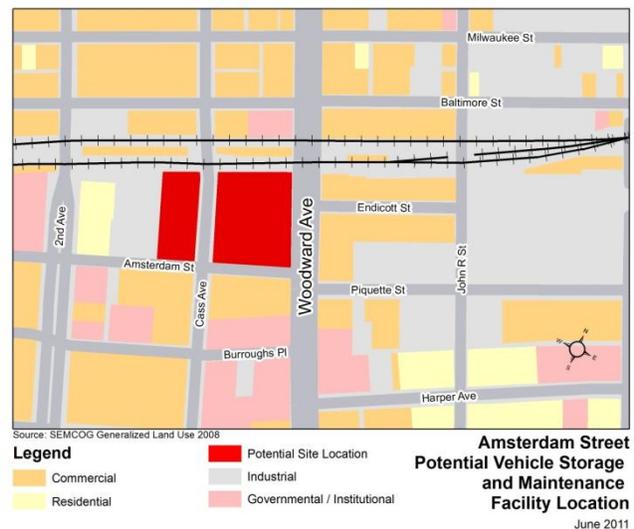
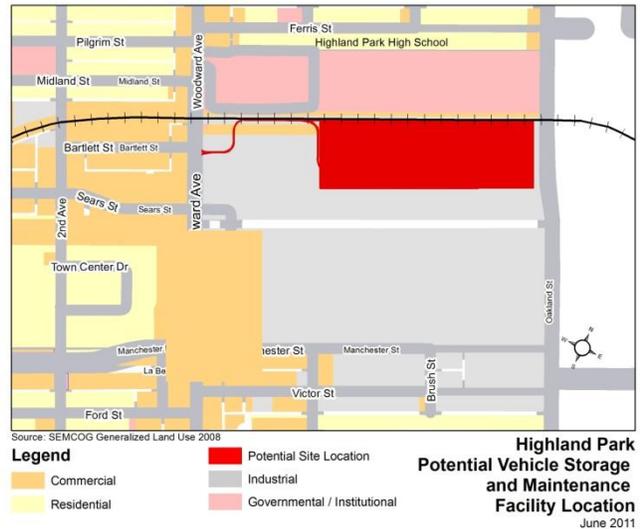
An administrative building and parking for the VSMF would be located on the 1.6-acre parcel to the west of Cass Avenue, which is currently occupied by a parking lot. Operations at the Amsterdam Street site would be relatively small since it will only serve Phase I of the Project.

#### **Highland Park Ford Plant Site**

The Highland Park Ford Plant is under consideration as a location for the permanent VSMF in Phase II. The VSMF would occupy one large lot east of Woodward Avenue north of Manchester Street and adjacent to the northern boundary of the former Highland Park Ford Plant, a National Historic Landmark (NHL; Appendix F). The large vacant lot is currently used for storage. As this site is about 900 feet east of Woodward Avenue, direct access would be via the right-of-way for CR's currently abandoned rail line. The exact location under study for the maintenance facility at the Highland Park Ford Plant site does not incorporate either the original

administration building or factory. These structures comprise a NHL and, therefore, any retrofitting of the buildings may result in an adverse effect determination under Section 106 of the National Historic Preservation Act (36 CFR Part 800), because it is both a historic resource and a NHL. This regulation, specifically 36 CFR Part 800.10, provides for special protections of NHLs and requires the Federal agency "to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to any National Historic Landmark that may be directly or adversely affected by an undertaking." Additionally, retrofitting the building may also constitute a use under Section 4(f) from the 1966 U.S. Department of Transportation Act. Section 4(f) stipulates that U.S. Department of Transportation agencies, including FTA, cannot approve the use of land from publicly-owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historic sites unless there is no feasible and prudent alternative to the use of land and the action includes all possible planning to minimize harm to the property resulting from the use.

**Figure 2-8. Vehicle Storage and Maintenance Facility Site Options**



**Table 2-2 Ancillary Facilities**

<b>Facility Type and Location</b>	<b>Alternative A1</b>	<b>Alternative B2</b>	<b>Alternative B3</b>	<b>Alternative A4 (Preferred Alternative)</b>
<b>Vehicle Storage and Maintenance Facility (VSMF)</b>				
Amsterdam Street site	X	X	X	X
Highland Park Ford Plant site	X	X	X	X
<b>Park and Ride Lot</b>				
Southeast corner of 8 Mile Road and Woodward Avenue (Shoppes at Detroit's Gateway Park)	X	X	X	X
<b>Traction Power Substation (TPSS)</b>				
#1 - 1119 Washington Boulevard	X	X		X
#2 - 100 and 114 Cadillac Square	X	X		
#3 - 1208 Woodward Avenue			X	X
#4 - 3439 Woodward Avenue	X	X	X	X
#5 - 6161 Woodward Avenue	X	X	X	X
#6 - 20 Westminister Street	X	X	X	X
#7 - 12921, 12937, 12941, and 12961 Woodward Avenue (Highland Park)	X	X	X	X
#8 - 17400 Woodward Avenue	X	X	X	X
#9 - 19816 Woodward Avenue	X	X	X	X
<b>Construction Staging Areas</b>				
#1 - West side of Woodward Avenue, between Henry Street and Sproat Street	X	X	X	X
#2 - West side of Woodward Avenue, between Sibley Street and Sproat Street	X	X	X	X
#3 - Northeast corner of East Bethune Street and Woodward Avenue	X	X	X	X
#4 - Southwest corner of Sears Street and Woodward Avenue (Highland Park)	X	X	X	X

Source: Adapted from *FEIS Transportation Technical Report: Woodward Avenue Light Rail Transit Project*, March 2011, DDOT

***Park and Ride Lot***

A park and ride lot, which would be provided at the same location for all Project alternatives, would be located near the proposed Shoppes at Gateway at the southeast corner of 8 Mile Road and Woodward Avenue. The lot is accessible from northbound and southbound Woodward Avenue. A pedestrian overpass would provide access from the parking lot to the median-located rail station. An existing bus stop and transfer station at the Michigan State Fairgrounds would be maintained.

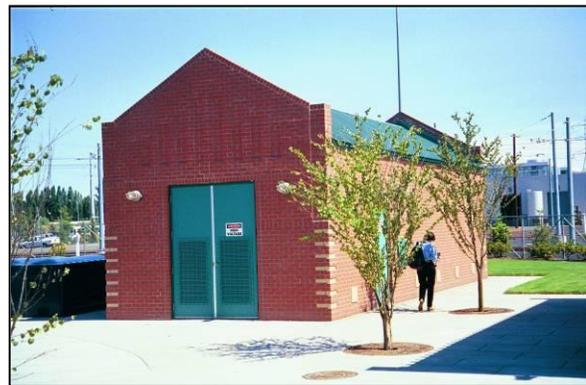
### *Traction Power Substations*

LRT's electric traction power system requires a Traction Power Substation (TPSS) be placed approximately every mile, depending on the frequency and size of the vehicles. These substations, which are approximately 25 feet by 60 feet in dimension, require vehicular access and a relatively small site (35 feet by 70 feet). These facilities do not need to be immediately adjacent to the tracks. Because of this flexibility, substations can be located to minimize visual intrusions and can be visually shielded by fencing, landscaping, or walls, or can be incorporated into existing buildings. Figure 2-13 shows an example of a typical substation, for illustrative purposes only. Nine TPSS sites have been preliminarily identified: eight TPSS for Alternatives A1 and B2; seven for Alternative B3; and eight for Alternative A4 (the Preferred Alternative). The locations will be refined during the design phase of project development.

### *Construction Staging Areas*

During construction of the LRT, several small sites will be required for the temporary storage of materials and equipment and will be located in the general vicinity of the Project. Following construction of the Project, the construction staging areas would be made available for other, more permanent development. Four construction staging areas have been initially identified (Figure 2-3). Two sites, located north of I-75 and west of Woodward Avenue, are approximately 0.9 acre and 1.6 acres in size, respectively. A third site, 1.6 acres in size, is proposed for the northeast corner of East Bethune Street and Woodward Avenue. A fourth site, 0.9 acre in size, is proposed in Highland Park at the southwest corner of Sears Street and Woodward Avenue. Each of these four parcels is presently undeveloped and vacant.

**Figure 2-9. TPSS Example**



## **2.3 Preferred Alternative**

Project Alternative A4 has been selected as the Preferred Alternative (Figure 2-6). Project Alternative A4 consists of Operating Option A and Downtown Design Option 4. The Preferred Alternative is LRT on Woodward Avenue from Downtown Detroit to the Michigan State Fairgrounds near 8 Mile Road and is a hybrid alternative that was selected based on public comments received after the publication of the DEIS. Since the Preferred Alternative (A4) is a hybrid of A1, B2, and B3, the impacts for the Preferred Alternative were previously evaluated in the DEIS and the DEIS technical reports for the other Project Alternatives (A1, B2, and B3).

The LRT would operate in the center median of Woodward Avenue from north of I-75 to the Michigan State Fairgrounds. Within this section, the LRT would be running separated from vehicular traffic. There may or may not be a physical barrier between the LRT and vehicular traffic. Stations with center platforms would be located in the median. There would be 14 stations north of I-75.

South of I-75, the LRT would operate on median-running dual tracks south on Woodward Avenue to Park Avenue/Witherell Street. It would then transition to curb-running single tracks

continuing on Woodward Avenue to Campus Martius; operate counter-clockwise around Campus Martius with vehicular traffic; and then continue south on Woodward Avenue with the southbound track turning west onto the south side of Congress Street. The alignment would then turn north on Washington Boulevard with median-running dual tracks until the final stop at the Rosa Parks Transit Center at the northwest corner of Washington Boulevard and Michigan Avenue. The LRT would then reverse direction along the median-running tracks on Washington Boulevard, turning left (east) to the south side of Larned Street; turn left (north) onto northbound Woodward Avenue and counter-clockwise around Campus Martius, after which it would transition to the median-running dual tracks north of Park Avenue/Witherell Street. Five stations would be sited in the Downtown portion of the LRT alignment.

The Preferred Alternative would have 19 LRT stations sited along the alignment. The LRT stations are identified in Table 2-3. The LRT stations would be designed to include a number of components essential for safety and security, as well as amenities for passenger comfort and convenience and ADA compliance. Design guidelines for LRT stations would be developed during the Project's design phase. If the Preferred Alternative is implemented in phases, two VSMF sites would be constructed under the Preferred Alternative: one temporary VSMF site at Amsterdam Street under Phase I, and one permanent site at the Highland Park Ford Plant under Phase II. The entrance to the VSMF would need to be signalized, but LRT vehicles would only access the facility during off-peak hours. This signal is not expected to have an impact on the morning or evening peak-hour traffic operations. A park and ride lot would be provided at the southeast corner of 8 Mile Road and Woodward Avenue at the Shoppes at Detroit's Gateway Park. The lot would be accessible from northbound and southbound Woodward Avenue and would be expected to have 400 parking spaces. A pedestrian overpass would provide access from the parking lot to the proposed median-located LRT station. Eight TPSS sites have been preliminarily identified for the Preferred Alternative; the locations of these sites will be refined during the design phase of project development. During construction of the LRT, four construction staging areas would be needed. Table 2-3 identifies the locations of these sites.

If the Preferred Alternative is constructed in two phases, Phase I would involve construction of LRT tracks, nine LRT stations, and four TPSS sites between Downtown and Grand Boulevard. A temporary VSMF would be constructed at the Amsterdam Avenue site to service the Phase I LRT system until Phase II is built. Phase II would involve construction of the northern segment of the Woodward Avenue LRT Project from Grand Boulevard to the Michigan State Fairgrounds, comprising LRT tracks, seven LRT stations, four TPSS sites, and the permanent VSMF at the Highland Park Ford Plant site. Following completion of the permanent VSMF construction, the temporary facility at Amsterdam Avenue would be demolished.

## 3.0 Legal and Regulatory Context

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Many Federal and State laws regulate hazardous waste and materials. The primary federal laws regulating hazardous waste and materials are the Resource Conservation and Recovery Act of 1976 (RCRA) (USC 1976) and the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) (USC 1980). The National Priority List (NPL) is a listing of the most polluted sites in the nation that are eligible for cleanup funding (Superfund) under CERCLA. The United States Environmental Protection Agency (USEPA) is the primary agency responsible for administering RCRA and CERCLA.

The Michigan Department of Environmental Quality (MDEQ) regulates contamination (hazardous and non-hazardous) through a variety of programs primarily under Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA). Various promulgated Administrative Rules and Operational Memoranda provide additional guidance for this regulation. Most of the identified contaminated sites near the project alignment are, or would be, generally regulated under Part 213 Leaking Underground Storage Tank Regulations or Part 201 Environmental Remediation within NREPA; Part 115 of NREPA regulates Solid Waste. The MDEQ's Remediation Division (RD) administers the Part 201 and Part 213 programs, while the Environmental Resource Management Division (ERMD) oversees the Solid Waste Management program under Part 115 of NREPA.

A Phase I ESA or "all appropriate inquiries" (AAI) assessment must be conducted on all properties the City of Detroit plans to acquire for the project to help establish either CERCLA's innocent landowner defense [42 U.S.C. §9607(b)(3)], the bona fide prospective purchaser defense [42 U.S.C. §9607(r)], or the contiguous property owner defense [42 U.S.C. §9607(q)]. These three CERCLA defenses are collectively referred to as the Landowner Liability Protections (LLPs). According to the rules promulgated by the U.S. EPA pursuant to CERCLA (at 40 CFR Part 312), the primary objectives of an ESA are to identify the following types of information about the site prior to acquiring the property: (1) current and past property uses and occupancies, (2) current and past uses of hazardous substances, (3) waste management and disposal activities that could have caused releases or threatened releases of hazardous substances, (4) current and past corrective actions and response activities undertaken to address past and ongoing releases of hazardous substances, (5) engineering controls, (6) institutional controls, and (7) properties adjoining or located near the site that have environmental conditions indicative of releases or threatened releases of hazardous substances on, at, in, or to the site. By conducting the ESAs, this information was gathered to evaluate the site for evidence of conditions indicative of a release. The ESAs have been conducted to meet ASTM Method E1527-05 standard practice, which satisfies the U.S. EPA's requirements for all appropriate inquiry. Practice E1527 has been developed to define "all appropriate inquiry" for purposes of establishing any of the three LLPs available under CERCLA as amended by the Brownfields Amendments.

## 4.0 Methodology

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The objective of the Phase I Environmental site Assessment is to identify, to the extent feasible pursuant to the processes within ASTM, recognized environmental conditions (REC) in connection with the property. According to ASTM, a REC is *“the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include de minimis conditions that generally do not present a material risk of harm to public 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.”*

A Phase I ESA has four components: 1) records review, 2) site reconnaissance, 3) interviews, and 4) report preparation.

### 4.1 LPA Alignment ESA

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ASTM states that one may “...need to modify the scope of services performed under this practice for special circumstances, including, but not limited to...large areas or corridors.” A modified Phase I ESA was conducted for the LPA Alignment in general accordance with ASTM Method E 1527-05 to identify RECs near (within 100 feet) the LPA Alternatives’ alignments and LRT stations. The modified ESA study area was sufficient to include all three of the LPA alternatives’ alignments.

The following activities were conducted: environmental records search; review of standard historical sources, including Sanborn fire insurance maps, historic topographic maps and aerial photographs and city directories; and site reconnaissance of the LPA Alternatives’ alignments and LRT stations to observe evidence of potential environmental concerns and/or RECs, such as stained surface soil, material storage practices, and general land use. Photographs were taken to document existing conditions.

The following activities were conducted as part of the modified Phase I ESA to establish existing conditions and to evaluate potential impacts and whether project-related activities have the potential to disturb, generate, and/or dispose of hazardous materials:

- Environmental Records Search: Environmental Data Resources, Inc. (EDR) of Milford, Connecticut conducted an environmental database search of federal and state environmental records relevant to hazardous materials and waste operations in close proximity to the Project alignment.
- Standard Historical Sources: Various historical sources including Sanborn fire insurance maps, historical topographic maps, historical aerial photographs, and city directories were also obtained and reviewed to help identify contaminated sites of concern.
- Site Reconnaissance: Reconnaissance teams walked both sides of proposed alignment starting south of 8-Mile Road into downtown Detroit. Observations were made regarding evidence of potential environmental concerns and/or RECs such as stained surface soil, material storage practices, and general land use in close proximity to the study corridor. Visual observations were also made of the adjoining properties. Photographs were taken

to document the conditions observed during the walkover. Observations were made only from the public right-of-way; no buildings were entered during the site reconnaissance.

- **Interviews:** Interviews were not conducted for the properties fronting the alignment corridor in the modified alignment Phase I ESA. Interviews were conducted for the full site specific Phase I ESAs conducted on the VSMF and TPSS sites, as discussed below.

The level of assessment in the modified Phase I ESA was adequate to identify RECs where no property acquisition is planned.

## **4.2 Site Specific ESAs**

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Full Phase I ESAs were conducted in accordance with ASTM E1527-05 for the Highland Park Ford Plant VSMF, Amsterdam Street VSMF, the nine TPSS sites (TPSS #1 through TPSS #9) and the Gateway Center building site. The four ASTM Phase I ESA components were fulfilled, including records reviews, site reconnaissance, interviews, and report preparation. In some cases, and despite good faith efforts, access for site reconnaissance and/or owner interviews was not provided. In these instances, per ASTM, a data gap was identified and its significance was noted. A data gap is a lack of or inability to obtain information required by the ASTM practice despite good faith efforts by the environmental professional to gather such information. A data gap by itself is not inherently significant. A data gap is only significant if other information and/or professional experience raises reasonable concerns involving the data gap. Although data gaps were identified in some of the Phase I ESAs, no significant data gaps were identified; it is unlikely that additional RECs would be identified if the missing information had been obtained.

As mentioned earlier, the MLK Boulevard VSMF Phase I ESA report was not updated to include a good-faith effort to conduct the site reconnaissance and owner interview components since it was eliminated from consideration as a potential VSMF candidate location, based on DEIS findings.

## 5.0 Existing Conditions

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### 5.1 LPA Alignment

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The modified Phase I ESA identified about 300 contaminated or potentially contaminated properties of concern (RECs) in close proximity along the length of the LPA alignment; no superfund sites were identified. The RECs and their approximate locations are identified in the Tables and Figures sections of the *Woodward LPA Alignment Modified Phase I ESA Report* in Appendix A of this report.

Table 1 of the *Woodward LPA Alignment Modified Phase I ESA Report* in Appendix A of this report identifies the suspected REC, its name, address, and any specific observations and/or comments. The figures within the report identify the approximate location of each REC listed in the table. RECs most commonly include former and current gasoline stations (known or suspected), dry cleaners, auto repair shops, industrial buildings, and other commercial properties.

Subsurface impacts to soils and groundwater may have resulted from the current and historical usage, material storage practices, spills, fill material, or leakage from storage tanks. Current and/or former gasoline stations and automotive repair facilities are examples of facilities that may have subsurface contamination as a result of Leaking Underground Storage Tanks (LUSTs) or general petroleum substance use. Current and/or former dry cleaning operations represent a risk of subsurface contamination as the result of the use of chemicals in the dry cleaning process (chlorinated solvents, particularly tetrachloroethylene). Many vacant or abandoned properties with unknown use also pose a risk since several of these properties contained small one-story buildings with open areas fronting a road, giving the appearance that they might have once been gasoline service stations and have therefore been identified as potential RECs in the Phase I ESA. Identification of the historical uses of these vacant or abandoned properties would require a site-specific Phase I ESA for each of these sites. Residential properties, churches, and office buildings do not pose a risk; typically, hazardous substances used at these types of properties include cleaning products that are kept in relatively small quantities and any spills or releases are normally minor. The primary concerns with residential properties, churches, or office buildings are former heating oil tanks.

While the extent of potential subsurface contamination from individual properties may not result in widespread contamination, there may be localized areas along the LPA alignment with significant levels of contamination.

### 5.2 VSMF sites

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#### 5.2.1 Highland Park Ford Plant site

The *Highland Park Ford Plant site VSMF Phase I ESA* is included in Appendix B of this report. Based on the review of available information, the following RECs were identified:

- The southern corner of the site contains an approximately 10-foot high soil pile with debris. Over the last 20 years, heavy foliage has grown in the area, concealing much of the surficial debris in the area. Based on its experience investigating other sites soil piles and debris, PB believes a risk exists that the soils are contaminated with petroleum substances or heavy metals.

- Beginning in approximately 1907, the Ford Motor Company operated an assembly plant in buildings south and west of the site. As part of its operations, automotive chemicals including gasoline, diesel, anti-freeze, solvents, painting chemicals, heavy metals, in particular mercury, and other potentially contaminating substances were likely stored and used. PB was unable to identify specific locations where these substances were stored within the historic Ford Motor Company complex, of which the site was a part. Some of them may have been stored on the site. If they were stored in the area comprising the site, some of these chemicals were potentially spilled or released. PB believes the historic use of the site by the Ford Motor Company assembly plant creates a risk that soil and groundwater contamination underlies the site.
- Historic Sanborn maps show that Ford operated a paint manufacturing plant at the southwest end of the site. Alongside the main paint manufacturing plant were several structures identified and the “Color Building,” and “Varnish Plant.” Automobile paint was traditionally manufactured using petroleum-based lacquers with pigments. Spillage and releases of these chemicals and organic solvents generated with the cleaning of paint manufacturing equipment is believed to have been common. Chemicals were also commonly disposed “out the back door” to avoid disposal costs. PB believes the former use of the site to manufacture paints and varnishes suggests that a risk exists that soil and groundwater contamination remains on the site.
- Sanborn maps show that the south corner of the site contained a building where paint cans were cleaned. Spillage and releases of these chemicals and organic solvents generated with the cleaning of the paint cans was likely. Cleaning chemicals were also likely disposed “out the back door” to avoid disposal costs. PB believes a risk exists that soil and groundwater contamination remains in the area below and surrounding the former Paint Can Cleaning Building.
- Sanborn maps show that two areas at the west end of the site contained underground tanks that were used to store solvents. These solvents were most likely lacquers used in the paint manufacturing. Spillage of solvents was historically common when solvents were transferred from trucks and railcars into the tanks, and when solvents were transferred for use. Tank leakage was also common. PB found no information that these tanks have been removed. PB believes that a risk exists that these tanks remain in the ground, and that they have historically and may continue to release solvents. Even if the tanks have been removed, the areas where these tanks were located likely contain large quantities of contaminated soil and groundwater.
- Sanborn maps show that three large aboveground tanks at the east end of the color building were used to store glycerin. Glycerin is a common constituent added to pigments and paints, and were likely used in the paint manufacturing process. Spillage of chemicals such as glycerin was historically common when they were transferred from trucks and railcars into the tanks and then later transferred for use. Tank leakage was also common. PB believes the areas where these tanks were located likely contain large quantities of contaminated soil and groundwater. Although these tanks no longer exist, PB believes a risk exists that leakage from the tanks or releases while transferring glycerin into and out of the tanks may have contaminated the underlying soil and groundwater.

- Sanborn maps identify underground fuel oil tanks in the north-central part of the site. Spillage of fuel oil was historically common when it was transferred from trucks and railcars into the tanks, and when later transferred for use. Tank leakage was also common. PB found no information that these tanks have been removed. PB believes that a risk exists that these tanks remain in the ground, and that they have historically and may continue to release solvents. Even if the tanks have been removed, the areas where these tanks were located likely contain large quantities of contaminated soil and groundwater.
- Aerial photographs taken in 1961, 1972, 1985, and 1993 indicate that a large vertically-cylindrical tank was formerly near the south corner of the site. This tank was not identified on the Sanborn maps issued during this time period. Spillage of chemicals was historically common when they were transferred from trucks and railcars into the tanks, and when later transferred for use. Tank leakage was also common. Although the tank no longer exists, PB believes a risk exists that leakage from the tank or releases while transferring contents into and out of the tank may have contaminated the underlying soil and groundwater.
- Multiple railroad spurs crossed and some ended on the site. These spurs were likely used to bring in chemicals used in the paint and varnish manufacturing plants, and the adjacent assembly plant. PB believes that a risk exists that some of these chemicals may have been released during their transfer, and that a risk remains that soil and groundwater contamination exists in the area of the railroad spurs.
- Sanborn maps show that coal was stored in several areas of the site, in particular at the eastern end. Leaching of heavy metals from coal piles commonly occurs. PB believes that a risk exists that heavy metals leached from coal may have impacted soil and groundwater underlying these piles.
- Beginning in approximately 1907, the Ford Motor Company operated an assembly plant in buildings south and west of the site. As part of its operations, automotive chemicals including gasoline, diesel, anti-freeze, solvents, painting chemicals, heavy metals, particularly mercury, and other potentially contaminating substances were likely stored and used. PB was unable to identify specific locations where these substances were stored and used within the historic Ford Motor Company complex. Chemical releases were likely common during the plant's operations. PB believes the historic use of the adjacent property as a Ford Motor Company assembly plant creates a risk that soil and groundwater contamination may have migrated from that property below the site.
- Multiple off-site sources of contamination exist within one-quarter mile of the site boundaries. PB believes that a risk exists that contaminants from these facilities might have migrated onto the site.

### **5.2.2 Amsterdam Street site**

The *Amsterdam Street site VSMF Phase I ESA* is included in Appendix C of this report. Based on the review of available information, the following RECs were identified in the proposed location and surrounding area of the Amsterdam Street VSMF site:

- Soil and groundwater impacts may have occurred due to spills and/or releases from the historical onsite presence of underground storage tanks, an automotive manufacturing

plant, repair/service facilities, a lumber yard, a lime warehouse, a railroad station, freight sidings, parking lots, and a railway car barn.

- Based on a review of historic addresses for the subject property area in historical Sanborn Maps, two historical “auto stations” (Superior Auto Sales and Service [formerly addressed as 6227 Woodward Avenue] and Brake Service Corp. [formerly addressed as 6204 Cass Avenue]) and one historical cleaner (Home Laundry Co. [formerly addressed as 6238 Cass Avenue]) have the potential to have been formerly located on the 6161 Woodward Avenue subject property.
- Potential impacts from sites of environmental concern in the surrounding area, including historical auto stations and cleaners, may have occurred. Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), State Hazardous Waste (SHWS), Leaking Underground Storage Tank (LUST), Underground Storage Tank (UST), and Brownfield sites are located within one-quarter mile of the subject property. (The subject property is not a CERCLIS or NPL facility.) It is assumed that hazardous substances and/or petroleum products have been used and stored at these locations, which may have caused spills/releases.

### **5.2.3 MLK Boulevard site**

The *MLK Boulevard site VSMF Phase I ESA* is included in Appendix D of this report. Based on the review of available information, the following RECs were identified in the proposed location and surrounding area of the MLK Boulevard VSMF site:

- Soil and groundwater impacts may have occurred due to spills and/or releases from the historical onsite presence of a “filling station” with two underground storage tanks and an auto repair shop, which were located on the 3439 Woodward Avenue parcel. In addition, insufficient information was available from municipal and historical sources to identify the usage of two former buildings in the western and southwestern areas of the 3439 Woodward Avenue parcel.
- It is unknown if storage tanks have been associated with historic heat generation for the “steam heat” identified in the City of Detroit Assessor Record Center files for the subject property parcels. Also, it is unknown if historic underground storage tanks have been abandoned or closed in place.
- Potential impacts from sites of environmental concern in the surrounding area, including historical auto stations and cleaners, may have occurred. It is assumed that hazardous substances and/or petroleum products have been used and stored at these locations, which may have caused spills/releases.

### **5.2.4 Summary of VSMF ESA Findings**

All three potential VSMF sites contain RECs, based on the Phase I ESA findings for the Highland Park Ford Plant, Amsterdam Street, and MLK Boulevard VSMF sites. A summary of the RECs for the VSMF sites are summarized in Table 5-1 below.

**Table 5-1. Summary of RECs at VSMF sites**

VSMF site	Potential Environmental Concerns
Highland Park Ford Plant	On-site historical industrial uses: Ford Motor Company assembly plant; paint manufacturing plant; paint can cleaning; solvent and fuel oil underground storage tanks; glycerin aboveground storage tanks; rail activities; and coal piles; current fill soil piles and debris. Nearby off-site sources of contamination.
Amsterdam Street	On-site historical uses: automotive manufacturing plant, underground storage tanks, repair service facilities, lumber yard, lime warehouse, railway station and rail car barn; two historical auto stations*; one dry cleaner. Adjacent and nearby historical auto stations and cleaners.
MLK Boulevard	On-site historical uses: a gas station with two underground storage tanks and an auto repair shop. Adjacent and nearby historical auto stations and cleaners.

\*"Historical auto stations" are a broad category that could include gasoline stations, auto repair facilities, and/or auto garage establishments.

Phase II ESA testing is recommended for all VSMF sites that would be acquired prior to property acquisition and construction, as discussed in Chapter 8.0. Requisite remediation would be performed, as necessary, prior to construction.

### 5.3 TPSS sites

#### 5.3.1 TPSS site #1

TPSS site #1 is situated at 1119 Washington Boulevard in Detroit. The *TPSS site #1 Phase I ESA* is included in Appendix E of this report and identified the following RECs:

- The site originally contained several dwellings, which were demolished to allow construction of a furniture store on the south half of the site, and several small retail stores on the northern half. The demolition of these structures may have included burial of some or all of the demolition debris on the site if these structures had basements. In addition, the source of soil to backfill the structures' basements is unknown. Demolition materials often contain elevated concentrations of heavy metals, particularly lead from paint, and asbestos. Because of the uncertainty of whether demolition materials were actually buried on the site, and because the source of backfill material is unknown, PB believes there is a risk that elevated concentrations of organic compounds and heavy metals are present. The burial of demolition debris and the presence of fill from an unknown source is therefore considered to be a REC.
- Yale Cleaners & Dyers operated from one of the retail stores on the site in the 1920s and 1930s. Many facilities that cleaned clothing used either petroleum products, including kerosene, gasoline, or Stoddard solvent, or chlorinated solvents such as tetrachloroethylene or carbon tetrachloride. Early dry cleaning operators often carelessly spilled or leaked cleaning chemicals, or improperly disposed chemicals "out the back door" to avoid disposal costs. PB believes a risk exists that the presence of this facility on the site may have contaminated the subsurface soil, and that this former business is therefore a REC.
- The Mills & Weber facility was located immediately south of the site in the early 1930s. Many facilities that cleaned clothing used either petroleum products, including kerosene,

gasoline, or Stoddard solvent, or chlorinated solvents such as tetrachloroethylene or carbon tetrachloride. Early dry cleaning operators often carelessly spilled or leaked cleaning chemicals, or improperly disposed chemicals “out the back door” to avoid disposal costs. PB believes a risk exists that this facility may have contaminated the soil on the property with organic compounds. These contaminants could have migrated into and impacted the soil beneath the site. This facility is therefore considered to be a REC.

### **5.3.2 TPSS site #2**

TPSS site #2 is situated at 100 and 114 Cadillac Square in Detroit. The *TPSS site #2 Phase I ESA* is included in Appendix F of this report and identified the following REC:

- The site originally contained 10 retail stores, some of which were demolished to allow construction of the Heineman Building on the western part of the site. The Heineman Building was subsequently demolished in the 1960s. The demolition of these structures may have included burial of some or all of the demolition debris on the site if these structures had basements. In addition, the source of soil to backfill the structures’ basements is unknown. Demolition materials often contain elevated concentrations of heavy metals, particularly lead from paint, and asbestos. Because of the uncertainty of whether demolition materials were actually buried on the site, and because the source of backfill material is unknown, PB believes there is a risk that elevated concentrations of organic compounds and heavy metals are present. The burial of demolition debris and the presence of fill from an unknown source is therefore considered to be a REC.
- The Wayne Hat Shop was located east of the site in 1940. Information in the database listing shows that this facility was a hat cleaner and blocker. Hat cleaning likely involved the use of chemicals also used in dry cleaning facilities, which at the time this facility operated was probably tetrachloroethylene. The blocking process involved the reshaping, and likely also the creation of hats by milliners. Millineries used mercury in the manufacturing of hats, and the mercury may have been spilled or improperly disposed, impacting the soil on the property. PB believes that a risk exists that contamination emanating from this facility has impacted the site. This facility is therefore considered to be a REC.

### **5.3.3 TPSS site #3**

TPSS site #3 is situated at 1208 Woodward Avenue in Detroit. The *TPSS site #3 Phase I ESA* is included in Appendix G of this report and identified the following REC:

- The Hudson’s Building contained a variety of hazardous substances prior to its demolition, including drums of trichloroethylene, oil, Freon, methylene chloride, lead acid batteries, PCB oils, and paint. These materials were located in some of the basements and on upper floors of the building. PB believes that a risk exists that spills, drips, or leaks of these materials may have occurred over the years of the occupancy of Hudson’s, impacting soil beneath the floor of the basements. The former presence of hazardous substances on the site is therefore considered to be a REC.

### **5.3.4 TPSS site #4**

TPSS site #4 is situated at 3439 Woodward Avenue in Detroit. The *TPSS site #4 Phase I ESA* is included in Appendix H of this report and identified the following RECs:

- The site has contained numerous structures during the last 130 years. The demolition of these structures may have included burial of some or all of the demolition debris on the site if these structures had basements. In addition, the source of soil to backfill the structures' basements is unknown. Demolition materials often contain elevated concentrations of heavy metals, particularly lead from paint, and asbestos. Because of the uncertainty of whether demolition materials were actually buried on the site, and because the source of backfill material is unknown, PB believes there is a risk that elevated concentrations of organic compounds and heavy metals are present. The burial of demolition debris and the presence of fill from an unknown source is therefore considered to be a REC.
- A gas station operated on the site from the late 1930s until the 1970s. No information is available to suggest whether contamination from the former gas station operation exists, or whether the USTs associated with the former station were removed from the site. PB believes, however, that since a hotel building was constructed over the gas station property after it was removed from service, it is unlikely that USTs remain on the site. PB believes that a risk exists that soil contamination exists in connection with the former gas station. The former presence of a gas station is therefore considered to be a REC.
- A former auto repair facility operated on the site from the 1910s until the 1970s. This business operated from what was originally a residential garage. No information was available regarding the nature of the business; however, similar businesses generally include the use, storage, handling, and disposal of petroleum products. In addition, parts were often cleaned with solvents, including trichloroethylene. Waste liquids were often improperly disposed "out the back door" to save costs. Because this facility operated for over 60 years, PB believes a risk exists that soil contamination exists in connection with the former business. The former presence of the auto repair facility is therefore considered to be a REC.
- The Coney Island restaurant is immediately south of the site along Woodward Avenue. This property was the location of four former dry cleaning facilities (Monarch Laundry, American Hat Cleaners, Quick Service Cleaners, and Johnides John, Inc.) from the 1910s to the late 1950s. In addition, the 1919 Sanborn Map shows that a 1,000 gallon gasoline UST was located behind the original building very close to the edge of the site. Many facilities that cleaned clothing used either petroleum products, including kerosene, gasoline, or Stoddard solvent, or chlorinated solvents such as tetrachloroethylene or carbon tetrachloride. Early dry cleaning operators often carelessly spilled or leaked cleaning chemicals, or improperly disposed chemicals "out the back door" to avoid disposal costs. PB believes a risk exists that this facility is likely to have contaminated the soil on the property with organic compounds. It is also unclear whether the UST that was behind the building was ever removed, or whether it leaked contaminants. Both the chlorinated solvents and petroleum compounds could have migrated onto and impacted the soil beneath the site. This facility is therefore considered to be a REC.

### **5.3.5 TPSS site #5**

TPSS site #5 is situated at 6161 Woodward Avenue in Detroit. The *TPSS site #5 Phase I ESA* is included in Appendix I of this report and identified the following RECs:

- Railroad sidings were present on the northern part of the site from the 1880s through the 1930s. The sidings were used to deliver products to the site, probably for both the former lumber yard and for the former Cadillac Car Company. In addition, gasoline was reportedly delivered to the site via rail cars to fill the four USTs used by the Cadillac Car Company. A risk exists that spills of fuel or other materials may have occurred around the sidings and near the fill port for the USTs (located near the sidings on the northwest part of the site). PB therefore believes the former presence of the railroad sidings on the site is a REC.
- The Cadillac Car Company occupied the site from about 1900 to the 1930s. As part of its operations, it had repair facilities and four 10,000-gallon gasoline USTs on the site. The USTs were actually found to be 14,000-gallon tanks partially encased in concrete, and were closed in place in 1997. The operation of this facility on the site likely involved the use of petroleum products (besides the gasoline stored in the USTs), metals, and solvents. Facilities operating during this time were usually careless with liquids, and spills, drips, and improper disposal of these materials was common. PB believes that a risk exists that the soil on the site has been contaminated by the operation of this facility. The former presence of this facility on the site is therefore considered to be a REC.
- Superior Auto Sales & Service and Brake Service facility were present on the site in 1926. Superior Auto Sales fronted Woodward Avenue, while Brake Service fronted Cass Avenue. No information was available regarding the nature of the auto repair activities done in these facilities; however, similar businesses generally include the use, storage, handling, and disposal of petroleum products. In addition, parts were often cleaned with solvents, including trichloroethylene. Waste liquids were often improperly disposed “out the back door” to save costs. PB believes that a risk exists that contamination from the former businesses have impacted the site. The former presence of these facilities is therefore considered to be a REC.
- Home Laundry was present on the site in 1926. No information was available regarding whether this facility used chemical in its cleaning process. Many facilities that cleaned clothing used either petroleum products, including kerosene, gasoline, or Stoddard solvent, or chlorinated solvents such as tetrachloroethylene or carbon tetrachloride. Early dry cleaning operators often carelessly spilled or leaked cleaning chemicals, or improperly disposed chemicals “out the back door” to avoid disposal costs. PB believes that if this facility used chemicals in the cleaning process, it is likely to have contaminated the soil on the site with organic compounds. This facility is therefore considered to be a REC.
- A machine shop was present west of the site across Cass Avenue in 1897. It was unclear how long this facility was present. Machine shops typically use oils to lubricate and cool machining equipment for cutting metal parts. Chlorinated solvents, particularly trichloroethylene, may be used to degrease or clean parts. These liquids often were allowed to drip off parts and equipment, and impact the soil on the property. PB believes that a risk exists that the soil on the property west of the site was impacted with oil and/or trichloroethylene, but that a low risk exists that this contamination has migrated across Cass Avenue and impacted the site. This facility is therefore considered to be a REC.

### 5.3.6 TPSS site #6

TPSS site #6 is situated at 9440 Woodward Avenue in Detroit. The *TPSS site #6 Phase I ESA* is included in Appendix J of this report and identified the following RECs:

- Several connected dwellings were formerly on the site fronting Woodward Avenue and Westminster Street. PB was informed by the site owner that he had the structures demolished about 10 years ago after he purchased the property. The structures were completely removed (including the basement footings and floors) and properly disposed. The source of soil to backfill the structures' basements is unknown. Because the source of backfill material is unknown, PB believes there is a risk that elevated concentrations of organic compounds and heavy metals are present. The presence of fill from an unknown source is therefore considered to be a REC.
- A laundry operated on the site during the 1940s and 1950s. The S Yeo Laundry was initially listed as a Chinese laundry in 1940, and later as a laundry through the late 1950s. No information was available regarding whether this facility performed dry cleaning activities. Many facilities that cleaned clothing used either petroleum products, including kerosene, gasoline, or Stoddard solvent, or chlorinated solvents such as tetrachloroethylene or carbon tetrachloride. Early dry cleaning operators often carelessly spilled or leaked cleaning chemicals, or improperly disposed chemicals "out the back door" to avoid disposal costs. PB believes that a risk exists that if this facility used chemicals in its cleaning activities, that it contaminated the soil on the site with organic compounds. This facility is therefore considered to be a REC.
- The Versnick Motors and Givens Service facilities occupied the property north of the site across Westminster Street. Givens Service was the gas station, and Versnick Motors was the auto repair facility. The businesses were listed in the historical auto stations database. The facilities operated from the early 1930s until the late 1960s or early 1970s. No information was available regarding whether these facilities have known contamination, or whether the USTs associated with the gas station were removed. Because of the nature of these businesses, and their proximity to the site, PB believes that a risk exists that the property is contaminated, and that the contamination has impacted the site. These facilities are therefore considered to be a REC.
- The William Forster facility was listed as a historic auto station in the 1920s and 1930s, and was located immediately south of the site at 9434 Woodward Avenue. This facility performed unspecified auto repair activities. No information was available regarding the nature of the auto repair activities; however, similar businesses generally include the use, storage, handling, and disposal of petroleum products. In addition, parts were often cleaned with solvents, including trichloroethylene. Waste liquids were often improperly disposed "out the back door" to save costs. PB believes it is likely that soil contamination exists in connection with the former business, and that a risk exists that the contamination has impacted the site. The former presence of this facility is therefore considered to be a REC.

- The Benjamin Goldman and Perlman Chas facilities occupied the property south of the site at 9430 Woodward Avenue from the 1920s through the early 1940s. The Benjamin Goldman facility was listed as a historic auto station that performed auto repair activities. The Perlman Chas facility was listed as a hand laundry in 1931. The auto repair activities may have been part of the William Forster facility, and likely had the same issues. The hand laundry is unlikely to have used hazardous substances or chemicals in a cleaning process, and is therefore not considered to be a concern. PB believes it is likely that soil contamination exists in connection with the former auto repair business, and that a risk exists that the contamination has impacted the site. The former presence of this facility is therefore considered to be a REC.
- Nevan Cleaners was present about 170 feet south of the site in the 1950s and 1960s. Many facilities that performed cleaning of clothing during this time period used chlorinated solvents such as tetrachloroethylene. Early dry cleaning operators often carelessly spilled or leaked the cleaning chemicals, or improperly disposed chemicals “out the back door” to avoid disposal costs. PB believes that it is likely that this facility contaminated the soil on the property with organic compounds, and that a risk exists that those compounds have impacted the site. This facility is therefore considered to be a REC.

### **5.3.7 TPSS site #7**

TPSS site #7 is situated at 12921, 12937, 12941, and 12961 Woodward Avenue in Highland Park. The *TPSS site #7 Phase I ESA* is included in Appendix K of this report and identified the following RECs:

- The site has contained numerous structures during the last 100 years. Most of these structures were demolished in the late 1990s. The demolition of these structures may have included burial of some or all of the demolition debris on the site if these structures had basements. In addition, the source of soil to backfill the structures’ basements is unknown. Demolition materials often contain elevated concentrations of heavy metals, particularly lead from paint, and asbestos. Because of the uncertainty of whether demolition materials were actually buried on the site, and because the source of backfill material is unknown, PB believes there is a risk that elevated concentrations of organic compounds and heavy metals are present. The burial of demolition debris and the presence of fill from an unknown source is therefore considered to be a REC.
- A laundry (Miro Saml Laundry, North Woodward Hand Laundry, Nathan Bell Laundry, and Albert’s Cleaners & Laundry) was present on the northeast part of the site from at least 1925 until the late 1960s. A second laundry (Blu Lite Cleaners and Dressmaking, Avalon French Cleaners and Dyers) was present on the southeast part of the site from the early 1930s until the mid 1960s. Many facilities that cleaned clothing used either petroleum products, including kerosene, gasoline, or Stoddard solvent, or chlorinated solvents such as tetrachloroethylene or carbon tetrachloride. Early dry cleaning operators often carelessly spilled or leaked cleaning chemicals, or improperly disposed chemicals “out the back door” to avoid disposal costs. PB believes a risk exists that the former presence of dry cleaner facilities on the site has contaminated the soil with organic compounds. The former presence of the laundry and dry cleaners on the site is therefore considered to be a REC.

- Forest Cleaners & Dyers was located east of the site in the Galilee Gospel Center building. This facility operated under different names between about 1954 and 1970. Cleaner facilities that operated during the time this facility was present used tetrachloroethylene as the cleaning agent. Many dry cleaning operators often carelessly spilled or leaked the cleaning chemicals, or improperly disposed chemicals “out the back door” to avoid disposal costs. PB believes that it is likely that this facility contaminated the soil on the property with organic compounds, and that a risk exists that those compounds have impacted the site. This facility is therefore considered to be a REC.
- The Highland Auto Sales & Repair facility operated under various names, and was located east of the site from about 1921 to 1940 on the property currently occupied by the Galilee Gospel Center building. No information was available regarding the nature of the business or how long it operated; however, similar businesses generally include the use, storage, handling, and disposal of petroleum products. In addition, parts were often cleaned with solvents, including trichloroethylene. Waste liquids were often improperly disposed “out the back door” to save costs. PB believes it is likely that soil contamination exists in connection with the former business and that a risk exists that contamination may have migrated and impacted the site. The former presence of the auto repair facility is therefore considered to be a REC.
- The Chresnia Saml facility was a historic clothes pressers and cleaners business that was located east of the site during the 1920s and 1930s on the property currently occupied by the Galilee Gospel Center Building. Many facilities that cleaned clothing used either petroleum products, including kerosene, gasoline, or Stoddard solvent, or chlorinated solvents such as tetrachloroethylene or carbon tetrachloride. Early dry cleaning operators often carelessly spilled or leaked cleaning chemicals, or improperly disposed chemicals “out the back door” to avoid disposal costs. PB believes that it is likely that this facility contaminated the soil on the property with organic compounds, and that a risk exists that those compounds have impacted the site. This facility is therefore considered to be a REC.
- The Highland Tower Cleaners facility was a historic cleaners and dyers business that operated under various names from the early 1930s to the 1970s, and was located about 300 feet southeast of the site. Many facilities that cleaned clothing used either petroleum products, including kerosene, gasoline, or Stoddard solvent, or chlorinated solvents such as tetrachloroethylene or carbon tetrachloride. Early dry cleaning operators often carelessly spilled or leaked cleaning chemicals, or improperly disposed chemicals “out the back door” to avoid disposal costs. PB believes that it is likely that this facility contaminated the soil on the property with organic compounds, and that a risk exists that those compounds have impacted the site. This facility is therefore considered to be a REC.

### **5.3.8 TPSS site #8**

TPSS site #8 is situated at 17400 Woodward Avenue in Detroit. The *TPSS site #8 Phase I ESA* is included in Appendix L of this report and identified the following RECs:

- The site was used as a gasoline service station from the 1930s until about 2000. The site is also listed in the LUST, UST, and Brownfields databases. As discussed in the MDEQ records in Section 5.1.8, seven USTs and between 500 and 600 cubic yards of highly contaminated soil were removed in April 2003; however, the contaminant investigation has not progressed, and is listed by the MDEQ as “open.” In addition, this facility was believed to have two hydraulic hoists that were not removed. A trench drain and possibly an oil-water separator are also in the floor of the former building. PB believes that the former presence of a gasoline service station with known contamination on the site is a REC.
- The John Willett facility was about 30 feet north of the site and listed as a clothes presser and cleaner in 1935. Many facilities that cleaned clothing used either petroleum products, including kerosene, gasoline, or Stoddard solvent, or chlorinated solvents such as tetrachloroethylene or carbon tetrachloride. Early dry cleaning operators often carelessly spilled or leaked cleaning chemicals, or improperly disposed chemicals “out the back door” to avoid disposal costs. PB believes that it is likely that this facility contaminated the soil on the property with organic compounds, and that a risk exists that those compounds have impacted the site. This facility is therefore considered to be a REC.
- The S Moy Laundry was initially listed as a Chinese laundry in 1931, and later as a laundry through 1970. No information was available regarding whether this facility performed dry cleaning activities. Many facilities that cleaned clothing used either petroleum products, including kerosene, gasoline, or Stoddard solvent, or chlorinated solvents such as tetrachloroethylene or carbon tetrachloride. Early dry cleaning operators often carelessly spilled or leaked cleaning chemicals, or improperly disposed chemicals “out the back door” to avoid disposal costs. PB believes that it is likely that if this facility used chemicals in its cleaning activities, that it contaminated the soil on the property with organic compounds. A risk exists that contaminants emanating from this facility have impacted the site. This facility is therefore considered to be a REC.

### 5.3.9 TPSS site #9

TPSS site #9 is situated at 19816 Woodward Avenue in Detroit. The *TPSS site #9 Phase I ESA* is included in Appendix M of this report and identified the following REC:

- The property immediately north of the site has been a gas station with various names (currently Sunoco) since about 1925. This facility is listed in the UST database, but no information exists to suggest that contamination is on the property. PB believes that a risk exists that a gas station in operation over the past 86 years has resulted in contamination, and that the contamination could have impacted the site. This facility is therefore considered to be a REC.

### 5.3.10 Summary of TPSS ESA Findings

Based on the TPSS site ESAs, all nine potential TPSS sites contain RECs (Table 5-2). The following is a summary of those environmental concerns.

**Table 5-2. Summary of RECs at TPSS sites**

<b>TPSS site</b>	<b>Potential Environmental Concerns</b>
TPSS site #1	On-site historical dry cleaner, unknown backfill soil. Adjacent historical dry cleaner.
TPSS site #2	On-site unknown backfill soil. Adjacent historical hat cleaner and blocker.
TPSS site #3	On-site historical storage of contaminating substances.
TPSS site #4	On-site historical gas station and auto repair, unknown backfill soil. Adjacent historical dry cleaner.
TPSS site #5	On-site historical railroad siding operations, underground storage tank fueling; repair facilities for historical automotive plant; two historical on-site auto stations; historical on-site dry cleaner. Adjacent historical machine shop.
TPSS site #6	On-site historical dry cleaner, unknown backfill soil. Several adjacent historical gas stations and a dry cleaner
TPSS site #7	Two on-site historical dry cleaners, unknown backfill soil. Several adjacent historical dry cleaners and a gas station.
TPSS site #8	On-site historical gas station and auto repair. Two adjacent historical dry cleaners.
TPSS site #9	Current adjacent gasoline station.

Phase II ESA testing is recommended for all TPSS sites that would be acquired prior to property acquisition and construction, as discussed in Chapter 8.0. Requisite remediation would be performed, as necessary, prior to construction.

#### **5.4 Gateway Center Building Site**

The *Gateway Center Building Site Phase I ESA* is included in Appendix N of this report. Based on the review of available information, no RECs were identified onsite; however the following adjacent REC was identified:

- **Adjacent Historic Cleaners:** The Washington Cleaners & Dyers facility was located on the south side of State Street at 309 State Street, north of the Site in the 1920s. Yale Cleaners & Dyers operated from one of the retail stores at 1143 Washington Boulevard adjacent north of the Site in the 1920s and 1930s. The Mills & Weber facility was also located immediately north of the Site at 1139 Washington Boulevard in the early 1930s. Many facilities that cleaned clothing used either petroleum products, including kerosene, gasoline, or Stoddard solvent, or chlorinated solvents such as tetrachloroethylene or carbon tetrachloride. Early dry cleaning operators often carelessly spilled or leaked cleaning chemicals, or improperly disposed chemicals “out the back door” to avoid disposal costs. A potential risk exists that these facilities may have contaminated the underlying soil on the property with organic compounds. These contaminants could have migrated onto and impacted the soil beneath the Site. These historic cleaner facilities are therefore considered to be a REC.

## **6.0 Long-Term Effects**

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### **6.1 No Build Alternative**

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With no LPA-related construction or VSMF- and TPSS-related property acquisition, there would be no anticipated hazardous materials impact.

### **6.2 LPA Alignment**

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LRT technology uses electricity to power the LRT vehicles via an overhead catenary system. This power source would have no long-term anticipated hazardous materials impact to the environment.

Any existing hazardous material condition along the alignment would have no long-term effect to the operation of the LRT. Although localized areas may contain elevated levels of contamination, the LPA would not exacerbate or make the existing contamination worse. As discussed in Chapter 8.0, contamination found during construction activities will be properly removed and disposed of.

### **6.3 VSMF and TPSS sites**

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#### **6.3.1 Long-Term Effects from the VSMF and TPSS sites**

The VSMF will be a full-service facility with indoor and/or outdoor storage, administrative offices, and on-site light maintenance repairs. The facility is expected to include a vehicle wash, paint booth, body shop, and other general repair, including maintenance pits and work areas that would store and use several types of hazardous and petroleum chemicals. Best Management Practices (BMPs) and pollution prevention techniques will ensure that a low risk will exist for any potential impacts to the VSMS and/or environment. No hazardous materials will be used within the TPSS, therefore there will be no long-term effects.

#### **6.3.2 Long-Term Effects Associated with VSMF and TPSS Property Acquisition**

The Phase I ESA studies indicate that RECs are associated with all of the candidate VSMF and TPSS sites. These RECs could result in adverse long-term effects if adequate due diligence is not performed. Adverse long-term effects include purchasing contaminated property and having potential environmental cleanup liability and associated due-care consequences. Due diligence for the proposed project includes having an ASTM E1527-05-compliant Phase I ESA and conducting recommended Phase II testing to help establish whether contamination is present and, if present, to determine its nature and extent. To evaluate the nature and extent of potential contamination associated with the RECs identified in the VSMF and TPSS Phase I ESAs, Phase II ESA work plans will be developed that will dictate sampling locations, depth, and analytical parameters. If contamination is present, proper due care obligations must also be exercised to minimize potential exposure to the contamination. The VSMF and TPSS sites are not intended to provide public access on a regular or continuous basis for an express public purpose; conversely the LRT and stations invites the general public to use that property for the express public purpose. Proper due-care activities are determined by the type, location, and concentrations of contaminants and the future property use and exposures, which are yet to be determined. Typical due-care activities include removal of highly contaminated soils, installation of vapor mitigation systems, and installation of a barrier to eliminate direct contact with contaminated soil.

#### **6.4 Gateway Center Building Site**

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The Phase I ESA identified a REC on an adjacent property. Therefore, it is recommended that soil testing be conducted on the site in order to determine whether potential contamination from the REC has migrated on site. If contamination is present, proper due care obligations must be exercised to minimize potential exposure to the contamination. Proper due-care activities are determined by the type, location, and concentrations of contaminants and the future property use and exposures, which are yet to be determined. Typical due-care activities include removal of highly contaminated soils, installation of vapor mitigation systems, and installation of a barrier to eliminate direct contact with contaminated soil.

## 7.0 Short-Term Construction Effects

### 7.1 LPA Alignment

Construction of the LRT guideway and stations will be generally limited to near-surface work (approximately three feet from the ground surface), based on preliminary engineering. Deeper excavations are necessary at the two railroad viaducts to provide a maximum underclearance of 15.5 feet for the LRT. The maximum depth of excavation would vary at both railroad viaducts, depending on location, but is expected to range from approximately four to eight feet below the ground surface. The cuts will extend from the existing grade to the proposed pavement/track surface and also include additional excavation required for the track slab. The lateral distance of excavation at the viaducts is expected to range from 150 to 200 feet north and south of the viaducts.

Potential contamination migrating from a source off the road right-of-way (e.g., leaking underground storage tanks at an adjacent gas station) is not expected to impact near-surface soil in the planned LRT guideway and station construction areas. As stated in Chapter 5.0, the most common potential contaminant sources along the alignment include gasoline stations, dry cleaners, and auto repair shops. Contamination plumes of this type typically begin at the source area and generally migrate downward (through gravity) and outward (through dispersion). As the contamination spreads laterally in the unsaturated soil, the depth at which it would be encountered increases. Therefore, near-surface construction work is not expected to encounter soil contamination that may have migrated from a source off the road right-of-way. In the event contamination is encountered during construction, appropriate mitigation measures including soil removal and disposal will be implemented as discussed in Chapter 8.0.

The potential RECs in the immediate vicinity of the railroad viaducts, where deeper excavations could encounter contamination from off-site sources, are summarized in the following table (Table 7-1). The following information was identified in the *Woodward LPA Alignment Modified Phase I ESA Report* in Appendix A.

**Table 7-1. Summary of RECs Railroad Viaducts**

Railroad Viaduct	REC ID#	Name	Comment/Issue
Railroad Viaduct between Endicott St and Baltimore St	3-22	James Martin Car Dealership	LUST site; possible contaminating substance use
	3-23	Railroad activities	potential spills; possible incremental releases of fuel and/or lubricants
	3-24	Former Woodward Laundry	historical dry cleaner
	3-25	Former Hirsch Cleaners & dyers; Palace Model Laundry Co.	historical dry cleaner
Railroad Viaduct between Bartlett St and Midland Street	6-12	Railroad tracks	potential spills; possible incremental releases of fuel and/or lubricants
	6-13	Hi-Super Service	historic gas station
	6-14	LaBelle Cleaners	historic dry cleaner
	6-15	Quick Clean Wash	historic dry cleaner

Based on the findings in the *Woodward LPA Alignment Modified Phase I ESA Report*, both railroad viaducts have multiple nearby properties of environmental concern.

## **7.2 VSMF TPSS, and Gateway Center Building sites**

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Based on the Phase I ESAs, Phase II ESA testing is recommended for each selected VSMF and TPSS site, except for TPSS #3, along with requisite construction-phase remediation. Testing is not recommended at TPSS #3 because it is not anticipated that this property would be acquired, and the TPSS would likely be constructed on top of or within an existing underground parking structure, requiring no excavation. Soil testing is also recommended at the Gateway Center building site. Remediation/mitigation would be performed in accordance with NREPA. In addition, if contamination is present, proper due care obligations must be exercised to minimize potential exposure to the contamination.

## 8.0 Mitigation

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### 8.1 LPA Alignment

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Mitigation measures would be needed only along the LPA alignment in areas where construction activities encounter known or suspected contaminated soil or groundwater. Even where the LPA is located near or over part of a known contaminated site, the construction may not involve excavation to a depth that exposes contaminated soil or groundwater.

If contaminated soil or groundwater is suspected based on visual and/or olfactory evidence of contamination found during subsurface construction activities, and such contamination needs to be removed during construction activities, the soil or groundwater will be tested to evaluate whether it is contaminated. If it is found to be contaminated, that material would be properly classified and disposed of as non-hazardous or hazardous waste (i.e. Type II landfill or hazardous waste treatment/landfill) using appropriate waste management (i.e. removal, handling, transport, and disposal) practices. In the event contamination is discovered during rail construction activities, a remediation plan will be developed to address the contamination. The remediation plan will be performed according to NREPA.

### 8.2 VSMF and TPSS sites

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To help avoid potential cleanup liability associated with purchasing contaminated property, full environmental due-diligence activities will be performed prior to VSMF and TPSS property acquisition. According to ASTM 1527-05, “due diligence is the process of inquiring into the environmental characteristics of a parcel of commercial real estate or other conditions, usually in connection with a commercial real estate transaction. The degree and kind of due diligence vary for different properties and differing purposes.” Although full Phase I ESAs have been completed for the VSMF and TPSS sites proposed to be acquired, the Phase I ESAs will need to be updated no sooner than six months prior to property acquisition to remain fully compliant with ASTM E1527-05 and 40 CFR Part 312.

Phase II ESA testing is recommended for all VSMF and TPSS sites that would be acquired prior to property acquisition and construction. Phase II testing is conducted to help establish whether contamination is present and, if present, its nature and extent. To evaluate the nature and extent of potential contamination associated with the RECs identified in the VSMF and TPSS Phase I ESAs, Phase II ESA work plans will be developed that will dictate sampling locations, depth, and analytical parameters. If contamination is present above cleanup criteria, a Baseline Environmental site Assessment (BEA), as outlined in Part 201 of NREPA, as amended, would need to be completed and disclosed to MDEQ to obtain liability protection.

Depending on the nature and extent of contamination that may be present, due-care activities would be completed to satisfy ongoing due-care obligations. Section 20107a of Part 201 of NREPA specifically requires that owners or operators who have knowledge their property is contaminated shall provide due care including, but not limited to, undertaking measures as are necessary to prevent exacerbation, and exercising due care by undertaking response activity necessary to mitigate unacceptable exposure to hazardous substances, mitigate fire and explosion hazards due to hazardous substances, and allow for the intended use of the facility in a manner that protects the public health and safety. Due-care requirements are not related to the owner or operator’s liability for the contaminants; they apply to non-labile parties and liable

parties alike. Proper due-care activities are determined by the type, location, and concentrations of contaminants and the future property use and exposures, which are yet to be determined. Typical due-care activities include removal of highly contaminated soils, installation of vapor mitigation systems, and installation of a barrier to eliminate direct contact with contaminated soil.

Requisite remediation would be performed, as necessary, prior to construction according to the requirements of NREPA.

### **8.3 Gateway Center Building Site**

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Soil borings are recommended to allow for the collection of soil samples from the Site to evaluate whether contamination exists in connection with the adjacent historic cleaners north of the Site (Washington Cleaners & Dyers, Yale Cleaners & Dyers, and Mills & Weber). The soil samples should be analyzed for volatile organic compounds (VOCs). In an effort to evaluate the nature and extent of potential contamination associated with the REC identified in the ESA, a work plan would be developed that will dictate sampling locations, depth, and analytical parameters.

If contamination is present above cleanup criteria, a Baseline Environmental site Assessment (BEA), as outlined in Part 201 of NREPA, as amended, would need to be completed and disclosed to MDEQ to obtain liability protection.

Depending on the nature and extent of contamination that may be present, due-care activities would be completed to satisfy ongoing due-care obligations. Section 20107a of Part 201 of NREPA specifically requires that owners or operators who have knowledge their property is contaminated shall provide due care including, but not limited to, undertaking measures as are necessary to prevent exacerbation, and exercising due care by undertaking response activity necessary to mitigate unacceptable exposure to hazardous substances, mitigate fire and explosion hazards due to hazardous substances, and allow for the intended use of the facility in a manner that protects the public health and safety. Due-care requirements are not related to the owner or operator's liability for the contaminants; they apply to non-labile parties and liable parties alike. Proper due-care activities are determined by the type, location, and concentrations of contaminants and the future property use and exposures, which are yet to be determined. Typical due-care activities include removal of highly contaminated soils, installation of vapor mitigation systems, and installation of a barrier to eliminate direct contact with contaminated soil. Requisite remediation would be performed, as necessary, prior to construction according to the requirements of NREPA.

It is also recommended that a Hazardous Materials Building Survey be conducted for the Gateway Office Building site prior to its demolition. The Hazardous Materials Building Survey should include an asbestos inspection, lead paint evaluation, and other hazardous materials that may be present (e.g. PCB or mercury-containing equipment, etc.) in the building.

## 9.0 Summary

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To evaluate potential contaminant sources, Phase I Environmental site Assessment (ESA) activities were conducted along the LPA alignment (Modified Phase I ESA), on three candidate vehicle storage and maintenance facilities (VSMF's), nine candidate traction power substations (TPSS) sites and the Gateway Center Building site. The Phase I ESA studies indicate that RECs are associated with all of the candidate VSMF and TPSS sites, as well as a property adjacent to the Gateway Center Building site.

Construction of the LRT guideway and stations will be generally limited to near-surface work (approximately three feet from the ground surface), based on preliminary engineering. Deeper excavations are necessary at the two railroad viaducts. Both railroad viaducts have multiple nearby properties of environmental concern where deeper excavations could encounter contamination from off-site sources. Mitigation measures would be needed only in areas where construction activities encounter known or suspected contaminated soil or groundwater. Even where the LPA is located near or over part of a known contaminated site, the construction may not involve excavation to a depth that exposes contaminated soil or groundwater. If contaminated soil or groundwater is suspected based on visual and/or olfactory evidence of contamination found during LRT subsurface construction activities, and such contamination needs to be removed during construction activities, the soil or groundwater will be tested to evaluate whether it is contaminated. In the event contamination is discovered during rail construction activities, a remediation plan will be developed to address the contamination. The remediation plan will be performed according to NREPA.

To help avoid potential cleanup liability associated with purchasing contaminated property, full environmental due-diligence activities will be performed prior to any property acquisition. Although full Phase I ESAs have been completed for the sites proposed to be acquired, the Phase I ESAs will need to be updated no sooner than six months prior to property acquisition to remain fully compliant with ASTM E1527-05 and 40 CFR Part 312. Phase II ESA testing is recommended for all VSMF and TPSS sites that would be acquired, and the Gateway Center Building site prior to its acquisition and construction. To evaluate the nature and extent of potential contamination associated with the identified RECs Phase II ESA work plans will be developed that will dictate sampling locations, depth, and analytical parameters. Depending on the nature and extent of contamination that may be present, due-care activities would be completed to satisfy ongoing due-care obligations. Requisite remediation/mitigation would be performed, as necessary, prior to construction according to NREPA.

## 10.0References

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40 CFR Part 312, Standards and Practices for All Appropriate Inquiries, 69 Fed. Reg. 52541, November 1, 2005.

American Society of Testing and Materials, *E 1527-05, Standard Practice for Environmental site Assessments: Phase I Environmental site Assessment Process,* West Conshohocken, PA, 2005.