Addendum 2: Supplemental Phase IA Archaeological Study

Frederick Douglass Tunnel
B&P Tunnel Replacement Program
Lafayette Gas Line Relocation

Baltimore, Maryland

Prepared for:

Amtrak
1 Massachusetts Avenue, NW
Washington, DC 20001

Prepared by:

WSP USA Inc.
1 East Pratt Street, 3rd Floor
Baltimore, Maryland 21202

February 7, 2025

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REPORT MAPPING AND TEXT REDACTED
TO PROTECT SENSITIVE ARCHAEOLOGICAL SITE INFORMATION

Prepared for:

Amtrak
1 Massachusetts Avenue, NW
Washington, DC 20001

Prepared by:

Henry Ward and Greg Katz

WSP USA Inc.
1 East Pratt Street, 3rd Floor
Baltimore, Maryland 21202

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ABSTRACT

On behalf of Amtrak, WSP USA Inc. (WSP) has prepared an addendum to the supplemental Phase IA archaeological study for the Frederick Douglass Tunnel, B&P Tunnel Replacement Program (Program) in Baltimore, Maryland. This addendum has been prepared to assess the archaeological sensitivity of additional areas that have been added to the Program limits of disturbance (LOD) since the completion of the supplemental Phase IA archaeological study in 2023. This addendum report focuses on the construction of belowground utilities, specifically a Baltimore Gas and Electric Gas (BGE) Line located outside of the Program's previously defined Archaeological Area of Potential Effects (APE-Archaeology) in the vicinity of the Program's South Portal and Approach. The relocation of the existing gas line is required by the planned replacement of the Lafayette Avenue Bridge.

The proposed Program will replace the 1.4-mile-long rail tunnel located along the Northeast Corridor in Baltimore. The B&P (Baltimore & Potomac) Tunnel is owned by Amtrak and used for regional and Acela intercity passenger trains, Maryland Area Rail Commuter passenger trains, and Norfolk Southern Railway freight trains. The Program extends between and does not include Baltimore Pennsylvania Station (B-3727) and North Franklintown Road and consists of a tunnel extending along a gradual arc for approximately 2 miles.

To satisfy its responsibilities for the Program under Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations (36 C.F.R. Part 800), including completing archaeological historic property identification and resolution of adverse effects on historic properties, the Federal Railroad Administration, in consultation with the other signatories and consulting parties, executed a Programmatic Agreement (PA) on March 2, 2017—*Project Programmatic Agreement Among the Federal Railroad Administration, Maryland State Historic Preservation Officer, National Railroad Passenger Corporation, and Preservation Maryland Regarding the Baltimore & Potomac Tunnel Program, Baltimore City, Maryland*—that requires identification and assessment of Program effects on archaeological historic properties.

The initial Phase IA archaeological study was completed in 2015; however, the Program designs had not been sufficiently developed at that time to establish an APE-Archaeology. That study was therefore limited to the centerline of the alignments of each of the design alternatives. The 2015 Phase IA study concluded that although large portions of the alignment alternatives have been disturbed, there was the potential for the presence of both precontact and historic archaeological sites within the alignments of each of the build alternatives. The 2015 study recommended that a supplemental Phase IA archaeological study be conducted once the Preferred Alternative was determined, and the extent of anticipated ground-disturbing activities ascertained.

In accordance with Program PA stipulations VI.B, VI.C.1 and VI.C.2, WSP completed a supplemental Phase IA archaeological study to determine the sensitivity for the presence of precontact and historic archaeological resources in the APE-Archaeology for the Selected Alternative for the Program. In addition, the supplemental Phase IA study included recommendations for further survey to identify archaeological resources in the APE-Archaeology. The supplemental Phase IA archaeological study was submitted to the Maryland Historical Trust (MHT) and the consulting parties for review on October 19, 2023. In an email dated November 20, 2023, the MHT concurred with the report's findings and recommendations.

Since the submission of the supplemental Phase IA archaeological study, the Program design continues to advance and certain new elements that require ground-disturbing activities extend outside the previously defined APE-Archaeology. For this addendum to the supplemental Phase IA archaeological study, the LOD has been expanded in the vicinity of the proposed South Portal by approximately 7.5 acres along Wheeler, Warwick, and Whitmore Avenues. WSP completed this addendum to the supplemental Phase IA archaeological study to incorporate the expanded APE-Archaeology and assess the sensitivity for the presence of precontact and historic archaeological resources in this expanded APE-Archaeology, i.e., the additional areas where additional ground-disturbing activities are now proposed in the vicinity of the South Portal.

The review of available environmental and soil data, historical background research, and the results of the Geographic Information System topographical analysis, indicates that there is a low sensitivity for encountering precontact and/or historic archaeological resources in the expanded APE-Archaeology. The prior modification of the landscape within the expanded APE-Archaeology at the South Portal consisted of substantial ground disturbance associated with urban development, transportation improvements, and construction of buried utilities. As a result of the extent of previous ground disturbance, there is a low potential for the presence of intact archaeological resources. No further archaeological survey is recommended for the expanded APE-Archaeology associated with the Lafayette Gas Line Relocation .

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I. INTRODUCTION

A. PROJECT BACKGROUND

On behalf of Amtrak, WSP USA Inc. (WSP) prepared an addendum to the supplemental Phase IA archaeological study for the Frederick Douglass Tunnel, Baltimore & Potomac (B&P) Tunnel Replacement Program (Program) in Baltimore, Maryland. This addendum, Addendum 2, has been prepared to assess the archaeological sensitivity of additional areas that have been added to the Program limits of disturbance (LOD) since the completion of Addendum 1 to the supplemental Phase IA archaeological study. Addendum 2 focuses on the construction of belowground utilities located outside the Program's previously defined Archaeological Area of Potential Effects (APE-Archaeology) in the vicinity of the South Portal (Figure 1). This new area of LOD is associated with the required relocation of portions of a BGE Gas Line along segments of Wheeler, Warwick, and Whitmore Avenues, which is required by the replacement of the Lafayette Avenue Bridge.

In accordance with the National Environmental Policy Act (NEPA), the Federal Railroad Administration (FRA), as the lead federal agency, issued a Draft Environmental Impact Statement (DEIS) in December 2015 that evaluated the environmental impacts of three build alternatives (Alternatives 3A, 3B, and 3C) in comparison with the No-Build Alternative. The FRA issued a Final Environmental Impact Statement (FEIS) on November 25, 2016. A Phase IA archaeological study for the B&P Tunnel Replacement Program's three build alternatives was completed in 2015 in support of the DEIS (Shellenhamer and Kodlick 2015). The study found that areas with potential for both precontact and historic archaeological resources are present in the approximate alignments of each of the three alternatives, but that the designs were not sufficiently advanced at that time to identify specific areas for archaeological survey or determine the effects on archaeological resources as a result of the undertaking.

Based on the analysis of the Program's potential environmental effects in the DEIS and public and agency comments, the FRA and the Maryland Department of Transportation (MDOT) identified Alternative 3B as the Preferred Alternative for the Program in the FEIS. The FRA issued the Record of Decision (ROD) in March 2017 for the Program, in which the FRA determined that the Preferred Alternative is the Selected Alternative for the B&P Tunnel Replacement Program. The FRA found that the Preferred Alternative, including the preferred Intermediate Ventilation Facility site, best fulfills the Purpose and Need for the Program while balancing impacts on the natural and human environment. In reaching this decision, the FRA considered the physical and operational characteristics and potential environmental consequences associated with the alternatives.

To satisfy its responsibilities for the Program under Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations (36 C.F.R. Part 800), the FRA executed a legally binding Section 106 Programmatic Agreement (PA) on March 2, 2017, entitled *Project Programmatic Agreement Among the Federal Railroad Administration, Maryland State Historic Preservation Officer, National Railroad Passenger Corporation, and Preservation Maryland Regarding the Baltimore & Potomac Tunnel Project, Baltimore City, Maryland*.

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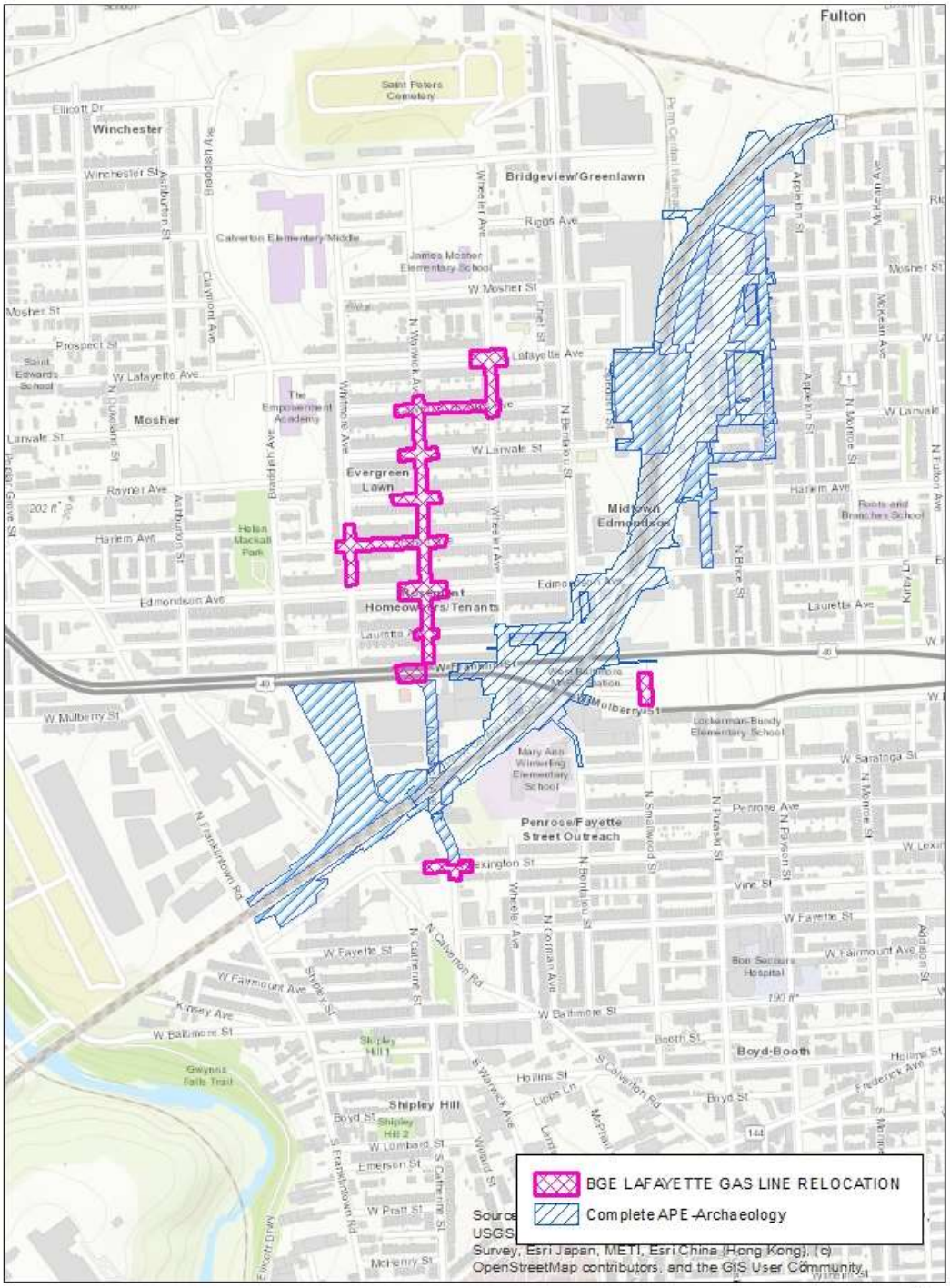

FIGURE 1
LAFAYETTE GAS LINE RELOCATION
Project Location and Expanded APE-Archaeology

The Program PA documents the detailed compliance process agreed upon by the signatories and invited signatories—the FRA, Amtrak, the Maryland State Historic Preservation Officer (Maryland Historical Trust or MHT), and Preservation Maryland—to satisfy FRA's responsibilities under Section 106 and to resolve adverse effects on historic properties in accordance with Section 106 for the Program. In accordance with the Program PA, Amtrak, in consultation with the signatories and other consulting parties, is required to identify and assess Program effects on archaeological historic properties.

In accordance with Program PA stipulations VI.B, VI.C.1, and VI.C.2, WSP completed a supplemental Phase IA archaeological study to determine the sensitivity for the presence of precontact and historic archaeological resources in the APE-Archaeology for the Selected Alternative for the Program (Shellenhamer and Ward 2023). In addition, the supplemental Phase IA study included recommendations for further survey to identify archaeological resources in the APE-Archaeology. The supplemental Phase IA archaeological study was submitted to the MHT and the consulting parties for review on October 19, 2023. In an email dated November 20, 2023, the MHT concurred with the report's findings and recommendations for the completion of a geomorphology study in the vicinity of the South Portal Approach and a Phase IB/II archaeological study in the defined section of the proposed IVF.

Since the submission of the supplemental Phase IA archaeological study, the Program design continues to advance, and certain new elements that require ground-disturbing activities extend outside the previously defined APE-Archaeology. WSP completed this addendum to the supplemental Phase IA archaeological study to determine the sensitivity for the presence of precontact and historic archaeological resources in the expanded APE-Archaeology located in the vicinity of the South Portal Approach, described below (see Figure 1; Figure 2).

WSP has prepared a prior addendum to the supplemental Phase IA archaeological study for the Program in Baltimore, Maryland. This addendum, Addendum 1, assessed the archaeological sensitivity of additional areas that had been added to the Program LOD since the completion of the supplemental Phase IA archaeological study. The focus of the Addendum 1 report concerned the construction of belowground utilities located outside the Program's previously defined APE-Archaeology in the vicinity of the Intermediate Ventilation Facility. For the purpose of Addendum 1 to the supplemental Phase IA archaeological study, the LOD were expanded in the vicinity of the proposed Intermediate Ventilation Facility by approximately two acres along North Avenue, Jordan Street, and Ducatel Street. Due to the extent of previous ground disturbance, WSP assessed that there is a low potential for the presence of intact archaeological resources. No further archaeological survey was recommended for this earlier expanded APE-Archaeology, which will not be discussed further during the current evaluation.

B. UPDATE TO AREA OF POTENTIAL EFFECTS

During the supplemental Phase IA archaeological study, the APE-Archaeology was defined as approximately 150 acres comprising discontinuous areas of the proposed APE, in which Program activities include open-cut excavation, construction staging areas, temporary access roads, and utility and stormwater management sites (Shellenhamer and Ward 2023). The new area of APE LOD not included in the prior evaluation, includes approximately 7.5 acres along Wheeler, Warwick, and Whitmore Avenues (see Figure 1). For a summary of the Program description, please refer to Chapters I and II of the supplemental Phase IA archaeological study report (Shellenhamer and Ward 2023). The APE within the roadway right-of-way (ROW) surrounding the South Portal

Approach proposed location will be expanded for gas line utility relocations. The proposed streets in the expanded LOD include the following.

- Lafayette Avenue: Wheeler Avenue intersection – Gas Line Relocation.
- Carlton Heights Avenue: Wheeler to Warwick Avenues – Gas Line Relocation.
- Warwick Avenue Lafayette Avenue to West Franklin Street – Gas Line Relocation.
- Arunah Avenue: Wheeler to Whitmore Avenue – Gas Line Relocation.
- Whitmore Avenue: Arunah Avenue Intersection – Gas Line Relocation.
- North Smallwood Street: West Franklin to West Mulberry Streets) – Gas Line Relocation.
- West Franklin Street: West of North Warwick – Gas Line Relocation

The following Program components consist of underground utility work and is anticipated to result in relatively shallow construction related impacts, within approximately four (4) feet below the current paved roadway surface. After the utilities have been installed, the Program will restore the roadway to at least the existing condition, if not better, and all parking and access will remain. This repair work may include paving streets, curb and gutter repairs/improvements, and sidewalk repairs; however, there will be no effect on above ground historic properties. These areas where additional ground-disturbing activities are now proposed constitute the expanded APE-Archaeology for this addendum report.

A. PERSONNEL

The Principal Investigator for the addendum study was Henry Ward (RPA 12205) who served as Project Manager (see Appendix A). Historical research and GIS mapping was carried out by Mr. Ward with support from GIS Specialist Ron Bruno. Mr. Ward prepared this document with assistance from Mr. Greg Katz (RPA 15888). Mr. Ward and Mr. Katz meet the standards set out in the Secretary of the Interior's Professional Qualification Standards for Archaeology (48 Federal Register 44738-44739, 36 C.F.R. Part 61) (United States Department of the Interior 1983).

FIGURE 2
LAFAYETTE GAS LINE RELOCATION
Project Location and Expanded APE-Archaeology

METHODOLOGY

This addendum to the supplemental Phase IA archaeological study serves to examine the expanded APE-Archaeology, which incorporates the expanded LOD that has been identified as the design of the Program has progressed. The study assesses the sensitivity for the presence of significant precontact and/or historic archaeological historic properties in the expanded APE-Archaeology and provides recommendations for further survey, if appropriate.

A. DOCUMENTARY RESEARCH

As part of the supplemental Phase IA archaeological study, research was conducted to establish precontact and historic contexts for the APE-Archaeology and to determine the existence of any previously recorded archaeological sites or historic properties in or adjacent to the APE-Archaeology. Files available through the MHT's Cultural Resource Information System (Medusa) were checked for the presence of recorded archaeological sites and historic properties within a 1.6-kilometer (1-mile) radius around the APE-Archaeology. Additional background research for this addendum consisted of a review of pertinent primary and secondary sources, including land records, historical maps and atlases, and local and county histories available online and at the Maryland State Archives in Annapolis. Previous survey reports for archaeological investigations conducted in or near the APE-Archaeology were also obtained from the MHT Library, including Shellenhamer and Kodlick (2015), Ward et al. (2006), and Ward et al. (2013). Additional archival research was carried out at the Library of Congress in Washington, DC, and the Sheridan Libraries at Johns Hopkins University in Baltimore. The review of historical maps was a key component of the analysis of historic archaeological potential.

This report does not include a historic context. The goal of this study was not to develop a historical and cultural synthesis of the APE-Archaeology but to provide an addendum planning document as the Program design advances. The reader is referred to the historical synthesis of the entire Program in WSP's supplemental Phase IA archaeological study (Shellenhamer and Ward 2023).

B. GIS METHODS AND TOPOGRAPHIC ANALYSIS

In the 2023 supplemental Phase IA assessment for the Frederick Douglass Tunnel Program, archaeologists recommended a Phase IB archaeological survey of a portion of the original APE-Archaeology in the South Portal area (Shellenhamer and Ward 2023). The area was assessed as having a moderate to high sensitivity for the presence of deeply buried precontact and historic archaeological resources. During urban growth in the late nineteenth century, as well as railroad construction, small steam valleys in this area were covered in fill and the surrounding landscape was leveled.

The area was largely rural in the years leading up to the early nineteenth century and became increasingly a patchwork of rural countryside and urban residential development (construction of rowhouses) in the second and third quarters of the nineteenth century (Shellenhamer and Ward 2023). Archaeological potential in these deeply buried areas ends circa 1900 as the filling and leveling of the landscape was completed.

Near surface (current grade) archaeological potential was described as moderate for the area of the expanded APE-Archaeology for the Lafayette Gas Line Relocation east of the current railroad

corridor. Although comparable geotechnical/archaeological data was not available for the expanded APE-Archaeology west of the railroad, there are some basic similarities in the topographic setting and historic land development. Archaeological potential in this area (at this near-surface grade) is principally for archaeological deposits in rear yards of houses (Shellenhamer and Ward 2023). Archaeological potential in these near-surface contexts continues into the middle of the twentieth century. The neighborhood was known as Monroe-Riggs in the past and is known as the Midtown Edmondson neighborhood today. Industrial development expanded in the 1870s and 1880s alongside railroad development and expansion of the road network.

The community had a sizeable African American population in the nineteenth century and has maintained a sizeable African American population into the present-day. In the nineteenth century, new and established African American families alike found themselves settling in a horseshoe pattern around the central city with "Old West Baltimore" forming the west side of this horseshoe. Segregation restricted the areas where they could settle to the blocks south of North Avenue, west of Pennsylvania Avenue, and east of Fulton Avenue. In the last quarter of the nineteenth century, German immigrants became a substantial part of the Monroe-Riggs community. The neighborhood experienced a variety of changes over the course of the twentieth century. Information on these changes can be found in the Supplemental Phase IA study (Shellenhamer and Ward 2023).

C. REVIEW OF GEOTECHNICAL DATA

As the expanded APE-Archaeology for the Lafayette Gas Line Relocation was only recently added to the Program, there is no Program-related geotechnical data in the direct vicinity of the area in question. Phase IB archaeological testing, utilizing geotechnical borings, on the South Portal and Approach on the east side of the existing rail corridor was conducted as part of a prior evaluation. However, these borings are too far removed from the current expanded-APE Archaeology west of the railroad to provide more than general interpretations included in the discussion below.

II. ENVIRONMENTAL SETTING

A. PHYSIOGRAPHY AND GEOLOGY

The expanded APE-Archaeology at the South Portal Approach is in the Piedmont Plateau Province (Figure 3). The Piedmont Plateau Province is an area of varied topography, ranging from lowlands to ridges of moderate altitude and relief. The province is underlain by metamorphic and igneous rocks that range from Precambrian to Paleozoic in age. These rocks have been sheared, fractured, and folded by tectonic activity. The Fall Line, which is where the Piedmont Plateau Province descends steeply to the Coastal Plain, runs along the boundary for the Maryland Archaeology Research Units 7 and 14 (Figure 4). At the point where rivers and streams cross the Fall Line, falls and rapids are typically encountered.

The expanded APE-Archaeology for the Lafayette Gas Line Relocation lies at the interface between the Potomac Group (Kp) to the north and James Run Gneiss formations to the south. The Potomac Group consists of inter-bedded quartzose gravels, argillaceous sands, and white, dark gray, and multicolored silts and clays. These deposits date to the Cretaceous era. Overall, the Potomac Group reaches a thickness of 0 to 240 meters (0 to 800 feet).

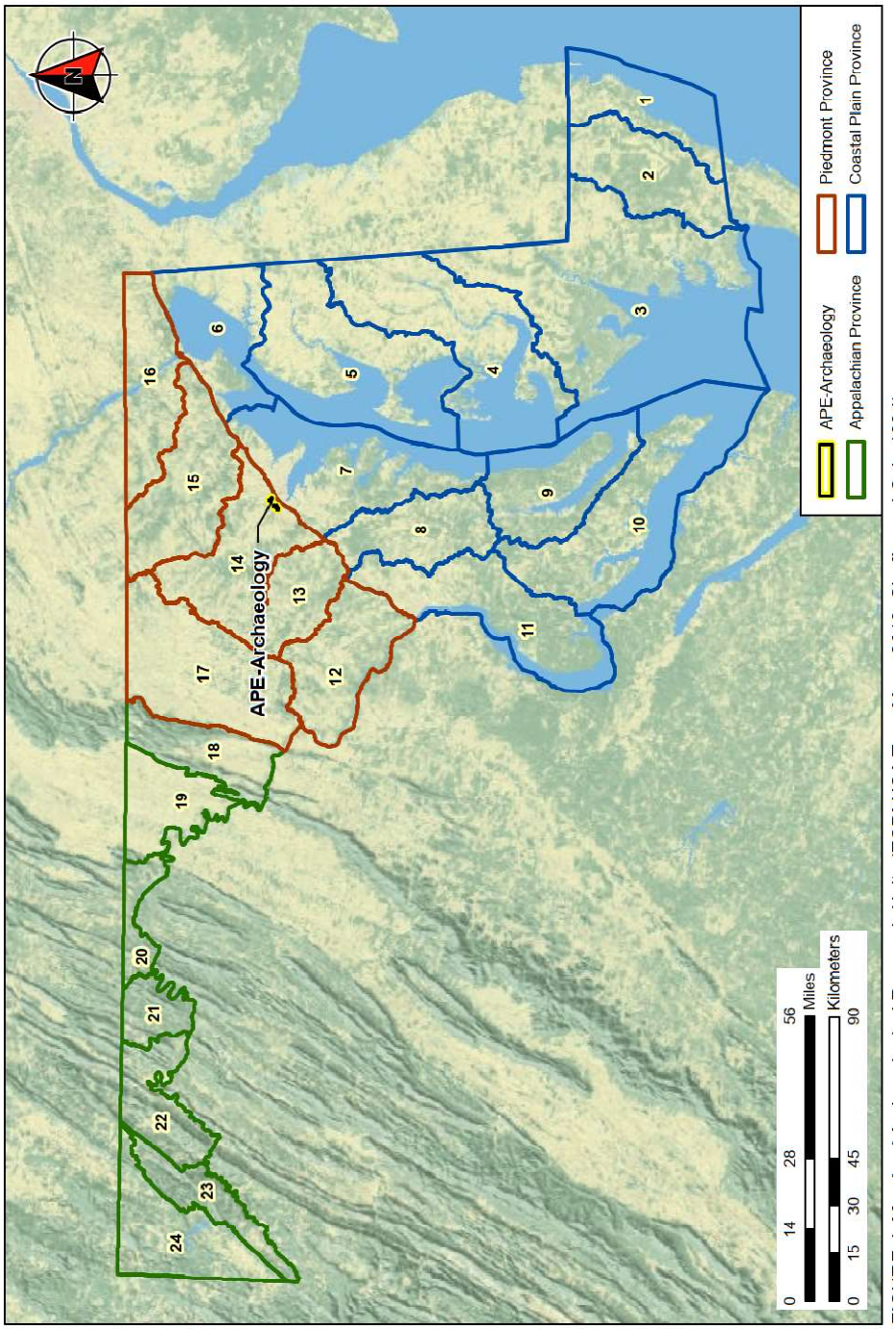

FIGURE 3
LAFAYETTE GAS LINE RELOCATION
Maryland Archaeological Research Units (ESRI USA Topo Maps 2019; Shaffer and Cole 1994)

B. SOILS

United States Department of Agriculture (USDA) soil mapping for Baltimore City places the expanded APE-Archaeology at the South Portal Approach predominately within the Urban Land - Sassafras Association (31UB), Urban Land – Keyport Associations (16UB) and Galestown – Urban Land Complex (11UB) (Levin and Griffin 1998; United States Department of Agriculture-Natural Resources Conservation Service [USDA-NRCS] 2021). Soils mapping is shown in Figure 4.

Urban Land Association soils are in nearly level to moderately sloping areas of urban settings where more than 80 percent of the surface is covered by asphalt, concrete, buildings, or other impervious surfaces. This soil association represents approximately 20 percent of the land area in the city. Urban Land can be identified on all landscape positions of the Coastal Plain and the Piedmont Plateau and generally ranges from 2 to more than 1,000 acres in size. Typically, large areas are mostly composed of miscellaneous artificial fill. In some areas, several feet of fill have been placed over streams, swamps, floodplains, and tidal marshes and are now almost completely covered by roads, buildings, or other structures.

Urban Land - Sassafras Association soils are very deep and excessively to well-drained soils that overlie sandy and/or gravelly sediments on the uplands of the city's Coastal Plain. This association consists of 40 percent Urban Land, 15 percent Joppa soils, 10 percent Sassafras soils, and 35 percent minor soils. Joppa soils are excessively well drained, very deep, gravelly soils. Sassafras soils are very deep, well-drained, loamy soils. Both are generally found on rolling or hilly dissected sideslopes. The minor soils in this association include somewhat excessively drained Brandywine and Manot soils on steep sideslopes near major drainages; well-drained Chester soils on gentle slopes near drainages; moderately well-drained Mattapex, Beltsville, and Woodstown soils in upland depressions; Udorthents; and fluvents.

C. HYDROLOGY

The expanded APE-Archaeology for the South Portal Approach is in the Gwynns Falls watershed. Until the mid-nineteenth century, Gwynn Run, a tributary of the Gwynns Falls, was located south of the APE-Archaeology. Two branches of Gwynn Run extended north from the approximate location of present-day West Lexington Street, flanking the expanded APE-Archaeology to both the east and the west. The major segments of the expanded APE, along Wheeler, Warwick and Whitmore Avenues would have been located on the original elevated landform between these two tributary streams. The minor gas line relocation areas to the south, along West Lexington Avenue and again at North Smallwood, would have been located much closer to the stream channels.

The Gwynns Falls stream is 24.9 miles (40.1 kilometers) in length (Baltimore County n.d.b.). Its headwaters originate near Reisterstown in Baltimore County and empties into the Middle Branch of the Patapsco River. The Patapsco River has a watershed of 1,760 square kilometers (679 square miles). The last 16 kilometers (10 miles) of the river is a tidal estuary inlet of Chesapeake Bay. The tidal area of the river is composed of the Northwest Harbor and Middle Branch of the Patapsco River (Baltimore County n.d.a).

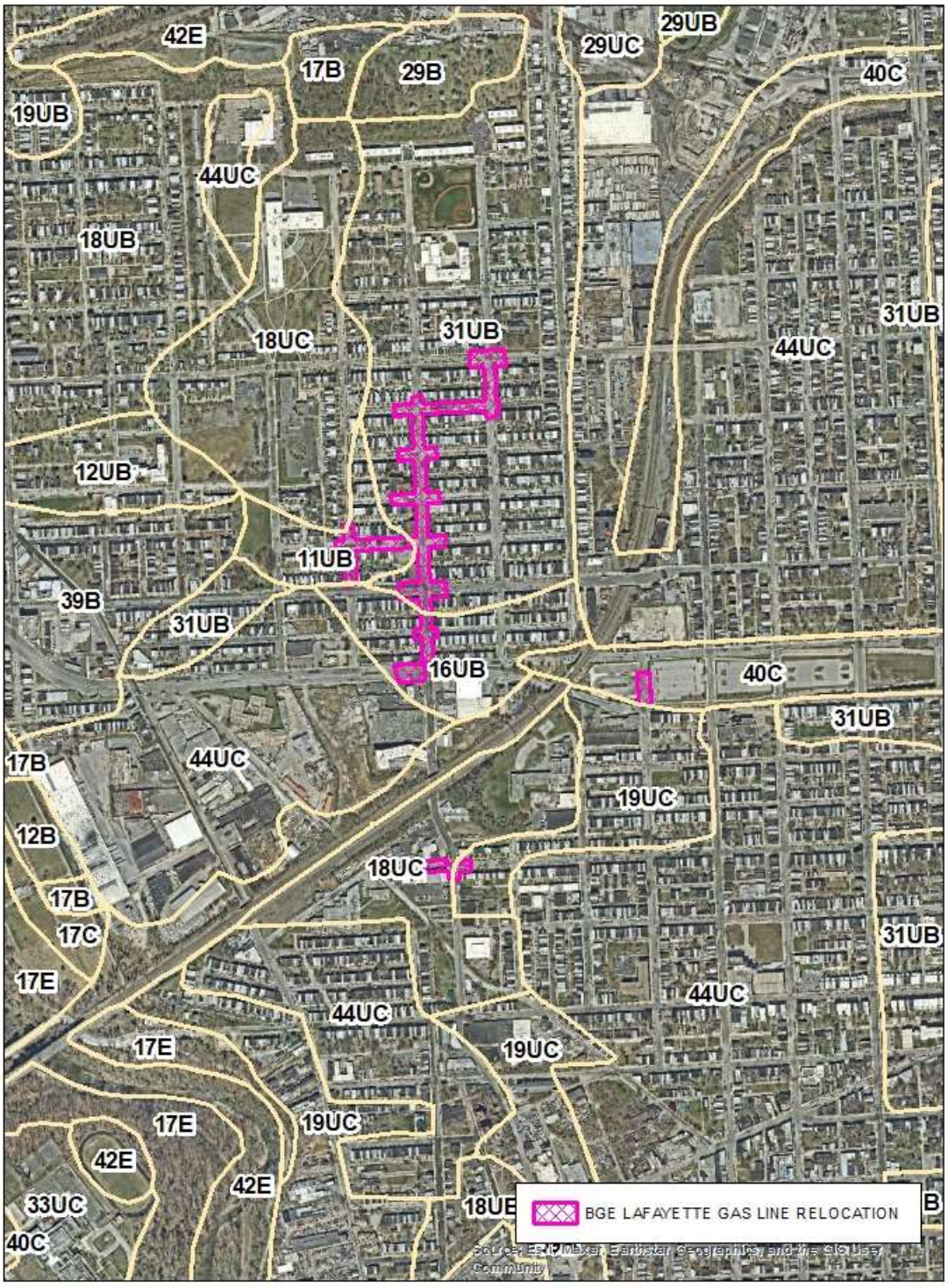

FIGURE 4
LAFAYETTE GAS LINE RELOCATION
Soils Series (ESRI World Imagery 2020: NRCS 2020)

III. PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS AND HISTORIC PROPERTIES

A. PREVIOUS ARCHAEOLOGICAL STUDIES

Review of cultural resources survey data maintained by the MHT on Medusa revealed that 13 previous archaeological studies have been conducted within a 1.6-kilometer (1-mile) radius of the APE-Archaeology of the full Program (Figure 6; Table 1). Of those, five studies were located close to or within the expanded APE-Archaeology for the Lafayette Gas Line Relocation.

TABLE 1 PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS WITHIN 1.6-KILOMETER (1-MILE) RADIUS OF PROGRAM APE: ARCHAEOLOGY

STUDY	No.	REFERENCE
Phase I Reconnaissance Survey of the Archeological Resources in the Proposed I-595 Corridor Between I-95 and I-170, Baltimore City, Maryland	BC 6	Dinnel 1982
Preliminary Reconnaissance Survey of the Archaeological Resources in the Proposed I-70 Alignment Through Leakin and Gwynns Falls Park	BC 26	Harrison 1977
Orchard Street Church Archeological Monitoring	BC 33	Weber 1984a
Phase I/Phase II Archeological Reconnaissance Survey for the Gwynns Falls Sewer Interceptor, Baltimore, Maryland	BC34C	Weber 1984b
Phase I Archeological Survey of the Proposed 3.03-mile Phase 2 Gwynn Fall's Pathway	BC 126	Hill 2000
Stage 1 Phase IB Archeology Technical Report, Red Line Light Rail Transit Project, City of Baltimore and Baltimore County, Maryland	BC 184	Ward et al 2013*
Phase I Archeological Survey Associated with the Replacement of the Edmondson Avenue Bridge in the City of Baltimore [note: no location data available on Medusa, not shown on Figure 6]	BC 185	Shellenhamer and Kodlick 2015*
Stage 1 Phase IB Archeology Interim Technical Report, Red Line Light Rail Transit Project, City of Baltimore, and Baltimore County, Maryland	BC 194	Ward et al 2015*
Phase IA Archeological Study, B&P Tunnel Project, Baltimore, Maryland [note: no location data available on Medusa, not shown on Figure 5]	BC 195	Shellenhamer and Kodlick 2015*
Archaeological Monitoring Report for the [redacted]		2020
Supplemental Phase IA Archaeological Study Baltimore & Potomac Tunnel Replacement Program, Baltimore, Maryland [no location data available on Medusa, not shown on Figure 5]	Number Pending	Shellenhamer and Ward 2023*

* Study includes portions of the APE-Archaeology †University of Maryland, Baltimore

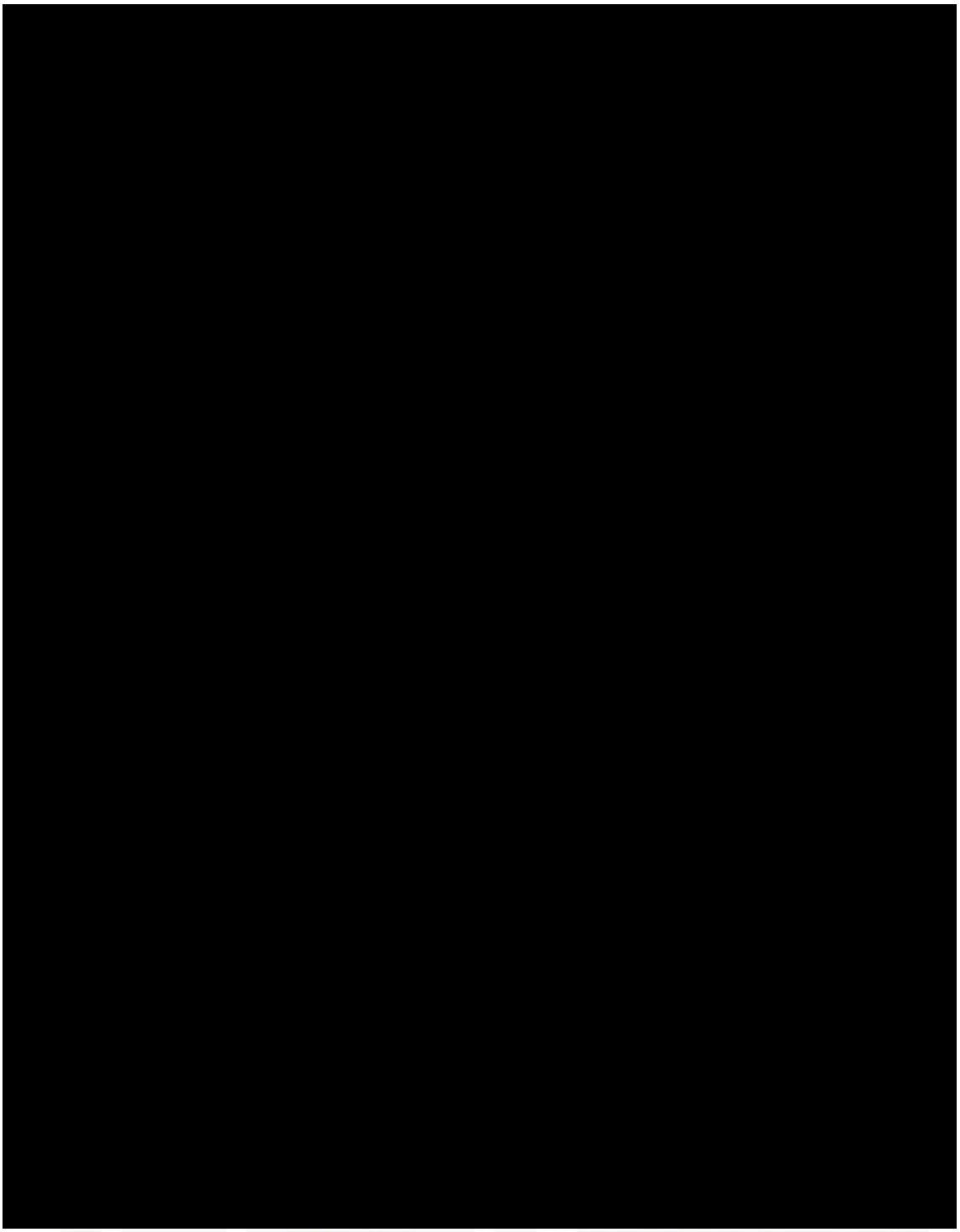

FIGURE 5
LAFAYETTE GAS LINE RELOCATION
Archaeolgical Sites and Survey Areas
MHT Medusa 09/05/2024

0 0.1 0.2 0.4 0.6 0.8 Miles

N W E S

An initial Phase IA archaeological study for the B&P Tunnel Replacement Program was completed in 2015 in support of the DEIS. At that time, several alignment alternatives were under consideration. As designs had not been sufficiently developed at the time of the Phase IA study, the APE at that time was limited to the centerline of the alignments of each of the design alternatives. Given their cumulative linear extent and the stage of the Program at the time of the survey, it was deemed prudent to conduct an archaeological assessment study to acquire a comprehensive understanding of the archaeological sensitivity of all the proposed alternatives. The high-level survey was also performed to provide information that could assist with planning activities. The Phase IA study concluded that although large portions of the alignment alternatives have been disturbed, potential remained for the presence of both precontact and historic archaeological sites within the alignments of each of the build alternatives. The study recommended that a supplemental Phase IA archaeological study be conducted once the Preferred Alternative was determined, and the extent of anticipated ground-disturbing activities ascertained.

In the 2023 supplemental Phase IA assessment for the Frederick Douglass Tunnel Program, archaeologists recommended a Phase IB archaeological survey of a portion of the original APE-Archaeology in the South Portal area utilizing geotechnical soil borings and geoarchaeological analysis (Shellenhamer and Ward 2023). The area was assessed as having a moderate to high sensitivity for the presence of deeply buried precontact and historic archaeological resources. During urban growth in the late nineteenth century, as well as railroad construction, small steam valleys in this area were covered in fill and the surrounding landscape was leveled.

B. PREVIOUSLY IDENTIFIED ARCHAEOLOGICAL SITES

According to the archaeological site files maintained by the MHT, no previously recorded archaeological sites are situated within the expanded APE-Archaeology for the Lafayette Gas Line Relocation. Five sites are present within a 1.6-kilometer (1-mile) radius (Table 2). Four of the sites date from the eighteenth to twentieth centuries. [redacted] is a Late 18th-Early 20th mill site. [redacted], is a Late 19th century rowhouse associated with the famous local author and journalist. [redacted] during the Late 19th through Mid-20th centuries. The other two sites represent surface artifact scatters. Dinnel I contained a concentration of the 19th-20th century artifacts, potentially associated with a dump or former structure. AOS # 1 contained scattered 19th-20th century artifacts, but also contained prehistoric lithic scatter. None of the five recorded archaeological sites has been evaluated for the National Register of Historic Places (NRHP).

TABLE 2 ARCHAEOLOGICAL SITES WITHIN 1.6-KILOMETER (1-MILE) RADIUS OF EXPANDED APE: ARCHAEOLOGY AT LAFAYETTE GAS LINE RELOCATION

SITE NO.	NAME	PERIOD	DESCRIPTION	NRHP STATUS
[redacted]				

C. PREVIOUSLY IDENTIFIED HISTORIC ARCHITECTURAL RESOURCES

A review of the Maryland Inventory of Historic Properties (MIHP) forms on file at the MHT indicates that the bulk of the expanded APE-Archaeology at the South Portal lies within the Edmondson Avenue Historic District (B-5187). The small segment at West Lexington Street falls into both the Bon Secours (B-5117) and Industrial Warehouse Historic (B-D5116) Districts (Figure 6). The North Smallwood Street APE falls outside any other designated historic district. The Edmondson Avenue Historic District was listed on the NRHP on December 12, 2010, and consists of several hundred structures predominately residential in character, apart from several early 20th century religious buildings and scattered industrial and commercial structures. The Industrial Warehouse Historic District has been evaluated as not eligible for the NRHP.

IV. STUDY RESULTS

A. CARTOGRAPHIC REVIEW

Maps of Baltimore spanning the nineteenth and early twentieth centuries were selected to understand the history of development in the area and to assess the APE's archaeological sensitivity. For the purposes of this study, the selected historical maps were imported and georeferenced into GIS. The locations of buildings, roads, and other improvements are approximate because historical maps are imprecise relative to modern coordinate systems; however, the historical information presented on the maps is useful in identifying the likelihood that historic archaeological resources may be present.

Maps consulted include those listed below, selected based on their levels of detail, their estimated level of accuracy, their compatibility with one another and modern landmarks, and relevance to the developmental history in the APE-Archaeology.

- J.C. Sidney *Map of the City and County of Baltimore, Maryland Baltimore City Atlas*, (1851)
- *USGS (United States Geological Survey) Topographic Quadrangle - Baltimore* (USGS 1894)
- *Atlas of the City of Baltimore, Maryland* (Topographical Survey Commission 1914)

The cartographic review indicates that the area comprising the expanded APE-Archaeology for the Lafayette Gas Line Relocation consisted of relatively sparse development on the western outskirts of the city before the mid-nineteenth century. The 1857 J.C. Sidney *Map of the City and County of Baltimore, Maryland (*Figure 7) only shows the original alignment of Edmondson Avenue, extending west out in the county. While there are numerous structures shown to the west of Gwynns Run, there only appears to be a single structure "Poplar Grove" shown within the area of the expanded APE. The small areas along West Lexington Avenue and North Smallwood Street do not show any structures at this time but, they do confirm that these areas were in close proximity to the original Gwynns Run waterway. The railroad alignment, which cuts diagonally across the area, was not complete by the time of this map.

The 1894 United States Geological Survey – Baltimore Topographic Quadrangle (Figure 8), shows continued development of transportation infrastructure, with the construction of the first railroad alignment to the south, and the extension of West Lafayette Avenue and West Franklin Street out to the west. The track alignment run along the elevated landform between the main

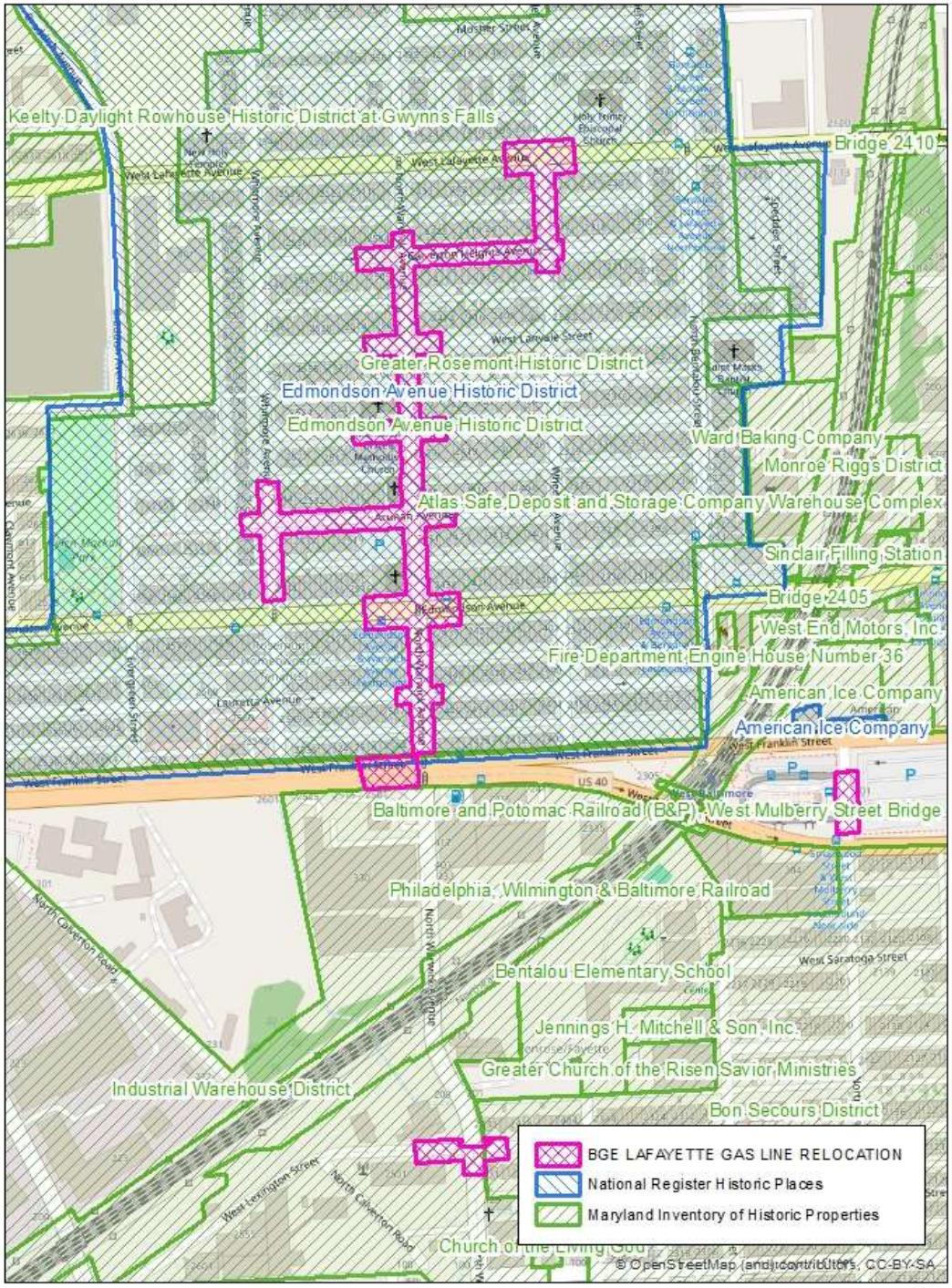

FIGURE 6
LAFAYETTE GAS LINE RELOCATION
Historic Architectural Resources
MHT Medusa 09/05/2024

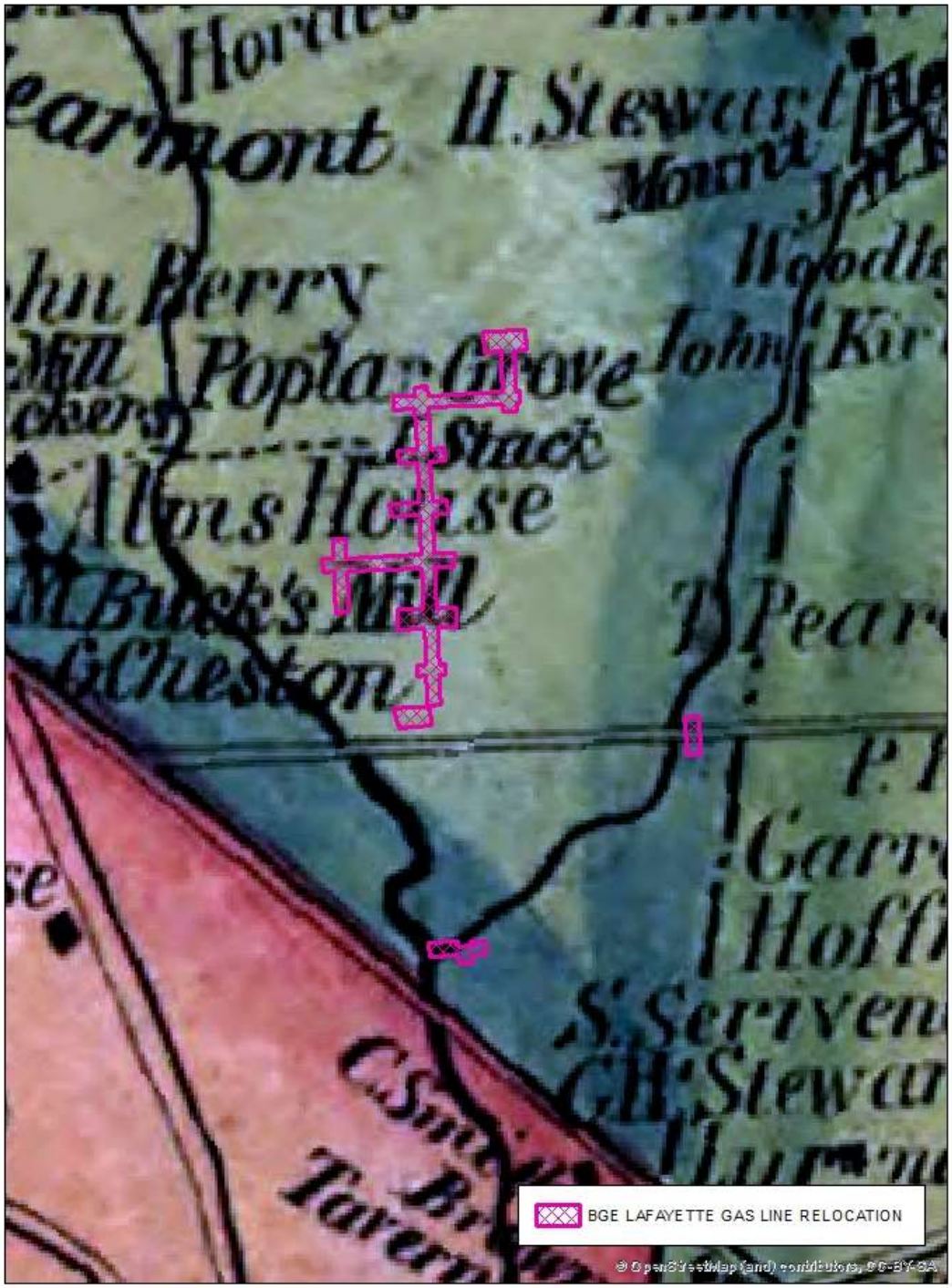

FIGURE 7
LAFAYETTE GAS LINE RELOCATION
1851 Map of the City and County of Baltimore

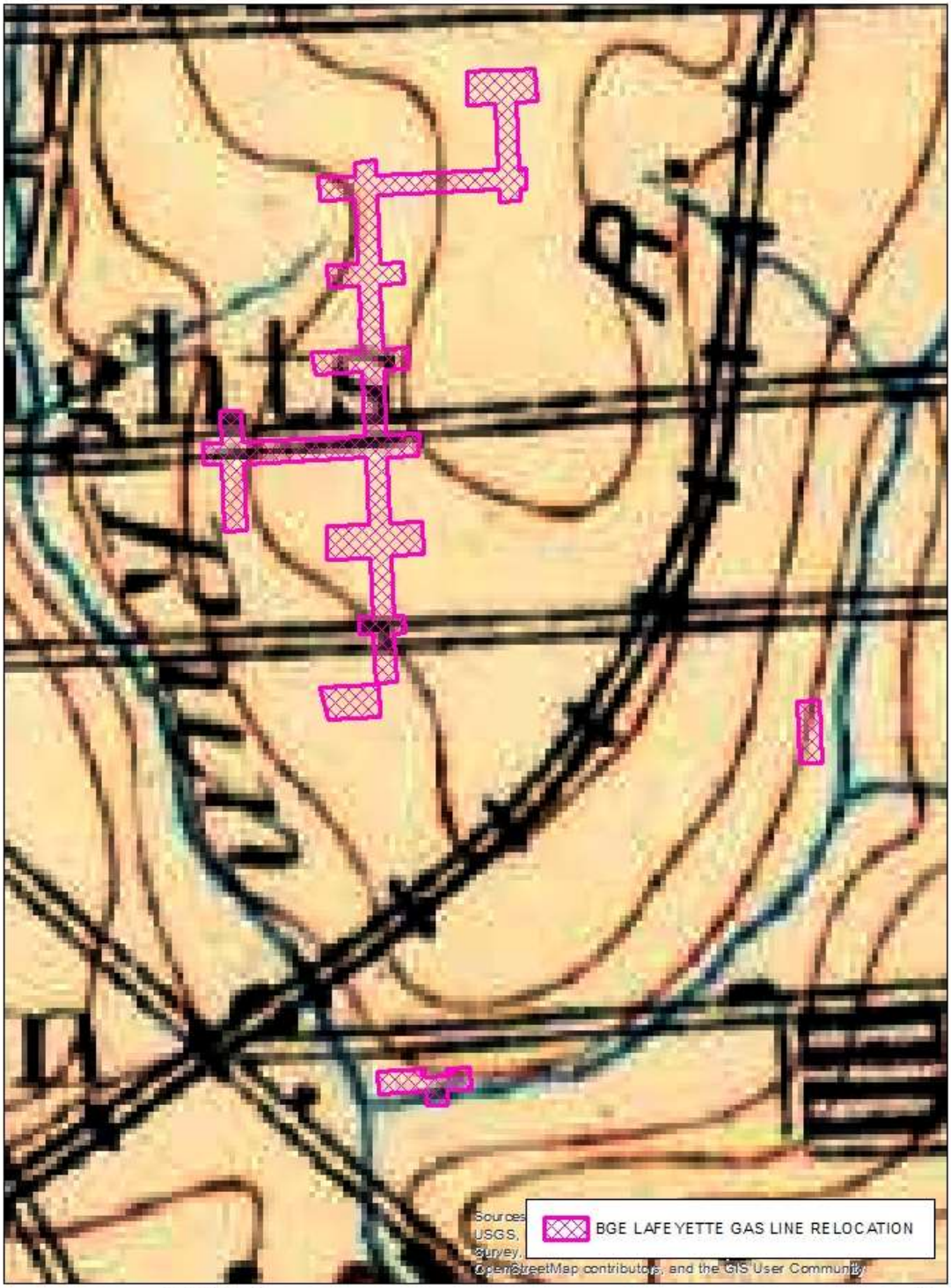

FIGURE 10
LAFEYETTE GAS LINE RELOCATATION
USGS 1894 Baltimopre Topgraphic Quandrangle

branch of Gwynns Run and a secondary branch to the waterway that runs to the east. While early segments of the street grid and a few early structures are shown to the north, west and south of the expanded APE-Archaeology, no evident structures are shown in the area at that time, including in the earlier noted location of "Poplar Grove."

By the early 20th century, the pace of development in the area has begun to increase. According to the 1914 City of Baltimore Atlas (Figure 9), the additional street grid had been laid out, with the north-south alignments of Wheeler, Warwick, and Whitmore Avenues in place. However, most of the development by this period was focused to the east of the expanded APE-Archaeology. There are no structures shown along the Wheeler or Warwick Avenues north of Lanvale Street. There are also no structures shown east of Warwick Avenue and north of Arunah Avenue. Contiguous blocks of rowhouse structures are shown during this period east of Warwick, along Harlem, Arunah and Franklin Avenues. Development along both sides of Franklin Street continued west of Wheeler Avenue. The development along these eastern blocks formed the foundation of what was to become the Edmondson Avenue Historic District. The Baltimore and Potomac Railroad track network to the south of the area had been significantly expanded by this time.

Industrial development expanded in the 1870s and 1880s alongside railroad development and expansion of the road network. The community had a sizeable African American population in the nineteenth century and has maintained a sizeable African American population into the present-day. In the nineteenth century, new and established African American families alike found themselves settling in a horseshoe pattern around the central city with "Old West Baltimore" forming the west side of this horseshoe. Segregation restricted the areas where they could settle to the blocks south of North Avenue, west of Pennsylvania Avenue, and east of Fulton Avenue. In the last quarter of the nineteenth century, German immigrants became a substantial part of the Monroe-Riggs community. The neighborhood experienced a variety of changes over the course of the twentieth century. Information on these changes can be found in the Supplemental Phase IA study (Shellenhamer and Ward 2023).

B. SENSITIVITY ASSESSMENT

Archaeological sensitivity is ranked as high, moderate, or low based on the correlation of a location with various favorable environmental characteristics and documented factors. From an environmental perspective, the factors contributing to precontact archaeological sensitivity often also apply to early historic archaeological sensitivity.

In general, analysis of precontact site sensitivity for the Program considers landscape characteristics in or near the APE-Archaeology that are associated with documented precontact sites in the region and locally. Variables can include topography, proximity to water and resource catchment areas over time, soil characteristics, proximity to documented Native American trails or other areas of local and regional communication and exchange (e.g., navigable waterways), presence of natural landscape features (e.g., prominent ridges or hilltops), and proximity to lithic or clay source areas.

High-sensitivity zones for precontact archaeological resources include level to gently sloping, well-drained, upland areas within 500 feet of surface water or wetlands and areas within 500 feet of previously recorded archaeological sites. Moderate-sensitivity zones for precontact archaeological resources are generally more than 500 feet from a freshwater source and characterized by

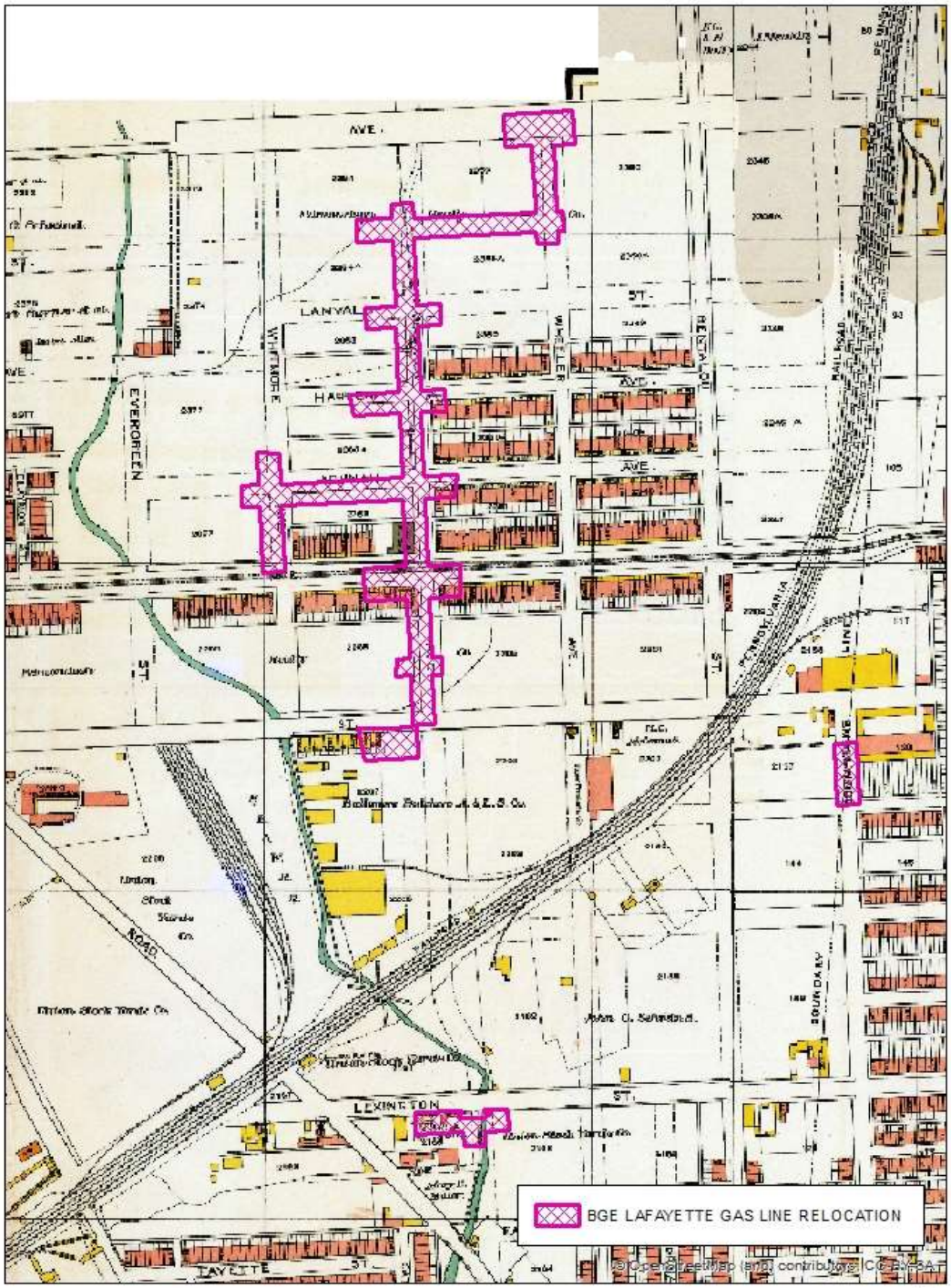

FIGURE 9
LAFAYETTE GAS LINE RELOCATION
1914 City of Baltimore Atlas

moderately sloping topography and/or somewhat poorly drained soils. Poorly drained soils and steeply sloping topography are negatively correlated with precontact habitation and indicate low sensitivity for precontact archaeological resources. Previous ground disturbance, such as that related to construction, ground clearing, and grading, also lowers the sensitivity for archaeological resources.

Historic site sensitivity depends on the relationship of the APE-Archaeology to local community development over time; historic transportation routes (e.g., roads, railroads, canals, rivers, etc.); the documentary record of residential, commercial, and institutional buildings; and the proximity to target historic resource areas (e.g., fall lines on rivers and streams where mills were established, quarry locations). Historic archaeological sensitivity is ranked as high in areas near the location of documented historic development and within 300 feet of early transportation routes and as low in areas with little record of historic land development. The presence of standing historic structures indicates a high probability for associated historic archaeological sites. Information obtained from cartographic evidence also contributes to assessments of historic archaeological sensitivity.

Although early historical maps do not depict historic structures with accuracy, nineteenth-century maps often record accurate details of settlement pattern, ownership, and occupation. The likelihood for historic archaeological resources to exist within the APE-Archaeology is high in areas that are in proximity to historic houses and outbuildings or in areas near early roads.

1. Landscape Modification

The analysis suggests that the landscape within the APE-Archaeology for the Lafayette Gas Line Relocation area was significantly modified over the last 120 years. Prior to the twentieth century, the portion of the APE-Archaeology extending from North Monroe Street southwest to beyond North Warwick Avenue was primarily undeveloped pastures and woodlots along the stream valley of the north branch of Gwynns Run.

Some grading and filling west of the stream occurred in the 1870s during the construction of the B&P Railroad while the landscape in the remainder of this portion of the APE-Archaeology remained intact. Native Americans likely traversed the stream valley prior to European colonization, and sites associated with their activities may be present. Although no precontact resources have been previously identified close to the expanded APE-Archaeology, resource procurement and habitation sites have been identified along other tributaries within Baltimore City, including the Gwynns Falls and Jones Falls.

Maps dating to the early and mid-nineteenth century depict several early roads extending through the APE-Archaeology. Although most do not show houses or other buildings along those roads, maps and atlases from that period do not provide a complete representation of all the homes and improvements that were present. The depiction of buildings on the historical maps indicates the possibility that additional development may have occurred in the stream valley prior to the 1870s. In the early twentieth century, significant modifications were made to the landscape as the stream valley of the north branch of Gwynns Run was filled with large quantities of transported soil. Once the stream valley was filled, the area was open for residential and commercial development. Ground disturbance related to construction was likely confined to the transported soil layers, particularly where the prior alteration of the landscape was most extensive. Over the course of the

twentieth century, development continued and extended further into this portion of the expanded APE-Archaeology.

As noted, the proposed gas line relocation will occur under existing paved roadways, which have already been significantly disturbed both by road construction as well as existing underground utilities. GIS based data is available for some of the existing utilities including: 1) Sanitary Water, 2) Storm Drains, and 3) Gas Lines. The extent of these existing utilities in the area of the proposed gas line relocation is shown in Figure 10. The network of sanitary sewer lines is the most extensive with existing sewer lines running along each portion of the roadways to be impacted by the gas line relocation (including the isolated areas of APE on West Lexington and North Smallwood). The distribution of existing storm drains is somewhat more limited; however, they extend along Wheeler Avenue running north of Franklin Street to West Lanvale Street. Existing storm drains are also present in the portions of the expanded APE-Archaeology along Franklin Street (west of Warwick Avenue) as well as the isolated areas of APE on West Lexington and North Smallwood Streets.

The distribution of existing gas lines is also extensive, running north-south on Wheeler and Warwick Avenues covering much of the proposed gas line relocation APE. Gas lines also run under the proposed gas relocation impact areas running east-west on Lafayette and Calverton Heights. Existing gas lines do not appear to be present on the limited east-west extensions of the LOD on West Lanvale Street and Harlem Avenue, as well as the more extensive east-west extension along Arunah Avenue and the limited north-south extension along Whitmore Avenue, as well as the north-south portion of Whitmore Avenue between Franklin Street and Arunah Avenue. There is an existing gas line along the APE on West Lexington Street, but not one in the segment along North Smallwood.

Based on the data of these existing subgrade utilities, the expanded APE-Archaeology associated with the proposed gas line relocation will occur within the roadways that already have been significantly disturbed by the previous construction, expansion, and upgrades to existing subsurface utilities. Most of these areas would have been impacted by two or three prior utility alignments, which would have resulted in overlapping area of soils disturbance with the roadways. Detail information on additional subsurface utilities including electrical and fiber, was not available at the time of this analysis, but additional impacts from the installation of these utilities would also have affected the integrity of the soils below the roadway.

2. Precontact Archaeological Site Sensitivity

As discussed in the supplemental Phase IA study report, the expanded APE-Archaeology at the South Portal was assessed as having a moderate to high sensitivity for the presence of precontact archaeological resources. The area in question was located on an elevated, well drained landform between two tributary streams of Gwynns Run. Although the geographical setting of this location near a confluence of two streams had been an attractive location for Native Americans prior to the period of European colonization, the development of the intensive development of the Monroe-Riggs neighborhood (later known as Midtown Edmondson) during the late nineteenth and twentieth centuries dramatically altered the former landscape and reduced the likelihood of the presence of intact precontact-period archaeological resources. Furthermore, the expanded APE-

Archaeology for the Lafayette Gas Line lies entirely within the road ROW, and these locations were subjected to successive ground-disturbing activities since their construction in the nineteenth century. The construction of underground utilities, installation and removal of streetcar rail systems, and annual road and utility maintenance resulted in further ground disturbance. It was previously noted there are limited areas of expanded APE-Archaeology along West Lexington Street and North Smallwood. In addition, as these smaller isolated areas would have been located directly adjacent to the prior stream channels, they would have been covered with significant amounts of fill that were used to fill in the stream valleys. Given the relatively shallow excavations associated with the gas line relocation (approximately four (4) feet below the current paved surface), Program related soil disturbance will not extend deep enough to reach any associated pre-contact archaeological resources.

3. Historic Archaeological Site Sensitivity

Archaeological potential for deeply buried areas ends circa 1900 as the filling and leveling of the landscape was completed. Near surface (current grade) archaeological potential was described as moderate. Archaeological potential in this area (at this near-surface grade) is principally for archaeological deposits in rear yards of houses (Shellenhamer and Ward 2023). Archaeological potential in these near-surface contexts continues into the middle of the twentieth century. The neighborhood was known as Monroe-Riggs in the past and now comprises the current neighborhoods of Evergreen Lawn and Rosemont Homeowners/Tenants neighborhoods. The area was largely rural in the years leading up to the early nineteenth century and became increasingly a patchwork of rural countryside and urban residential development (construction of rowhouses) in the second and third quarters of the nineteenth century (Shellenhamer and Ward 2023). As previously noted, all soil disturbance will occur within existing, well-established historic roadways. Given the relatively sparse early historic utilization of the area, the intensity of the mid-19th-20th century rowhouse neighborhood development, it is anticipated that there is a limited potential to impact any historic period archaeological resources.

As a result, the expanded APE-Archaeology at the South Portal associated with the Lafayette Gas Line Relocation is assessed as having a low sensitivity for historic archaeological resources.

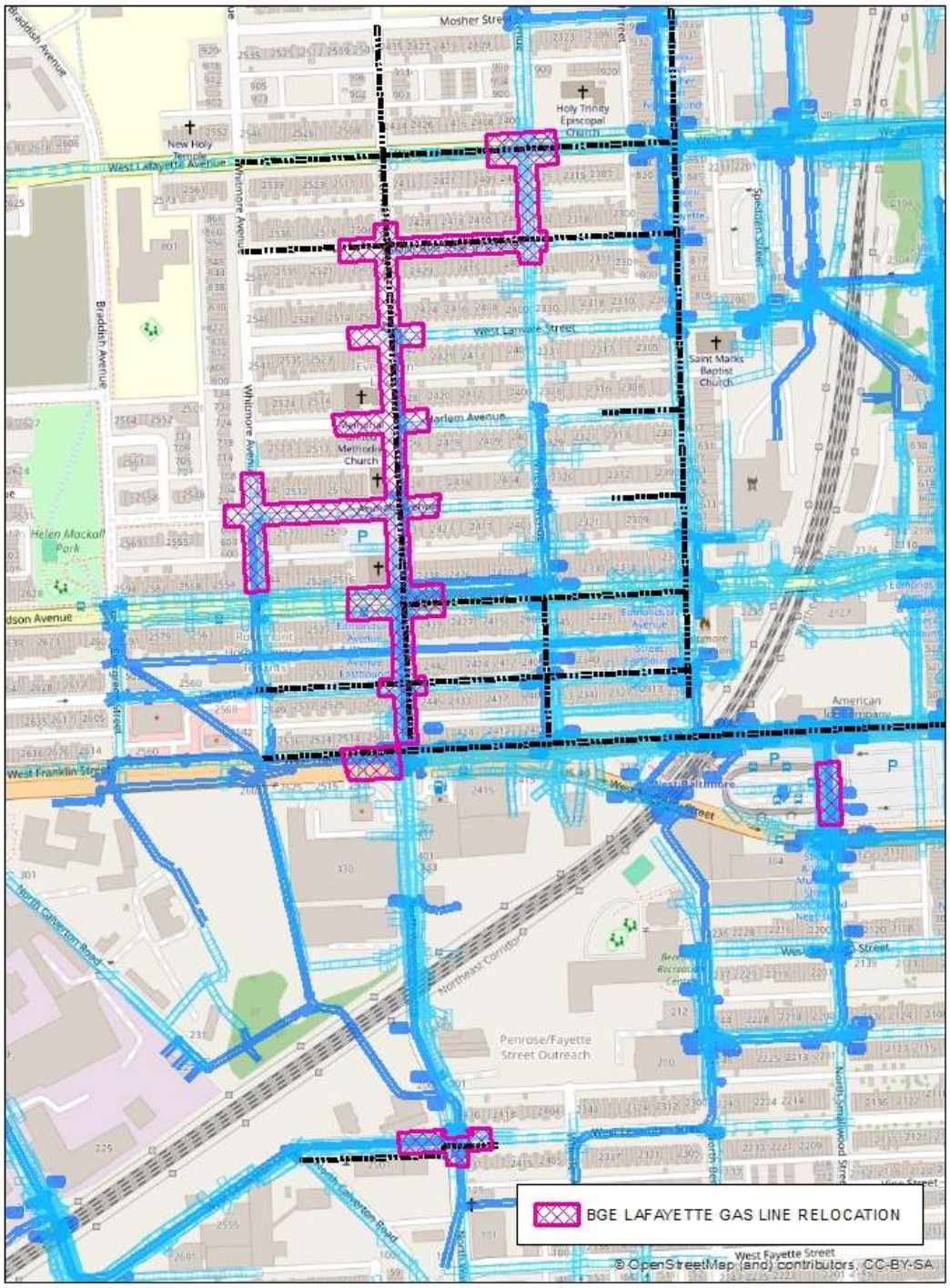

FIGURE 10
LAFAYETTE GAS LINE RELOCATION
Existing Underground Utilties

0 0.035 0.07 0.14 0.21 0.28 Miles

V. RECOMMENDATIONS

The review of available environmental and soil data, historical background research, and the results of the GIS topographical analysis suggests that there is a low sensitivity for encountering archaeological historic resources in the area in question. The prior modification of the landscape within the expanded APE-Archaeology in the vicinity of the gas line relocation resulted in substantial ground disturbance associated with urban development, transportation improvements, and construction of underground utilities. As a result of the extent of previous ground disturbance, there is a low potential for the presence of intact archaeological resources. No further archaeological study is recommended for the expanded APE-Archaeology associated with the Lafayette Gas Line Relocation.

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