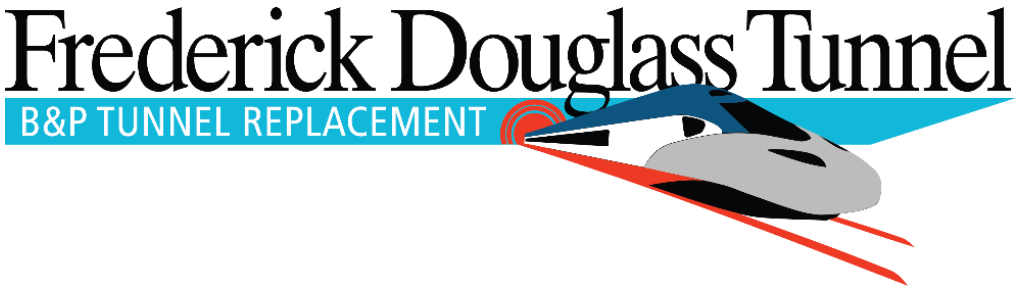


Frederick Douglass Tunnel Program

Historic Properties Construction Protection Plan

April 2025

TABLE OF CONTENTS

LIST OF FIGURES AND TABLES

FIGURES

TABLES

1.0 Introduction

1.1 Frederick Douglass Tunnel Program

To improve rail service and reliability on the Northeast Corridor (NEC), the Federal Railroad Administration (FRA) has funded engineering and environmental studies and design work for the National Railroad Passenger Corporation's (Amtrak) proposed replacement of the Baltimore & Potomac (B&P) Tunnel. Opened in 1873, the B&P Tunnel is one of the oldest structures on the NEC and has become a major bottleneck of rail traffic due to its tight curvature, resulting in train speed limitations, and the need for frequent repairs of its structural degradation. The 1.4-mile-long tunnel, located between Baltimore Penn Station and the West Baltimore Maryland Area Regional Commuter (MARC) Station, provides service to Amtrak, Maryland's MARC Commuter Rail passenger trains, and Norfolk Southern Railway.

The proposed Frederick Douglass Tunnel Program ("Program"), formerly called the B&P Tunnel Replacement Program, will extend four miles along the NEC from Baltimore Penn Station to the Gwynns Falls Bridge along a new curving alignment north of the present B&P Tunnel (see Figure 1). The major feature of the Program will be the construction of two new tunnel tubes, named in honor of Frederick Douglass, the late Maryland native, along with new roadway and railroad bridges, new rail systems and track, a new ADA-accessible West Baltimore MARC station, new north and south portals, three new ventilation facilities, modifications to the overhead power and signal structures, utilities, and other site work.

1.2 Purpose of the Historic Properties Construction Protection Plan

Amtrak developed this Historic Properties Construction Protection Plan (CPP) to guide Amtrak personnel and Program Contractors and Subcontractors on how to conduct construction activities in a manner that will protect historic properties. The CPP addresses all construction associated with the proposed Program, including, but not limited to: excavation and utility work; track laying; boring excavation by Tunnel Boring Machines (TBMs); construction of program bridges, West Baltimore MARC station, three ventilation facilities, retaining walls, and sound barriers; and associated demolition.

In accordance with this plan, Program Contractors and Subcontractors shall apply the protection measures in this CPP to historic properties located either within or within close proximity to the Program limits of disturbance, stockpile locations, construction staging areas, tunneling zones, and any other area in which Program activities may take place. The protection provisions of this document have been incorporated into the Program's technical specifications, which are cross referenced in this document.

Historic properties include buildings, structures (including bridges, portals, and catenary structures), districts, sites, objects, and archaeological resources that have been listed in or determined eligible for inclusion in the National Register of Historic Places (NRHP). The NRHP is the official federal list of properties recognized for their significance in American history, architecture, archaeology, engineering, and culture. Archaeological resources are the remains of past human activity and are usually below ground. They may be pre-contact—meaning they pre-date contact with European settlers—or may be from the post-contact period.

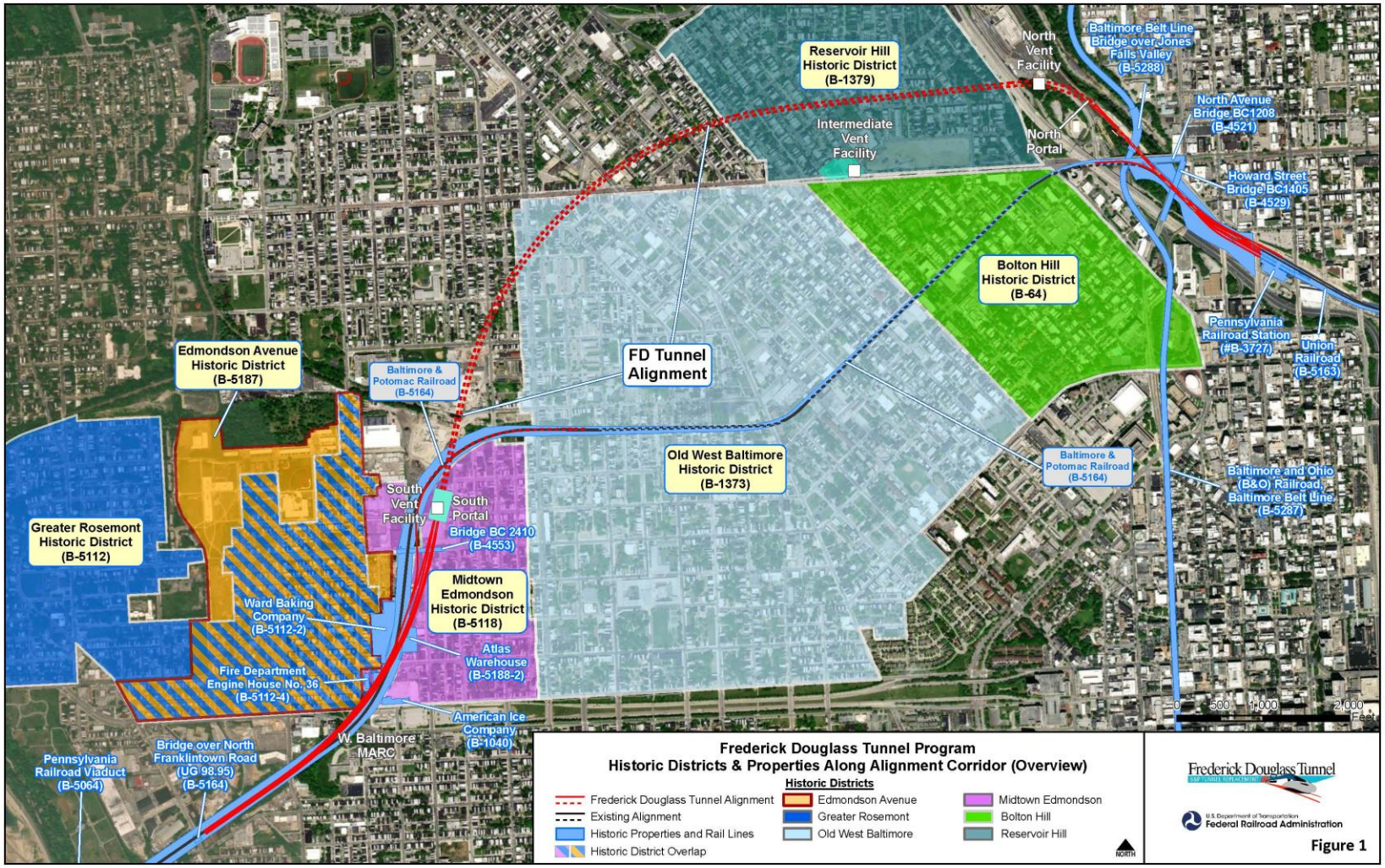


Figure 1: Historic Districts & Properties Along Alignment Corridor (Overview)

Protecting historic properties during Program construction and demolition activities (including excavation and tunneling) includes:

- Protection of the built environment within or near the construction or demolition site, including buildings, bridges, and other structures. As explained in Section 3 of this document, the area affected by the Program includes several historic districts, with most of the buildings within the historic districts considered historically significant.
- Protection of potential archaeological resources that may be located within the Program's Limits of Disturbance. Regardless of whether or not a particular area is considered historic, it may contain significant archaeological resources. Section 4 of this document provides an evaluation of the likelihood for various locations to contain archaeological resources and explains the steps necessary based on the site evaluation. In addition, Appendix A contains an *Unanticipated Discoveries Plan (UDP)* to explain the necessary steps to be taken if an archaeological resource is discovered during construction activities.

1.3 Cultural Resources Requirements

1.3.1 Federal Law

Section 106 of the **National Historic Preservation Act** of 1966, as amended, requires projects that receive federal funding or require federal permits, licenses, or other federal approvals, incorporate the necessary planning to avoid, minimize, or mitigate a project's adverse effects to historic properties. In accordance with Section 106, Amtrak and FRA determined the Program will have adverse effects on historic properties. Because of this, FRA implemented a legally binding Programmatic Agreement (PA), 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 Program, Baltimore City, Maryland*, which includes a detailed compliance process for mitigating the Program's impacts to historic properties. Stipulation V.D. of the PA requires development and implementation of this CPP.

It is important that all Contractors and their employees are aware of the locations of historic properties because unanticipated impacts may result from construction activities near historic properties. Historic properties' settings, which may include landscape features and hardscape, often contribute to their significance, and shall also be considered when making decisions about construction and protection methods. Amtrak is committed to avoiding adverse effects whenever possible, and the Program team's proactive planning and diligence is essential to protecting Baltimore's irreplaceable historic properties.

1.3.2 Risk

In ordinary construction, the risk of damage to buildings and structures can be avoided or minimized, and if damage occurs, either architectural or structural, the damage can be replaced or repaired. With historic buildings and structures, even if repaired, the historic integrity may be compromised, so all operations and construction around them must be conducted with a higher degree of precision and safety to avoid any incidents that could cause damage to historic properties.

All construction work requires compliance with the procedures in this protection plan; Amtrak and its Contracting Officer's Technical Representative (COTR) shall monitor work sites to ensure that procedures included in this plan are followed.

The COTR is Amtrak's designated representative to monitor and manage Contractor and Sub-contractor efforts, provide guidance, and approve submittals.

Liability for damage to any historic property shall be the sole responsibility of the Contractor. Failure of Contractor or its employees to comply may result in removal from the Program and/or imposition of fines or financial damages.

Contractors are encouraged to contact the COTR to discuss concerns or questions about this CPP's content.

At no time and under no conditions should the Contractor provide information or comment to the media regarding any Program-related activities. All media inquiries should be referred to:
Amtrak Media Relations
202-906-3860
MediaRelations@amtrak.com

2.0 Contractor's Responsibilities

Any Contractor that will be involved in construction activities is responsible for obtaining City of Baltimore Building Permits and complying with all requirements of the Permits, the contract documents, including construction specifications, and this document.

Before initiating any construction activities, the Contractor shall:

1. Thoroughly review this document and become familiar with its provisions.
2. Confirm with Amtrak the hotline telephone number that the public can use to report concerns about a threat or damage to historic properties that may be impacted by construction activities or that are near construction sites. The Contractor shall post the hotline number and its purpose in a prominent, publicly visible location at the work site. Amtrak will post the hotline on the project website and will handle any calls to the hotline in accordance with Section 5 of this CPP.
3. In accordance with Sections 3.2.1 and 3.2.2, identify any historic properties in the vicinity of the construction activity and document their existing condition.
4. In accordance with Specification Section 02 65 00, prepare a Vibration Control Plan (VCP) and Vibration Monitoring Plan (VMP) that ensure that the building damage risk criteria are not exceeded.
5. In accordance with Section 3.2.3, develop a work plan to protect historic properties and submit the plan to the COTR for review and approval.
6. Shield vulnerable architectural elements in accordance with Section 3.2.4.
7. Ensure that all persons working on construction activities are aware of the surrounding historic properties and the measures identified in the work plan to protect those properties and any potential archaeological resources.

During construction activities, the Contractor shall:

1. Comply with all protection measures identified in the VCP and the VMP, the work plan, and Sections 3.2, 3.3, 4.0, and 5.0 of this CPP.
2. Monitor the efficacy of the protection measures, including monitoring vibration levels during demolition and construction activities. If needed, explore and implement additional corrective steps, with approval from the affected property owner(s) and the COTR.
3. Limit all work to the pre-established Limits of Disturbance (LOD) for the Program.

3.0 Built Historic Properties

The review process of Section 106 of the National Historic Preservation Act requires that federal agencies avoid, minimize, or mitigate a project's adverse effects to historic architectural and engineering properties. Potential adverse effects from the Program include, but are not limited to, physical alterations and damage resulting from Program construction or operations, ground displacement, vibration, dust, rodent migration, fire, and drainage issues.

As part of the Program planning, Amtrak identified historic architectural and engineering properties that could be directly or indirectly affected by the proposed demolition and construction activities and subsequent facility operations. In accordance with Section 106 of the National Historic Preservation Act, as amended, historic properties are identified as those that are either listed in, or eligible for listing in, the National Register of Historic Places.

This section includes a listing of the architectural and engineering properties that have been identified as historically significant and explains Program-related issues in reference to specific historic properties (Section 3.1), and outlines steps that the Contractor is required to take to avoid adverse effects, including pre-construction planning steps and activities (Section 3.2) and protection measures to be implemented during construction (Section 3.3). Historic properties have also been identified on the Historic Properties Key Plan Sheets.

3.1 Significant Historic Architectural and Engineering Properties

The Program traverses an old and historic part of the City of Baltimore that contains numerous historic properties, including six historic districts, three historic rail lines, and numerous buildings and engineering structures, many of which are significant as contributing elements of one of the historic districts or rail lines.

The six districts are:

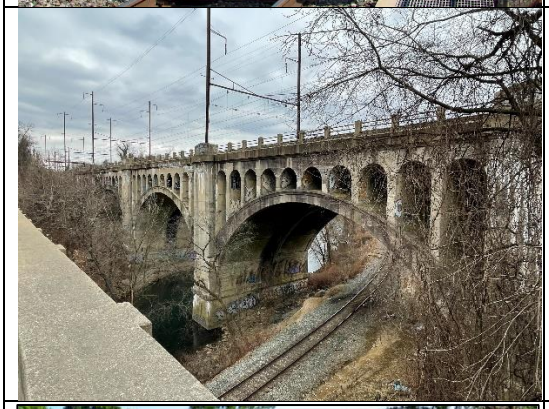
1. Greater Rosemont Historic District (B-5112)
2. Midtown Edmondson Historic District (B-5118), also known as the Monroe Riggs Historic District
3. Old West Baltimore Historic District (B-1373)
4. Edmondson Avenue History District (B-5187)
5. Reservoir Hill Historic District (B-1379)
6. Bolton Hill Historic District (B-64)

The three rail lines are:

1. Baltimore and Potomac Railroad Historic District (B-5164), also known as the Baltimore & Port Deposit Railroad and the Philadelphia, Wilmington & Baltimore Railroad
2. Union Railroad (B-5163), also known as the Northern Central Railroad (NCRR), Pennsylvania Railroad, Canton Railroad, and Northern Suffolk Railroad
3. Baltimore and Ohio Baltimore Belt Line (B-5287)

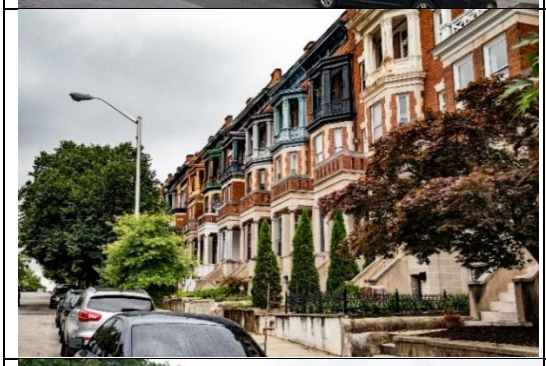
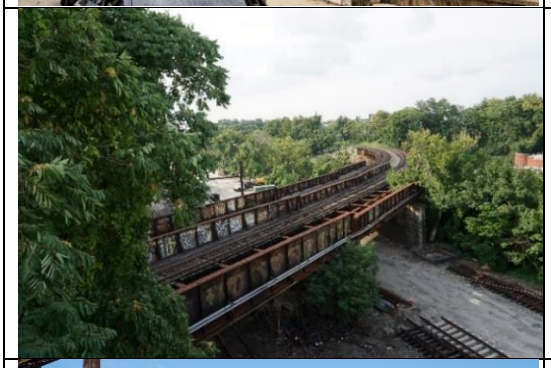
The Contractor shall assume that individual features within a historic district or within one of the historic rail lines, such as buildings, bridges, landscaping features, rail catenary structures, and signal bridges, are historic. The historic properties identified below need to be protected.

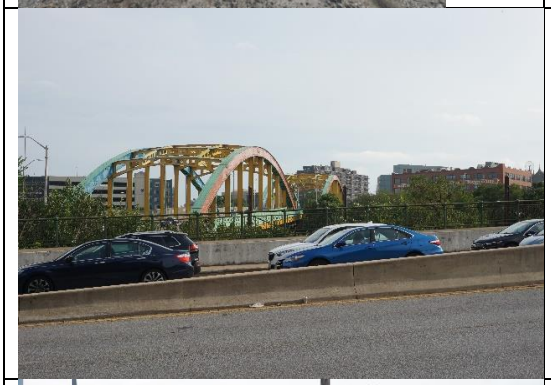
Table 1: Historic Properties

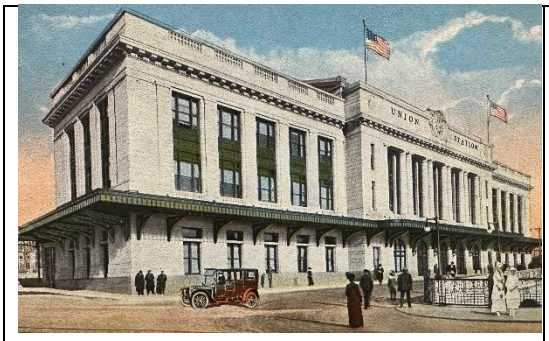
Historic Properties			
Photograph	**Name/MIHP No./Location**	**Description**	**Figure #**
	**B&P Railroad (Philadelphia, Baltimore & Washington Railroad)** B-5164 The segment of the Northeast Corridor between Baltimore Penn Station and south to the Baltimore city/county line, is historically significant. The line is also known as the Baltimore & Port Deposit Railroad and the Philadelphia, Wilmington & Baltimore Railroad.	The historic rail line, which first operated as the B&P Railroad, consists of the 1873 B&P Tunnel, late 19th century stone bridges, tunnel portals, and retaining walls, 20th century bridges, and 1930s power, communication, and signal structures.	1, 2, 3
	**Pennsylvania Railroad Viaduct** B-5064 The bridge carries Amtrak's Northeast Corridor over Baltimore Street, the Gywnns Falls stream, and the CSX Railroad line on the east side of the stream.	Constructed in 1914, the viaduct is a four-span reinforced concrete spandrel arch structure. Three of the four arches are open spandrel, each containing ten arched ribs.	1, 2
	**Bridge Carrying the B&P / Philadelphia, Baltimore and Washington Railroad over North Franklintown Road (UG 98.95)** B-5164 The bridge carries Amtrak's Northeast Corridor over North Franklintown Road in the southwest section of the City of Baltimore.	Constructed in 1932, the bridge is a three-span steel through-plate girder bridge with steel support columns and reinforced concrete scored abutments with in-line wingwalls.	1, 2
	**Midtown Edmondson Historic District** B-5118 Also known as the Monroe Riggs Historic District, the district includes property on both sides of the NEC from approximately the southern portal of the existing B&P Tunnel at Fulton Street southward to West Franklin Street. The area on the western side of the NEC overlaps with property that is located within the Greater Rosemont Historic District.	Predominantly residential in character except for a strip of industrial development along the railroad tracks. Approximately 1500 of the buildings within the district are considered historically significant.	1, 2

Historic Properties			
Photograph	**Name/MIHP No./Location**	**Description**	**Figure #**
	**American Ice Company** B-1040 The industrial building is located at 2100 West Franklin Street on the east side of the Northeast Corridor and immediately adjacent to the Bridge carrying the B&P / Philadelphia, Baltimore, and Washington Railroad over West Franklin Street. The building overlooks the West Baltimore MARC Station parking lot.	The American Ice Company is a two-story masonry building, rectangular in plan, with a width of 21 bays along its primary façade on West Franklin Street. Due to fire damage, only the front (south) façade of the building is intact. The building is individually listed in the National Register of Historic Places.	1, 2
	**Atlas Safe Deposit & Storage Company Warehouse** B-5188-2 The warehouse complex is located at 2126 Edmondson Avenue, immediately east of the Northeast Corridor. The main building fronts onto Edmondson Avenue and sits close to the road.	The main building, built in 1925, is distinguished on the exterior by its restrained classical revival façade. Key features include limestone detailing within a red brick field and a monumental wood and glass central entrance within an arched masonry opening framed by limestone quoins. All other elevations of this building are utilitarian in nature.	1, 2
	**Bridge BC 2410** (Lafayette Avenue over Amtrak) B-4553 The bridge carries Lafayette Avenue over the Northeast Corridor and extends from North Payson Street on the east to Spedden Street on the west.	Constructed in 1932 with major alterations in 1975, the bridge carrying Lafayette Avenue is a combination deck girder and rolled steel I-beam bridge. It has three main spans and eleven approach spans. The concrete deck and piers have Classical detailing.	1, 2
	**Greater Rosemont Historic District** B-5112 The Greater Rosemont Historic District includes property on the west side of the NEC from approximately Winchester Street southward to West Franklin Street, with the portion of the district south of West Lafayette Avenue being in the closest proximity to the NEC. The area at the eastern edge of the historic district (just to the west of the NEC) overlaps with property that is located within the Midtown Edmondson Historic District.	The Greater Rosemont Historic District primarily consists of rowhouses dating from the late nineteenth century to the 1950s, with some non-residential buildings.	1, 2

Historic Properties			
Photograph	**Name/MIHP No./Location**	**Description**	**Figure #**
	**Ward Baking Company** B-5112-2 The bakery complex is located at 2140 Edmondson Avenue, immediately west of and adjacent to the Northeast Corridor. The property extends from Edmondson Avenue to the south to West Lanvale Street to the north. The main building is accessed from Edmondson Avenue; a small auto repair shop fronts onto West Lanvale Street and is accessed from a gate on that street.	Built ca. 1927, the Ward Baking Company complex consists of a large three-story brick building and a small one-story brick garage located at the north end of the complex. The bakery company functioned from 1927 to 1974.	1, 2
	**Fire Department** **Engine House No. 36** B-5112-4 The firehouse is located at 2249 Edmondson Avenue at the southeast corner of the intersection of Edmondson Avenue and North Bentalou Street. The two-story brick building sits close to the road. The firehouse has an adjoining partially walled paved yard on the south side of the lot.	The Tudor Revival style firehouse is a narrow two-story rectangular building that is one bay wide east-to-west and seven bays deep north-to-south. It was built in 1910 at a time when the city was being re-built following the Great Fire of 1904 and during the city's expansion to the west due to the 1906 extension of the streetcar system along Edmondson Avenue.	1, 2
	**Edmondson Avenue Historic District** B-5187 The historic district is bounded by St. Peter's Cemetery to the north, the adjoining railroad tracks and associated industrial development to the east, West Franklin Street to the south, and North Franklintown Road and Braddish Avenue to the west.	The National Register-listed historic district includes the neighborhoods of Evergreen Lawn, Bridgeview/Greenlawn, Rosemont Homeowners/Tenants, and sections of Midtown-Edmondson. This district includes several hundred structures, predominantly residential in character.	1, 2
	**Old West Baltimore Historic District** B-1373 The historic district is located approximately between Morris Street to the east; Dolphin Street, West Hoffman Street, and West Franklin Street to the south; North Fulton Street to the west; and West North Avenue to the north. The National Register-listed historic district primarily consists of approximately 175 blocks.	Old West Baltimore became in time the most populous African American neighborhood in Baltimore. The center of the African American business and commercial community was Pennsylvania Avenue, which contained many African American-owned businesses.	1, 2

Historic Properties			
Photograph	**Name/MIHP No./Location**	**Description**	**Figure #**
	**Bolton Hill Historic District** B-64 The historic district is in the northwest section of Baltimore, bounded by West Mt. Royal Avenue to the east, Dolphin Street to the south, Eutaw Place to the west, and North Avenue to the north.	The National Register-listed historic district includes 20 blocks of buildings constructed between approximately 1850 and World War I. The area developed as part of the city's northward movement, partially due to the extension of the streetcar system.	1, 3
	**Reservoir Hill Historic District** B-1379 Located north of North Avenue, the National Register-listed Reservoir Hill Historic District contains the site of the proposed Intermediate Ventilation Facility and is located above a portion of the proposed new tunnel	The historic district consists of 32 blocks of primarily late nineteenth to early twentieth century rowhouses, with some mansions, apartment buildings, and religious and commercial buildings.	1, 3
	**Baltimore and Ohio (B&O) Railroad, Baltimore Belt Line** B-5287 The Baltimore Belt Line is located north of Baltimore Penn Station in close proximity to the North Avenue Bridge. The line is currently part of CSX Transportation Company's (CSXT) main freight line through Baltimore.	The line was constructed between 1891 and 1895 to connect the B&O's southern Baltimore terminus at Camden Station to Bay View Junction. Its significant features include limestone and steel through-plate girder bridges supported by stepped limestone abut-ments and coursed ashlar limestone retaining walls.	1, 3
	**Baltimore and Ohio Railroad, Baltimore Belt Line Bridge over Jones Falls Valley** B-5288 The bridge, located on the Baltimore Belt Line near the North Avenue Bridge, crosses Jones Falls Valley in a curvilinear fashion.	The Belt Line Bridge, built in the 1890s, is a six-span steel through-plate girder with an open grid deck, built-up girder sections connected by rivets, and coursed ashlar limestone abutments, wingwalls, and piers with concrete caps.	1, 3

Historic Properties			
Photograph	**Name/MIHP No./Location**	**Description**	**Figure #**
	**North Avenue Bridge BC1208** B-4521 The North Avenue Bridge is a multi-level viaduct that spans railroad tracks, the Jones Falls, and Falls Road. It carries the vehicular traffic of North Avenue across the Jones Falls Valley.	The bridge is comprised of three 130-foot spans with rock-faced marble. Two elliptical arches and twin round-arch tunnels accommodate train and road traffic.	1, 3
	**Howard Street Bridge BC1405** B-4529 The bridge, located north of Baltimore Penn Station, carries Howard Street over I-83, Jones Falls, and the Amtrak rail lines in a northeast-southwest direction through a commercial section of the city.	The Howard Street Bridge is a seven-span double metal arch, triple hinged, through-bridge with concrete roadway, piers, and footing, and a deck supported by suspenders. Constructed in 1938, the bridge was possibly constructed to eliminate at-grade crossings.	1, 3
	**Union Railroad** B-5163 The Union Railroad within the City of Baltimore extends from the northern portal of the Baltimore and Potomac Tunnel under the North Avenue Bridge to the southern terminus at Boston Street in Canton. This line is also known as the Northern Central Railroad (NCRR), Pennsylvania Railroad, Canton Railroad, and Northern Suffolk Railroad.	This line, eligible for inclusion in the National Register of Historic Places, was established ca. 1873. The overall railroad line includes a number of buildings, structures, and objects that include (but are not limited to): Pennsylvania Station (MIHP No. B-3727, National Register-listed); Union Tunnel (constructed in 1873); Railroad tracks and track bed (circa 1935); Retaining walls; Catenary lines; Railroad-related buildings; and Bridges (several 1930s truss bridges).	1, 3

	**Pennsylvania Railroad Station** B-3727 Located at 1525 North Charles Street on a natural embankment just north of Mt. Royal Avenue and between Charles and St. Paul Streets.	Built in 1911 on the site of two earlier railroad stations, Penn Station is listed on the National Register of Historic Places. It is significant for its Beaux Arts Classical architecture and for its role in Baltimore's transportation history.	1, 3

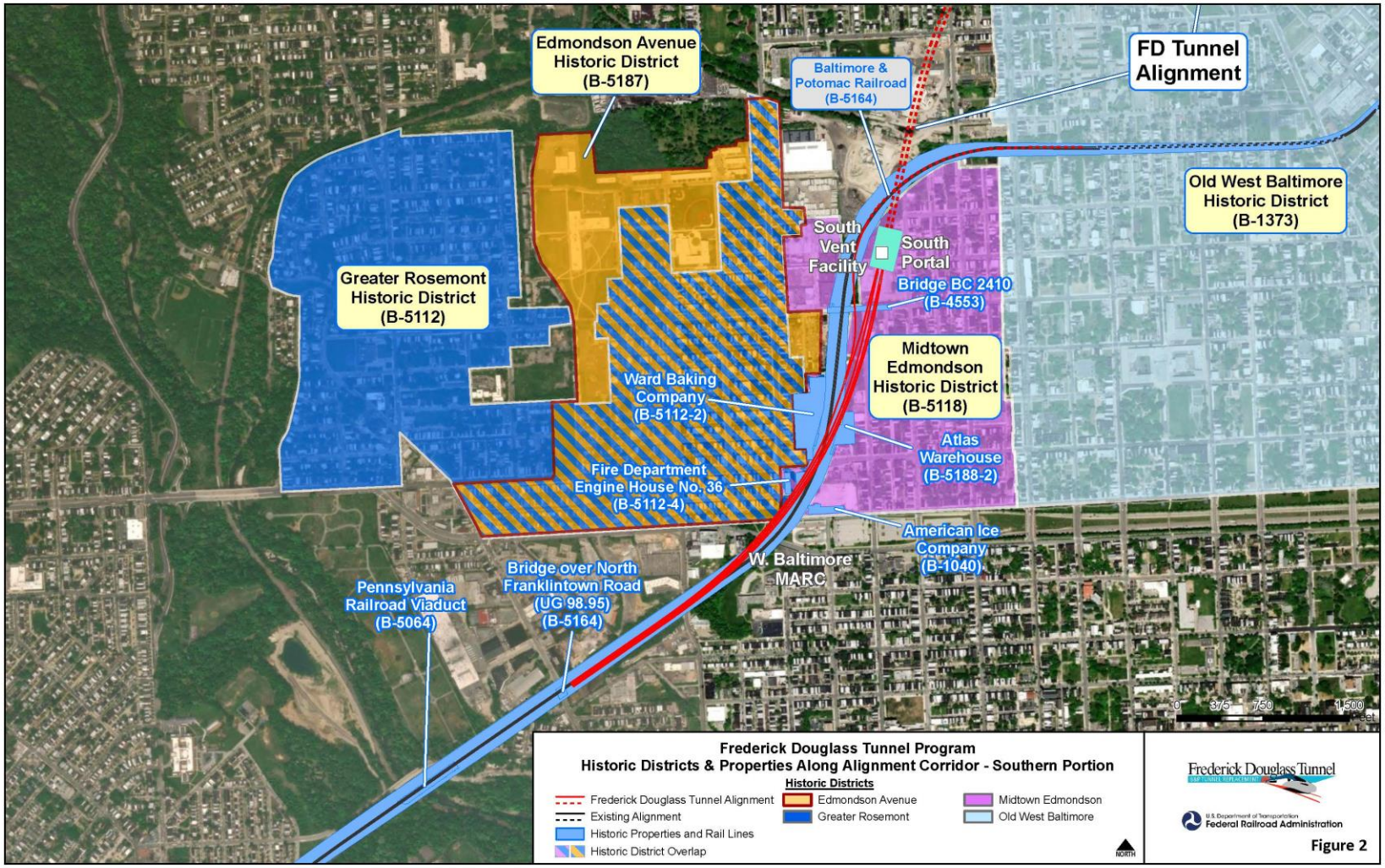


Figure 2: Historic Districts & Properties Along Alignment Corridor - Southern Portion

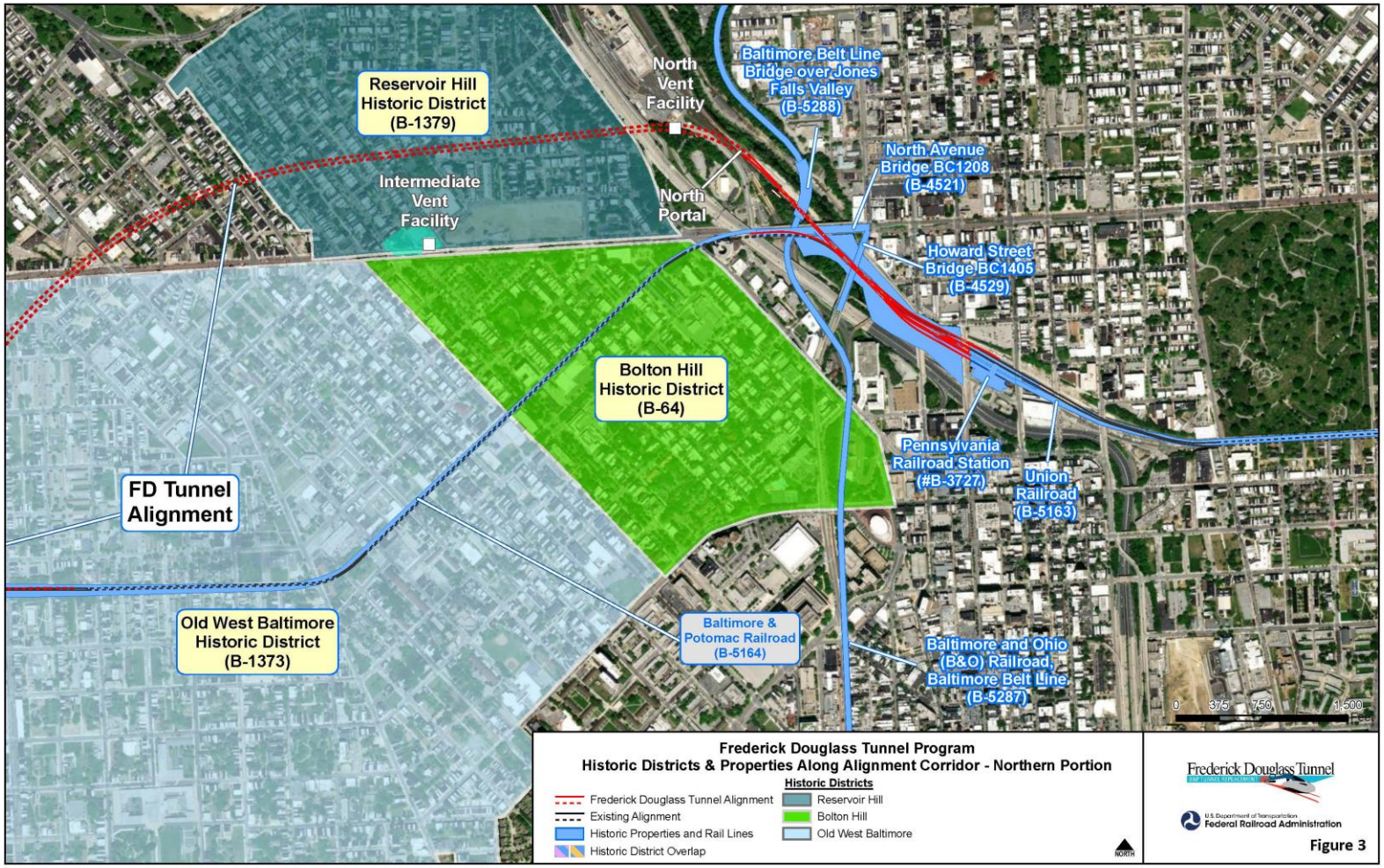


Figure 3: Historic Districts & Properties Along Alignment Corridor - Northern Portion

The following section highlights specific issues and/or instructions relating to each of the historic properties. Any historic properties that overlap with the Program's Zone of Construction Impact Assessment (ZOCIA) are noted below. The Contractor shall perform pre- and post- construction surveys on structures in the ZOCIA in accordance with Minimum Zone of Construction Impact Assessment Sheets BPTR-K, GT-250 – GT-263, Program specifications, and this CPP.

B&P / Philadelphia, Baltimore, and Washington Railroad (#B-5164): All construction along the existing alignment of the NEC will affect the historic Baltimore & Potomac (B&P) / Philadelphia, Baltimore, and Washington Railroad. Care needs to be taken to protect bridges that will be altered but are not being demolished. This includes the Pennsylvania Railroad Viaduct, the bridge carrying North Franklintown Road over the NEC, the western portion of the bridge carrying West Lafayette Avenue over the NEC (during the first phase of the Lafayette Avenue Bridge replacement), and the stone abutments and the steel piers of the West Franklin Street Bridge.

Midtown Edmondson Historic District (#B-5118): Located adjacent to the rail line, the historic district will be impacted by construction along the NEC. Particular care needs to be taken to protect the buildings within the historic district that are in close proximity to the project, e.g., the rowhouses in the 900 block of North Payson Street, the buildings at the eastern edge of the Lafayette Avenue Bridge (i.e., those at the intersection of North Payson Street and West Lafayette Avenue), the Atlas Safe Deposit and Storage Company Building at 2126 Edmondson Avenue (at the base of the Edmondson Avenue Bridge), and the American Ice Company Building (#B-1040), which is immediately adjacent to the bridge carrying the NEC over West Franklin Street. There are approximately 36 historically significant buildings within this historic district that are also within the Program's ZOCIA (see BPTR-K, GT-250 – GT-251).

Greater Rosemont Historic District (#B-5112) / Edmondson Avenue Historic District (#B-5187): Located immediately to the west of the rail line, these two historic districts will be impacted by construction along the NEC, especially the replacement of the Edmondson Avenue, Lafayette Avenue, and Franklin Street Bridges. Particular care needs to be taken to protect the buildings within the historic district that are in close proximity to the project (e.g., the Ward Baking Company at 2140 Edmondson Avenue, City of Baltimore Engine House No. 36 at 2249 Edmondson Avenue, the 2200 block of West Lafayette Avenue, the 2300 blocks of Edmondson and Lauretta Avenues, 2400 block of West Franklin Street, and the 600 block of North Bentalou Street).

Old West Baltimore Historic District (#B-1373): No surface-level construction will take place within this historic district; however, 58 of the historically significant buildings within this historic district are within the ZOCIA (see BPTR-K, GT-253 – GT-254).

Bolton Hill Historic District (#B-64): Care must be taken to protect the buildings within the Bolton Hill Historic District, which is across West North Avenue from the site of the Intermediate Ventilation Facility (IVF). Of particular concern are the Eutaw Place landscaped median and the rowhouse converted to office use at 2100 Eutaw Place.

Reservoir Hill Historic District (#B-1379): The district will be affected by the construction of the IVF. Of particular concern are the rowhouses along Eutaw Place and Linden Avenue that are near the construction site, especially 2205 Eutaw Place, which shares a half-height retaining wall with the former medical center at 920 West North Avenue. In addition, approximately 128 historically

significant buildings within this historic district are within the ZOCIA (see BPTR-K, GT-258 – GT-262).

B&O Belt Line Railroad and the B&O Belt Line Bridge (#B-5288): The new rail alignment will pass under the historic bridge. Of particular concern are the coursed ashlar limestone abutments, wingwalls, and piers with concrete caps. Care must be taken to avoid damaging the masonry either during construction or as a result of attaching anything additional to the masonry.

North Avenue Bridge (#B-4521): The new rail alignment will pass under the historic bridge. Care must be taken to avoid damaging the bridge during construction.

Howard Street Bridge (#B-4529): The new rail alignment will pass under the historic bridge. Care must be taken to avoid damaging the bridge during construction.

Union Railroad (#B-5163): The Program is in close proximity to the historic Union Railroad. Care must be taken to avoid damaging the historic rail line during construction.

Pennsylvania Railroad Station (#B-3727): The station is located at the northern end of the Program where there is minor trackwork. Care must be taken to avoid damaging the historic station during construction.

3.2 Pre-Construction Preparation

The Contractor is responsible for undertaking the following pre-construction planning steps and activities.

3.2.1 Identification of Historic Properties

Review the existing conditions plans including the Historic Properties Key Plan Sheets and this document to locate all historic properties that are within the vicinity of the Program site. Verify with the COTR whether any additional properties have been designated historic subsequent to the development of the Historic Properties Key Plan Sheets.

Many of the buildings within this area are located within a historic district. The Contractor shall assume that buildings, structures, and architectural features (both interior and exterior) within a historic district are significant and warrant protection, unless they are to be removed as part of the Program.

Historic buildings may be weaker than newer buildings due to deferred maintenance and past alterations that may have produced structural weak points susceptible to damage. Historic finishes and architectural features including, but not limited to, plaster walls and ceilings, ornamental windows of stained glass, leaded glass, and curved glass, woodwork, metalwork, masonry, and interior features, may lack the flexibility to accommodate abnormal movement.

3.2.2 Documentation of Existing Conditions

As part of the Pre-Construction Condition Surveys described in Specification Section 02 22 10 – Condition Surveys:

1. Document historic buildings and architectural features that are fragile.
2. Describe and photograph the existing condition of the fragile historic buildings, structures, or architectural features as well as any areas of existing damage.
3. For any architectural feature that must be removed in order to protect it:
    a. A minimum of six (6) color digital photographs shall be taken, three (3) showing the architectural feature in its location and condition prior to its removal, and the other three (3) showing the appearance and condition of the feature after its removal.
    b. A reproducible set of plans shall also be used to identify each building and location where architectural features have been removed.
    c. The original photos and plans shall be provided to Amtrak.

See Specification Sections 01 32 33 – Photographic Documentation, 02 22 10 – Condition Surveys, and 02 30 00 – Subsurface Investigation.

3.2.3 Preparation of a Work Plan

Develop a work plan ("Work Plan") to protect historic properties and architectural features. Submit the Work Plan to the COTR for review and approval. The Work Plan shall include the proposed means and methods to protect fragile historic properties and architectural features. All work shall be in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties.* Detailed information on the standards can be found at http://www.nps.gov/tps/standards/four-treaments/treatment-guidelines.pdf.

Prior to the initiation of any demolition or construction activities, the Contractor shall ensure that all persons working on the construction are aware of the surrounding historic properties and the measures necessary to protect them, as well as the treatment measures to protect archaeological resources.

See Specifications Division 01 – General Requirements and Division 02- Existing Conditions.

3.2.4 Shielding of Architectural Elements

The Contractor shall shield from damage architectural elements of adjacent properties that have been identified as significant and are potentially vulnerable to damage, via the following steps:

1. Obtain written permission from a property owner before entering a property to add protection measures. Should the property owner refuse to allow such protection to be installed, the Contractor shall not be responsible for the damage to the architectural element.
2. For any feature to be protected in place:
    a. Utilize approved rigid or flexible covering materials to protect identified elements.
    b. Temporarily cover and/or seal openings that have potential to allow dust or debris to enter an adjacent property's interior.
    c. Use least damaging methods to attach protection materials. Leave protection materials in place until any potential for damage to historic property by the Program is over.
    d. When there is no longer the potential for damage from the Program, carefully remove the protection materials to avoid damaging historic surfaces. If there is any inadvertent damage from the protection measures, repair the damaged surface in-kind after receiving property owner's and COTR's approval of the proposed repair method.
    e. Protect bridge abutments that are to be re-used (i.e., West Franklin Street) by utilizing approved rigid or flexible covering materials to protect the surface and integrity of the abutments.
3. For architectural feature that must be removed for protection purposes:
    a. Mark the feature using acrylic or latex paint or carpenter's wax so that it can be correctly reinstalled.
    b. Store the feature securely during construction in a manner that adequately protects it from damage or theft.
    c. Replace the feature to its original location and condition at the time of removal and photograph its new location. Ensure that all markings are removed.

3.3 Protection Measures

3.3.1 General Measures

The Contractor shall take the following steps when implementing construction:

1. Do not stack or lean construction materials, products, or supplies against or within falling range of historic properties.
2. Cover adjacent surfaces to avoid damage from small particle debris from blasting, demolition and/or construction work.
3. Take extra care when using cranes, hoists, or other equipment near other properties.
4. Use concrete cutters on pavement surfaces instead of pavement breakers or jackhammers, where possible or practical.
5. Direct debris chutes away from historic properties.
6. Secure and/or seal windows, rooftop doors and any other openings that are made accessible or are exposed by the construction activity.
7. Install proper mufflers on equipment and maintain all motorized equipment in a state of good repair to limit wear-induced vibration.
8. Limit all work to the pre-established Limits of Disturbance (LOD) for the Program.
9. Provide for security fencing around areas of construction.
10. Protect historic properties from falling and airborne objects.

3.3.2 Protection of Adjacent Historic Properties

Protection and monitoring measures shall be in place during demolition and construction activities for any excavation that could result in settlement of a historic building or structure. This includes any slope settlement or ground displacement that may cause shifting or settlement of the historic building or structure. The slope settlement evaluation shall include consideration of the effects of site groundwater and anticipated construction vibration.

Structural support elements shared by a building that is to be demolished and an adjacent building or structure that is to remain shall be identified, inspected, monitored, protected, and reinforced as required to protect the structural integrity of the building or structure that is to remain. Protection and monitoring measures shall be in place during demolition and construction activities, and they shall not be removed until after all such activities have been completed. Structural support elements shall be inspected immediately prior to removal of any temporary reinforcements and must be deemed safe in writing by the COTR.

See Specification Section 02 41 19 – Selective Demolition, and the Construction Protection Plan – Demolition.

3.3.3 Vibration

Historic properties can be susceptible to vibration damage. Therefore, the Contractor shall adhere to the following procedures:

1. Historic properties shall be assessed in accordance with Specification 02 65 00 “Noise and Vibration Control,” which includes criteria described in the *Federal Transit Administration Transit Noise and Vibration Impact Assessment Manual* (September 2018) and the *City of Baltimore Department of Public Works Specifications: Materials, Highways, Bridges, Utilities, and Incidental Structures* (2006). The construction vibration criteria categorizes

buildings by sensitivity and provides thresholds to prevent cosmetic and structural damage. Table 3 from Specification 02 65 00 is replicated below in Table 2 of this document.

Table 2: CONSTRUCTION VIBRATION LIMITS FOR DAMAGE RISK TO BUILDINGS

Physical Damage Issue of Concern	Building Category	Building Description	Allowable Peak Vibration (peak particle velocity (PPV) in/sec)	
			Source S Transient	Source M Continuous
Major Structural	ALL	All building type of construction	1.9	1.9
Minor, Cosmetic	I	I. Reinforced-concrete, steel, or timber (no plaster)	1.2	0.5
Minor, Cosmetic	II	II. Engineered concrete and masonry (no plaster)	0.7	0.3
Minor, Cosmetic	III	III. Non-engineered timber and masonry buildings	0.5	0.2
Minor, Cosmetic	IV	IV. Buildings extremely susceptible to vibration damage	0.3	0.12

Notes: "Source S" is defined as equipment that produces transient or impact vibrations.
"Source M" is defined as equipment that produces continuous or steady state vibrations.

Source: *Federal Transit Administration Transit Noise and Vibration Impact Assessment Manual*

2. The Contractor should refer to Specification 02 65 00 for further details. The following requirements shall apply:
    a. The upper vibration limit for historic residential buildings will be 0.5 in/sec peak particle velocity (PPV) for transient sources of vibration and 0.2 in/sec PPV for continuous sources of vibration. This equates to building Category III in the FTA vibration criteria, per Table 2 above. This conforms to the Record of Decision requirement for 0.5 inc/sec PPV for residential buildings.
    b. A detailed assessment of the damage risk will be conducted to assess appropriate vibration criteria for the building or structure. An assessment would not be required if the building or structure is treated as Category IV.

3. As part of the Vibration Control Plan prepared in accordance with Specification 02 65 00, the Contractor will demonstrate that vibration impacts to historic properties will be avoided or minimized. This will include:
    a. Buildings and structures will be assessed to determine their FTA building category and vibration limits, using the pre-construction condition assessment.
    b. An assessment of vibration will be completed by the Contractor's acoustic engineer, per specification requirements. This will include a prediction of vibration to the buildings and an assessment will be conducted to meet vibration thresholds.
    c. Mitigation will be evaluated, and alternative construction methods or removal of fragile building elements will be considered, as required.
    d. The building or structure damage susceptibility assessment for historic properties will be documented and will include review by a professional Architect or Architectural Historian who meets the National Park Service Professional Qualifications Standards and a structural engineer. Vibration-sensitive elements will be identified and listed, and the building category and any specific risk mitigation will be provided.

4. The Contractor will use all reasonable efforts to implement vibration reduction methods to avoid or minimize construction-induced vibration. This will include, but not be limited to, the following:
    a. Rotary/screw or vibratory pile driving instead of impact pile driving.
    b. Hydrojet or concrete saw-cutting instead of hoe ram demolition.
    c. Slurry wall trenching techniques instead of pile driving.
    d. Excavation of obstacles instead of dropping torpedo rams, etc.
    e. Pre-auguring and/or pre-trenching pile holes to loosen sub-soil and reduce resistance for subsequent pile driving.
    f. Attaching vibration-deadening material, buffers, or bellows to impact devices such as pile drivers.
    g. Limiting number and duration of equipment working on site.
    h. Filling potholes and/or grinding paved roadway surfaces smooth to minimize vibrations from passing trucks.
    i. Using controlled blasting techniques to minimize overbreak and meet vibration criteria. This will include preparing a blasting plan describing charge weights and patterns. The Contractor should refer to Specification 31 71 17.

j. Scheduling of construction events and limiting usage times to minimize disruption from vibrations, especially during nighttime hours and near vibration-sensitive receptors.
k. Excavating trenches to de-couple the ground-borne vibration pathway between the source and receptor locations.
l. Installing vibration isolation springs between vibration source and receptor locations.
m. Informing affected public of the need for, and duration of, vibration-producing work operations.

5. During construction, the Contractor will prepare a Vibration Monitoring Plan and undertake monitoring of vibration levels at the worst impacted historic buildings or structures according to the impact assessment documented in the Vibration Control Plan. Action/trigger levels with warning and stop work thresholds will be employed.

6. If vibration thresholds are exceeded, the Contractor shall inspect historic buildings and structures for cracks and changes and investigate alternative means and methods of construction. If damage occurs, the construction Contractor will comply with requirements in Specification 01 35 95 Historic Property Protection, Section 3.15.

3.3.4 Dust and Small Particle Debris

Protect historic buildings from dust and small particle debris that may harm historic properties by performing the following steps:

1. With owner's approval, seal windows, HVAC ducts, and all other openings with tape or temporarily seal with clear polyethylene sheets.
2. Contain any debris such as chips and dust.
3. For asbestos or lead paint remediation, ensure that exhaust from a sealed building is filtered and vented away from historic and adjacent properties and that lead paint chips are gathered and removed.

See Specification Section 01 35 43 – Environmental Procedures.

3.3.5 Water Damage

Evaluate and anticipate any changes in water flow that could damage historic buildings and implement the following protection measures:

1. Identify the locations of water/utility lines prior to construction/demolition.
2. Ensure that water runoff is not directed toward historic properties and that site conditions during and after construction activities do not allow pooling of water in exposed basements or ground depressions.
3. Ensure that debris does not flow into sewers and drains.
4. Do not inadvertently seal off or collapse pipes. If blocked pipes are unable to carry water away from a historic or adjacent property, flooding and excessive moisture levels may occur.
5. Use wire cages over exposed drainage areas and low-pressure water washes to protect water drainage systems.
6. Monitor any grade changes that may affect site drainage and rectify any changes that might cause runoff water to damage historic property.
7. Should unanticipated drainage blockages occur, immediately remove the blockage.

3.3.6 Traffic

Minimize traffic-related effects on historic properties, through the following:

1. Whenever possible, locate delivery entry and exit points as far as possible from the historic properties to reduce vibrations caused by increased vehicular traffic.
2. Direct construction-related traffic outside of the historic districts whenever possible, with the exception of major roadways where such traffic is appropriate.
3. Only permit construction-related traffic in residential areas during the period allowable per city ordinance; hours of operation may be further restricted by the construction permit issued by the City of Baltimore.
4. Direct drivers of loaded trucks to move at slower speeds within all historic districts.

See Specification Section 01 55 50 - Maintenance and Protection of Traffic.

3.3.7 Rodents and Vectors

To protect historic properties in close proximity to the construction site from rodents and vectors, comply with the applicable control procedures as required by the Baltimore City Construction Permit.

3.3.8 Fire Protection

Protect properties from fire through the following measures:

1. Ensure that fuels, rags, brushes, wood, plywood, and other flammable items are stored appropriately and not adjacent to historic properties.
2. Prohibit smoking in, or within 20 feet of, any historic property. Enforcement of the prohibition shall be a priority responsibility of the Contractor or Construction Manager.
3. Open flame cutting, welding, and soldering in or near existing historic buildings shall be conducted with adequate supervision, fire watches, and emergency fire protection apparatus to assure that sparks or drops of hot metal do not start fires.

See Specification Sections 01 31 00 – Project Management and Coordination, 01 50 00 – Temporary Facilities and Controls, and 01 54 00 – Safety Planning and Supervision.

3.3.9 Site Restoration

To restore the site following demolition and construction:

1. Comply with requirements in construction specifications for backfill and grading.
2. Clean the site to slab or pavement.
3. Seed and mulch areas that do not have concrete slabs or pavement.
4. Fill on-site potholes in compliance with Baltimore City standards.

See Specification Sections 01 35 43 – Environmental Procedures and 01 77 00 – Closeout Procedures.

4.0 Archaeological Historic Resources

The Section 106 process also requires that federal agencies avoid, minimize, or mitigate a project's adverse effects to underground archaeological resources. This includes damage or destruction of archaeological resources as a result of demolition and construction activities. Unlike historic buildings, which are readily visible, underground archaeological resources require identification and investigation through subsurface testing or excavation. As a result, it is very important that the CPP address potential impacts to significant archaeological resources that may be identified as a result of construction-related soil disturbance. For the Frederick Douglass Tunnel Program, this includes: 1) consideration of the subsurface archaeological resources in the Program area that might be impacted by the proposed construction activities (Section 4.1), and 2) general protection measures to protect archaeological resources to the greatest extent possible (Section 4.2).

4.1 Archaeological Sensitivity

There are no archaeological resources currently identified within the Frederick Douglass Tunnel Program project area. However, the project area was assessed by qualified archaeologists to identify its potential to contain undocumented archaeological resources and to estimate the horizontal and vertical extent of previous ground disturbance. Historic cartographic information and recent geotechnical investigations were reviewed to determine the archaeological sensitivity of the Frederick Douglass Tunnel Program project area.

The project area is situated within the Eastern Piedmont physiographic region and Maryland Archaeological Research Unit 14. The upland setting of this area would have presented an attractive locale for Native American occupation with access to the resources associated with the Gwynns Falls portion of the Middle Branch of the Patapsco River. However, despite the attractiveness of the setting, the potential for the presence of precontact period archaeological resources would be considered low. As noted in the Phase IA archaeological study for the Program, because of the later intensive historic development along the historic railroad corridor, most of the areas within the study corridor are considered to have a low probability for containing any intact pre-contact archaeological resources.

The portion of the project area extending from Edmondson Avenue to the intersection of North Payson Street and Riggs Avenue historically consisted of floodplains and well-drained uplands extending along both sides of the north branch of Gwynns Run. This area was infilled with redeposited soil in the early twentieth century. Nineteenth-century farms are known to have stood in proximity to this area, and there is the potential that intact archaeological resources associated with those farms may be present below the deep fill deposits. Other site types are also possible, including precontact habitation and resource procurement sites close to the north branch of Gwynns Run, and tenant farms of the eighteenth and early nineteenth centuries.

The portion of the project area between North Payson and North Pulaski Streets from Riggs Avenue and extending south to West Lanvale Street was the site of several former and extant rowhouses associated with the Monroe-Riggs neighborhood. There is the potential that infill basements and other cultural deposits remain preserved in the rear yards and undeveloped lots that could further contribute to the understanding of the community developed in this portion of Baltimore during the late nineteenth to early twentieth centuries.

Along Linden Avenue, a parking lot was constructed on the site of several former rowhouses associated with the late-nineteenth and early-twentieth century neighborhood of Reservoir Hill, which was a predominantly Jewish neighborhood. There is the potential that intact infill basements and other cultural deposits exist beneath the parking lot. If so, these resources could further contribute to the understanding of Jewish communities in the late nineteenth and early twentieth centuries.

The remainder of the project area, including the existing railroad alignment, is assessed as having a low sensitivity for encountering precontact and historic-period archaeological resources. This assessment is based on evidence gathered from the developmental history and the documented episodes of ground disturbance associated with the demolition and redevelopment activities in this area.

4.2 Archaeological Treatment Measures

This section pertains to the protection of potential archaeological historic properties near the demolition and construction activities. The level of protection for archaeological resources reflects the Frederick Douglass Tunnel Program project area's potential to contain significant intact archaeological resources. Section 4.3 contains general protection measures that clearly describe what protections are needed to prevent damage to surface and subsurface archaeological features and artifacts, if present.

4.3 General Protection Measures

No heavy equipment, either wheeled or tracked vehicles, shall be operated from/on exposed ground surfaces on adjacent parcels with exposed ground surface that surround the construction site, unless stipulated on the project plans.

No construction debris associated with construction activities shall be stockpiled on exposed ground surfaces on adjacent parcels with exposed ground surface that surround the construction site, unless stipulated on the project plans.

No staging of demolition or construction equipment (such as dumpsters) or supplies shall occur on exposed ground surfaces on adjacent parcels with exposed ground surface that surround the construction site, unless stipulated on the project plans.

No lunch breaks, smoke breaks, or associated personal refuse debris shall be allowed in areas with exposed ground surfaces on adjacent parcels with exposed ground surface that surround the construction site, unless stipulated on the project plans.

No privately owned vehicles or construction company vehicles shall be parked on exposed ground surfaces on adjacent parcels with exposed ground surface that surround the construction site, unless stipulated on the project plans and approved by the COTR.

In areas of high archaeological sensitivity, project archaeologists may be on site to monitor the construction process and identify potential archaeological resources directly. In locations within the Frederick Douglass Tunnel Program project area, archaeologists might not be present during all construction excavation activities. It shall be the responsibility of the construction team to bring

potential archaeological resources to the attention of the COTR, who can contact Amtrak and have archaeologists quickly respond to a discovery. If archaeological materials are encountered during construction, the Contractor shall follow the identification and notification protocols in the Unanticipated Discoveries Plan (see Appendix A of this document and Specification Section 01 35 96 – Historic Unanticipated Discoveries Procedures).

5.0 Procedures if a Historic Property is Threatened or Damaged

It is the Contractor's responsibility to avoid altering historic properties in any way. Alterations include, but are not limited to, breaking windows, damaging decorative or otherwise character-defining architectural features, removing historic building materials, or altering significant landscape features. **If any damage occurs, cease all work, and notify your supervisor and the COTR immediately.**

Repairing damage caused to a historic property is time consuming, costly, and may result in a construction delay. **Workers may be removed from work related to the Frederick Douglass Tunnel Program for carelessness.**

If damage occurs:

1. The Contractor shall immediately cease all demolition and/or construction work in the vicinity and notify the COTR.
2. The COTR shall determine if the damaged property's structural integrity is in question. If the COTR determines that a building or structure is in immediate danger of additional damage or collapse, the COTR shall, in consultation with Amtrak, instruct the Contractor as to the necessary steps to secure and stabilize the property to avoid additional damage and injury to others. If needed, Amtrak shall notify the Baltimore City Police Department as quickly as possible. The Contractor shall only take the steps they are instructed to by the COTR.
3. In accordance with PA Stipulation X, "Emergency Situations," Amtrak shall inform the PA signatories and consulting parties of the emergency and consult with them to develop, as appropriate, a treatment plan to address the emergency.
4. The COTR shall provide the Contractor with the approved treatment plan. Upon written notice from Amtrak, the Contractor may begin making the repairs in accordance with the approved plan.
5. A professional Architect or Architectural Historian who meets the National Park Service Professional Qualifications Standards shall inspect all repairs to ensure that the work complies with *The Secretary of the Interior's Standards for the Treatment of Historic Properties* (available online at https://www.nps.gov/tps/standards/treatment-guidelines-2017.pdf). Work that does not meet these standards or is not compatible with the historic character of the property shall need to be executed again in an appropriate manner.

Immediate rescue and salvage operations conducted to preserve life or property are exempt from these provisions.

The public will be able to notify Amtrak of a potential threat or damage to historic properties not subject to demolition. Once a call is received, the hotline operator shall provide the information to the COTR, who will tell the Contractor to cease work in the vicinity, if it is warranted. Amtrak and the Contractor will then investigate the issue and implement the above provisions of Section 5, Steps #2-#5. Amtrak will log incoming calls to the hotline and document resolution of concerns.

The Contractor shall be financially responsible for repairs deemed necessary through consultation per the Program's PA.

How do I Report Historic Property Concerns?

In order to ensure that historic properties are protected during Program construction, Amtrak has established a line of responsibility on the construction site. This line of responsibility shall reduce confusion, clarify accountability, and streamline any coordination and approvals that may be needed from Amtrak. To report an issue or concern to Amtrak, call 443-423-1115.

When in doubt, always contact your supervisor before proceeding!

Baltimore and Potomac (B&P) Tunnel Replacement Program

Unanticipated Discoveries Plan

September 16, 2022

Appendix A

Table of Contents

List of Figures

1.0 Introduction

1.1 Baltimore & Potomac (B&P) Tunnel Replacement Program

To improve rail service and reliability on the Northeast Corridor (NEC), the Federal Railroad Administration (FRA) has funded engineering and environmental studies related to National Railroad Passenger Corporation's (Amtrak) proposed replacement of the Baltimore & Potomac (B&P) Tunnel. Opened in 1873, the B&P Tunnel is one of the oldest structures on the NEC and is approaching the end of its useful service life. The 1.4-mile-long tunnel, located between Baltimore Penn Station and the West Baltimore Maryland Area Regional Commuter (MARC) Station, provides service to Amtrak and Maryland's MARC Commuter Rail passenger trains and Norfolk Southern Railway freight trains.

The proposed B&P Tunnel Replacement Program ("Program") extends four miles along the NEC from Baltimore Penn Station to the Gwynns Falls Bridge along a new arcing alignment north of the present B&P Tunnel (Figure 1). The Program includes two new high-capacity tubes for electrified passenger trains, new roadway and railroad bridges, new rail systems and track, a new ADA-accessible West Baltimore MARC station, portal and vent plant construction, modifications to the overhead power and signal structures, and utilities and other site work.

1.2 Purpose of the Unanticipated Discoveries Plan

This Unanticipated Discoveries Plan (UDP) is to be included in all relevant construction and bidding documents for contractor/team use in the event of encountering unanticipated discoveries of subsurface/buried archaeological or historic architectural resources. This plan includes identification of archaeological resources, chains of contact (i.e., notification protocols) for different types of resources, a protocol for media inquiries, and other relevant provisions.

Significant archaeological resources can sometimes be unexpectedly discovered in areas that may have already been subjected to Phase I archaeological survey or have been determined not to contain archaeological resources due to extensive ground disturbance. A Phase IA Archaeological Assessment was completed for the Program in 2015 and concluded that although the Area of Potential Effects (APE) in the proposed study corridor has been subjected to prior soil disturbance, there is still the potential for both Native American and historic-era archaeological sites. Based on the results of these prior investigations, it is believed that the subsurface integrity of most sites that may be in the Program APE is probably poor; it is also believed that a rare preserved archaeological site could be encountered. Given current information on existing archaeological site distributions, the Program APE has a higher potential for containing historic-era sites than Native American sites. An unanticipated discovery is defined as any indications of the presence of archaeological materials, including Native American and historic-era artifacts, animal bone, and/or human remains, and includes, but is not limited to, archaeological resources identified in Section 2.0.

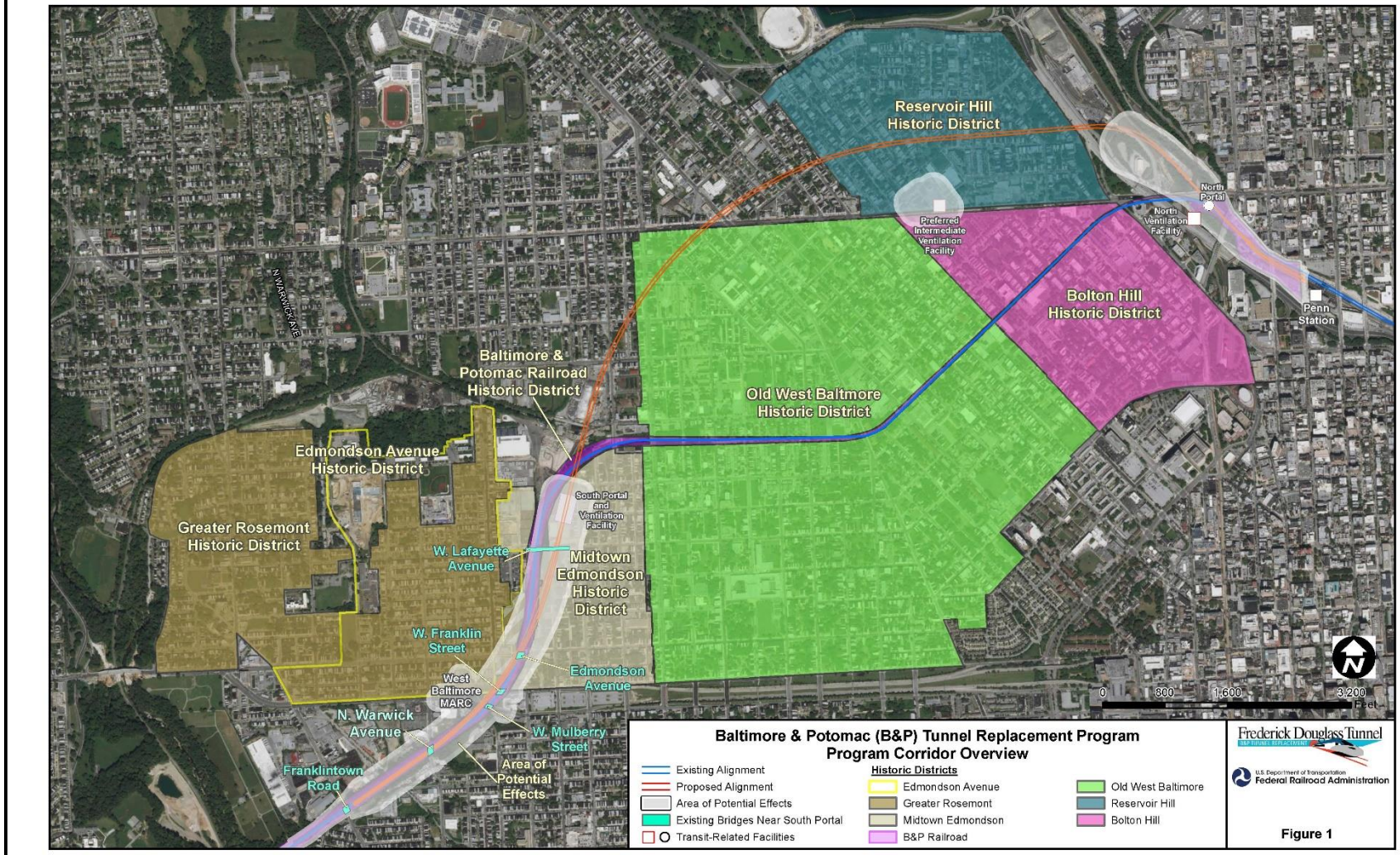


Figure 1: Program Corridor Overview

Historic properties include buildings, structures (including bridges), districts, sites, objects, and archaeological resources that have been listed in or determined eligible for inclusion in the National Register of Historic Places (NRHP). The NRHP is the official federal list of properties recognized for their significance in American history, architecture, archaeology, engineering, and culture. Archaeological resources are the remains of past human activity and are usually below ground. They may be Native American resources that pre-date contact with European settlers or historic resources postdating the arrival of Europeans.

1.3 Cultural Resources Requirements

Federal Law

Section 106 of the **National Historic Preservation Act** of 1966 (now 54 U.S.C. 306108), as amended (Section 106), requires that projects such as the B&P Tunnel Replacement Program that receive federal funding or require federal permits, licenses, or other approvals incorporate the necessary planning to avoid, minimize, or mitigate a project's adverse effects to historic properties. In accordance with Section 106, Amtrak and the FRA determined that the Program would have adverse effects on historic properties. Because of the adverse effects, FRA implemented a legally binding Programmatic Agreement (PA) for the Program entitled the *Programmatic Agreement Among the Federal Railroad Administration, Maryland State Historic Preservation Officer, National Railroad Passenger Corporation, and Preservation Maryland Regarding the Baltimore & Potomac Tunnel, Baltimore City, Maryland* that includes a detailed compliance process for mitigating the Program's adverse effects to historic properties. Stipulation VIII.A of the PA requires development and implementation of this UDP.

State Law

Legal protection and procedural guidelines for historic burials (Discussed in more detail in Section 4.0) is provided by the following state and city/county legislation:

- Maryland Code, Criminal Law Title 10, Sections 10-401 to 10-404 (2010) (i.e. the Maryland Burial Law: Crimes Relating to Human Remains);
- Maryland Code, Business Regulation Title 5, Section 101 (2016);
- Maryland Code, Health-General Title 4, Section 4-215 (2015); and
- Annotated Code of Maryland: Real Property, Title 14, Section 14-121.1

2.0 Archaeological Resources Identification

Federal law requires that federal agencies, their contractors, and their sub-contractors avoid, minimize, or mitigate a Program's adverse effect to underground or subsurface archaeological resources. Whereas every effort will be/was made to identify the potential for subsurface archaeological resources through the Supplemental Phase IA Survey and the Phase IB Survey, deeply buried archaeological deposits could still be encountered during the Program's demolition and construction activities.

Archaeological Resources

The process of identifying and recording archaeological resources has been incorporated into each stage of the planning for the Program and has included consideration to encounter a number of possible archaeological resources. For each area to be impacted by construction-related soil disturbance, Program archaeologists try to answer the following questions.

Are known archaeological resources present in this area?

Previously identified archaeological sites are resources uncovered during prior investigations and whose locations are known and mapped. Based on completed research and evaluation, there are no known pre-contact or historic period archaeological resources that should be impacted by the current project. However, as noted earlier, the Program APE has a higher potential for containing historic-era sites than Native American sites.

Could unrecorded archaeological resources be present in this area?

There is the potential that unrecorded archaeological resources may be present within the limits of disturbance (LOD). During the early stages of Program planning, specific areas of archaeological sensitivity were identified within the LOD based on historic land use (for historic period sites) and environmental settings (for pre-contact sites).

Could we find anything important during construction?

People have lived in the Maryland area for over 13,000 years and archaeological evidence has been found indicating human occupation within the Baltimore area on sites that date from 11,000 years ago through the twentieth century. Archaeologists look for evidence of pre-contact occupations such as shell middens, stone hearth features, stone tools, pottery sherds, and burials, as well as historic occupations that may include the remains of intact building foundations, usually brick or other masonry, and buried yard and alley surfaces that might contain concentrations of non-construction material such as broken pottery, glass, animal bone, oyster shell, coal and or coal ash. Prior to the twentieth century, many neighborhoods lacked indoor plumbing, and homes relied on privies, wells, and cisterns. Many of these features take the form of brick-lined shafts that extended deep into the ground; the lower section of these shafts may still be intact even if the associated buildings have been demolished. Often these shaft features served as a trash or disposal receptacle during the course of use and may contain hundreds or thousands of artifacts associated with one family from one time period. These items are particularly important despite them having

been considered trash in the past. These artifacts provide archaeologists with important information about past people and their lives.

Given the crowded conditions and the use of flammable building materials, urban sites often contain evidence of historic buildings destroyed by fire. As building fires often preserved remains of personal material contained in the consumed building, these kinds of archaeological remains also can be very significant in reconstructing the lives of its inhabitants. Evidence of burned historic buildings include significant amounts of burned building debris (brick, mortar, melted glass and metal), as well as concentrations of charcoal, ash and burned wood. Artifacts recovered from these urban contexts provide archaeologists with important information about past people and their lives, including socially or economically marginalized groups that may not have had their personal histories recorded.

Contractors and employees should be aware of the following and immediately contact a supervisor, who will contact Amtrak, if any of the following are discovered **(Note: the photographs provided only represent examples of some potential archaeological features, and that actual encountered features may differ in appearance)**.

2.1 Native American Archaeological Features

Native American archaeological sites usually lack structural features and can be more difficult to identify. However, they may contain concentrations of oyster shells, animal bone, stone flakes, unglazed pottery, charcoal, or fire altered stones/soils. Dense concentrations of these materials are referred to as "middens", the domestic trash deposits of Native American groups.

Shell Midden Layers or Trash Pit Features: The midden deposits may be uncovered as a dense horizontal layer, like a thick oyster shell midden deposit (Figure 2) or may be contained within a pit feature that was dug into the ground and may be exposed in the wall of a trench (Figure 3). Whether in a horizontal layer or pit, these features can often contain animal bones, broke/burned rocks and charcoal. Scattered oyster shells are commonly part of historic trash deposits as well, but dense concentrations of crushed or burned shell require careful examination by an archaeologist.

Figure 2: Intact Shell Midden Layer

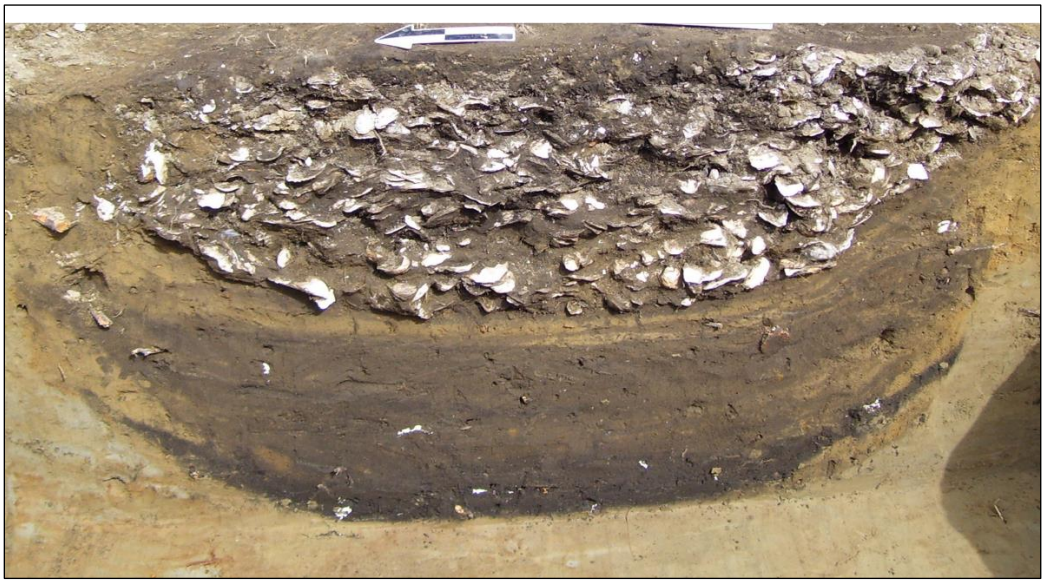


Figure 3: Intact Pit Feature with Shell Deposit

Stone Hearth Features: Another feature commonly encountered in Maryland is dense concentrations of small to medium-sized rocks formed into a cooking hearth. These hearth features often contain concentrations of dark charcoal, and the rocks and surrounding soil may show dark or reddish staining. Hearths can be exposed in a horizontal excavation (Figure 4) or identified within a pit feature (like Figure 3).

Figure 4: Intact Hearth Feature

Pre-contact Artifacts: While large, dense concentration of artifacts in discrete features may be encountered, it is also possible that light scatters or individual pre-contact period artifacts could be uncovered. The majority of artifacts uncovered on these sites are the result of flaked-stone tool manufacture. These include the waste stone flakes produced during the tool making process (Figure 5 - top), and well as finished or damaged stone tools like spearpoints or hafted knives (Figure 5 - bottom right). Pre-contact pottery sherds, formed of low-fired, un-glazed clay with simple surface marking may also be found (Figure 5 - below left).

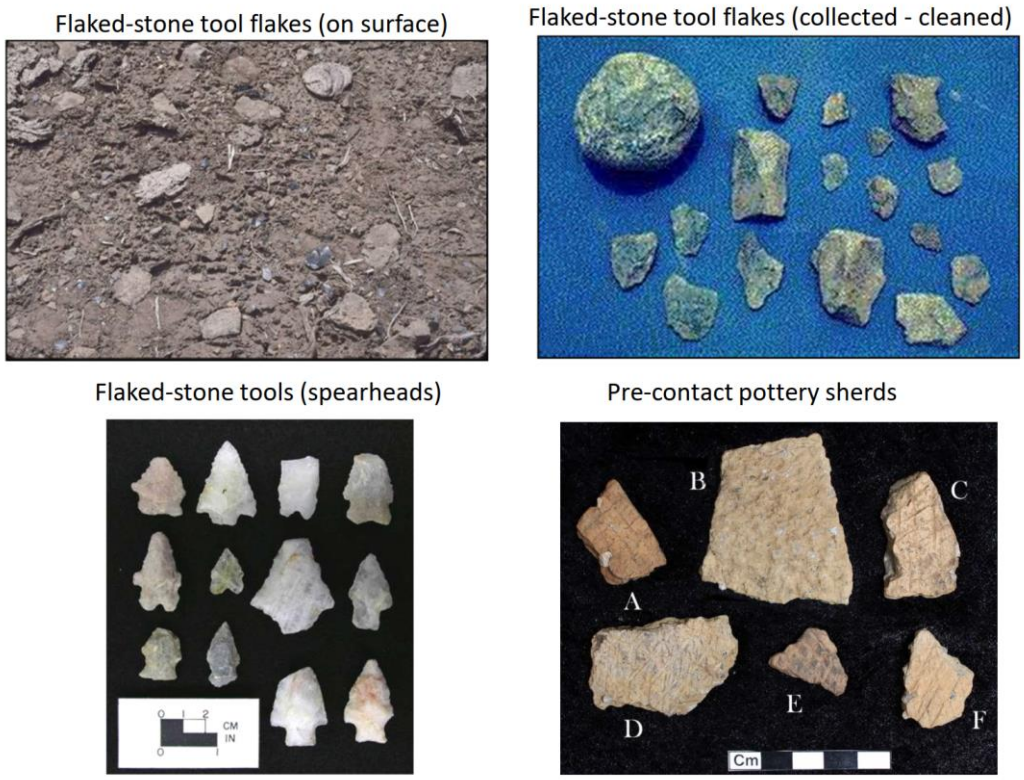


Figure 5: Pre-contact Artifact Examples

Burials and Human Remains: The possibility of encountering intact pre-contact period Native American burials of human remains in Baltimore City is very low. However, given the sensitivity in the treatment of any human remains and special consideration of the need to consult existing ancestral Native American tribes, any human remains encountered must be treated with the utmost care and dignity. Pre-contact period Native American burials can be identified by an oval shaped area of darker soil and the concentrated bones of one or more individuals. These burials will not exhibit the remains of a five-sided wooden coffin as illustrated in the historic example shown in Figure 16. Specific procedures for the treatment of burials and human remains are detailed in Section 3.0 below.

2.2 Historic Archaeological Features

Intact Streetcar/Trolley/Railroad Tracks: Many of the roads included in the LOD were part of earlier streetcar, trolley, or railroad networks. As a result, it is possible that intact metal rails and other features will be encountered directly below the current street paving (Figure 6).

Figure 6: Intact Streetcar/Trolley Tracks, as exposed in street.

Intact Stone Paving: Prior to the introduction of asphalt and concrete road paving, many streets were paved with cut stone blocks or rounded cobble stones (Figures 7 and 8). These earlier road surfaces may also contain the remains of early water and sewer systems consisting of clay or wooden pipes.

Figure 7: Intact Stone Block Paving, as exposed in excavation.

Figure 8: Intact Masonry Foundation and Cobble Paving, as exposed in excavation.

Intact Building Foundations: Although most eighteenth- and nineteenth-century buildings sat on brick foundations, it is possible that some stone foundations may be encountered (Figures 9 and 10). These foundation walls may surround buried basements and could contain important historic deposits.

Figure 9: Intact Brick Foundation, as exposed in excavation.

Shaft Features: Prior to the twentieth century, many neighborhoods lacked indoor plumbing, and homes relied on privies, wells, and cisterns. Many of these features take the form of brick-lined shafts that extended deep into the ground. When exposed, it is possible to identify the top of these features by a distinct circle or oval of bricks (Figure 10). These features were dry-laid to promote drainage and are characterized by a distinctive pattern of over-lapping bricks (Figure 11). Less frequently, these shaft features may have been formed by buried wooden boxes of fastened planks or by wooden barrels stacked on top of each other. These shafts were often filled with household debris before being sealed and abandoned, and may contain hundreds or thousands of objects from a specific time period. These are considered to be particularly important archaeological features.

THESE SHAFTS OFTEN CONTAIN INTACT BOTTLES THAT MIGHT BE OF SPECIAL INTEREST TO COLLECTORS. HOWEVER, REMOVAL OF ANY BOTTLES OR OTHER OBJECTS BY CONSTRUCTION PERSONNEL IS ILLEGAL AND <u>STRICTLY FORBIDDEN.</u>

Figure 10: Intact Brick Privy Shaft, Top of Privy Shaft, as exposed in excavation.

Figure 11: Intact Brick Privy Shaft, Side of Privy Shaft, after excavation.

Concentrations of Historic Material: Excavation may uncover scattered early architectural or construction debris such as broken brick, slate, window glass, mortar and plaster as well as broken fragments of pottery, bottles, shell or bone. This material usually occurs in disturbed or fill soils

and is usually of limited importance, as determined by a qualified archaeologist. Excavations may, however, encounter more densely concentrated historic material that may be the remains of wooden shaft features that have rotted away or concentrated refuse piles that could contain large amounts of important material (Figure 12).

Figure 12: Concentration of Historic Material (privy deposit).

Historic Bottle or Pottery Concentrations: While dense concentrations of historic domestic debris can be contained in lined shaft features, they can also occur as both dense surface or subsurface trash layers that could be encountered during either horizontal or vertical excavations. While a few broken glass bottles and jars are a common part of present-day street and yard debris, in the past, large quantities of these items were often deposited in the same location, forming dense "bottle dumps" (Figure 13). Historic bottle concentrations are defined here as five (5) or more intact bottles. These deposits may contain important information about a property or neighborhood, particularly if buried, and need to be carefully investigated. As noted previously, **THE REMOVAL OF BOTTLES OR ANY OTHER EXCAVATED MATERIAL FROM ANY CONSTRUCTION SITE IS ILLEGAL AND STRICTLY PROHIBITED.**

Figure 13: Historic Surface “Bottle Dump”, intact and broken bottles.

Baltimore City has a long and diverse industrial history as well, and some of the waste materials and byproducts of the city’s factories and manufacturers may also be encountered during excavation. Dense concentrations of debris from pottery kilns, containing piles or layer of broken, damaged and incomplete pottery vessels and kiln items (Figure 14) have been found in a number of places in the city. Dense concentrations of burned or unburned coal, reddish cinders or dark glassy slag material may indicate material associated with a nearby historic industrial plant or smaller manufacturer.

Figure 14: Historic Pottery and Kiln Deposit, as exposed in excavation.

Concentrations of Fire Debris: Remains of burned buildings and other fire debris may be encountered. This material can usually be identified by large amounts of charred wood and blackened brick, as well as melted glass and metal objects (Figure 15).

Figure 15: Concentration of Historic Fire Debris (burned wood).

Human Graves or Skeletal Material: Extreme care must be taken if any human remains are uncovered. There are very important legal procedures that must be followed if human remains of any kind are found. The LOD for the Program does not include any known cemeteries or burial grounds. However, given the sensitivity of any such discoveries, everyone working on construction must be especially careful and diligent. Historic period burials will almost always be enclosed in a wooden coffin with its characteristic four- or five-sided shape (Figure 16). Though the actual wood may have rotted away, the shape may still be visible as a darker stain in the soil. It is unlikely that construction excavation will uncover exposed human skeletons or loose human bones. However, it may be difficult to distinguish human bones from large animal bones. Any concentration of bones, especially those larger than commonly encountered small bones like individual chicken bones, should be immediately noted and reported following the procedure identified below in Section 4.0. Only qualified professionals should make determinations regarding any bones.

Figure 16: Human Remains, Intact Coffin, as exposed in excavation.

3.0 Notification Procedures for Archaeological Resources Other Than Human Remains

What do we do if we find something?

Identify, Protect and Report Archaeological Resources: In areas of high archaeological sensitivity, Program Archaeologists may be on-site to monitor demolition and construction activities, and identify potential archaeological resources in real time. In many areas, however, archaeologists may not be present during all construction excavation. In those areas, it will be the responsibility of the construction team to bring potential archaeological resources to the attention of construction supervisors who can contact Amtrak in order to have the discovery inspected by a qualified Archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for Archeology (36 CFR § 61). Specific archaeological reporting procedures will be provided to each construction crew, but the basic process follows these steps:

1. **Report Discovery:** The Contractor will immediately notify the Project Engineer or other appropriate staff of an unanticipated discovery.
2. **Stop Work and Protect the Resource:** The Project Engineer will direct a *Stop Work* order to the Contractor's site foreman to flag or fence (avoiding additional soils disturbance) off the archaeological discovery location within a 75-foot radius and direct the Contractor to take measures to ensure site security. The Contactor will ensure that any discovery made on a weekend will be protected until all appropriate parties are notified of the discovery. The Contractor will not restart work in the cordoned off area of the discovery until the Project Engineer has granted clearance.
3. **Report Location to Amtrak:** The Project Engineer will report the location and date of the discovery on the program plans and notifies Amtrak.
4. **Archaeologist Assesses Discovery:** Amtrak will arrange for a qualified Archaeologist to make an immediate site visit to determine whether the discovery constitutes an archaeological resource. If the Archaeologist determines no archaeological resource is present, they will prepare and submit a memorandum of the discovery including photographs to the file. Notification to the PA signatories and other consulting parties is not required if no archaeological resource is present.

   If the Archaeologist determines the discovery consists of non-significant archaeological deposits, such as isolated artifacts in non-native fill soils or scattered architectural/construction debris, they will prepare and submit a memorandum of the discovery including photographs to the file. Notification to the PA signatories and other consulting parties will NOT be required, unless recommended by the Archaeologist.

   If the discovery is an archaeological resource, the Archaeologist will assess the type, extent, and importance of the discovery and follow the notification and documentation procedures outlined in Steps 5-8, below. The Contractor will grant the Archaeologist

full access to the required site area and otherwise facilitate the Archaeologist's assessment in the most expeditious manner possible.

5. **Report Location to PA Signatories and Other Consulting Parties:** Amtrak will notify the PA signatories and other consulting parties and FRA will notify the federally recognized Native American tribes, if appropriate, within 48 hours of the discovery. As needed, FRA will also identify and invite other consulting parties to confer on the identified unanticipated discovery.

6. **Coordination with the PA Signatories and Other Consulting Parties:** If discovery constitutes an archaeological resource, Amtrak will prepare and submit a memorandum to FRA for review. The memorandum will include the proposed determination of NRHP eligibility of the discovery, an assessment of project effects on historic properties and any recommended treatment measures, if appropriate.

   Upon FRA's approval, Amtrak will submit the determination of NRHP eligibility, effects assessment, and/or recommended treatment measures document, if appropriate, to the MHT and other consulting parties, as appropriate, for review and comment. If the discovery is associated with Native American prehistory or history, FRA will provide the documentation to federally recognized Native American tribes within five (5) working days for their review with a request for comment. The signatories, other consulting parties, and federally recognized Native American tribes, if participating, will respond with any comments within five (5) working days of receipt.

7. **If the Discovery is Not Significant (Not NRHP Eligible):** If the FRA determines the discovery is not significant after consulting with the PA signatories and other consulting parties, Amtrak will inform the Project Engineer when it is a *Cleared Site* and work in the area may resume.

8. **If the Discovery is Significant (NRHP Eligible):** Amtrak will develop an archaeological site mitigation plan which will be submitted for review to the PA signatories and other consulting parties prior to implementation. Once the site mitigation plan is approved, all necessary archaeological investigations will be completed as quickly as possible. Construction work with the potential to disturb the archaeological resources will not be restarted until Amtrak informs the Project Engineer that it is a *Cleared Site* and work can resume.

4.0 Notification Procedures for Human Remains

It is not anticipated that burials or other human remains will be encountered during demolition or construction of the B&P Tunnel Replacement Program. However, given the legal requirements and cultural sensitivity related to human remains, special care should be taken to identify, protect, and report any human skeletal remains or other large intact bones (i.e., those larger than small bones like individual chicken bones). The procedures outlined below will be followed to immediately bring such discovery to the attention of the appropriate authorities without delay. There are very strict legal requirements related to the disturbance of human remains that must be followed.

If suspected human remains are discovered at any point, all work in the area of the discovery must immediately cease. It is crucial that all human remains (or potential human remains) be treated with the utmost respect and dignity. Any member of the construction team who believes an unanticipated discovery involving potential human skeletal remains has occurred is required to stop work in the immediate vicinity of the discovery. The basic process follows these steps:

1. **Report Discovery:** The Contractor will immediately notify the Project Engineer of an unanticipated discovery that may be human remains or other large intact bones.
2. **Stop Work and Protect the Resource:** The Project Engineer will direct a Stop Work order to the Contractor's site foreman to flag or fence off a 75-foot radius area around the possible human remains and any associated funerary objects without creating new ground disturbance in the vicinity and direct the Contractor to take measures to ensure site security in a manner that minimizes further exposure or damage to the remains from the elements, looting, and/or vandalism. Do not backfill or otherwise place heavy materials on the remains. The Contractor will not restart work in the area of the discovery until the Project Engineer has granted clearance.
3. **Report Location to Amtrak:** The Project Engineer will indicate the location and date of the discovery on the plans and will immediately notify Amtrak.
4. **Archaeologist Assesses Discovery:** Amtrak will arrange for a qualified Archaeologist to make an immediate site visit. The Archaeologist will **visually** assess the intact bones and determine whether the remains are animal (i.e., non-human) or human. The Contractor will grant the Archaeologist full access to the required site area and otherwise facilitate the Archaeologist's assessment in the most expeditious manner possible. **The remains will stay in situ and will not be moved or disturbed in any way in case this is determined to be a crime scene under Step #5a below.**
    a. **If the Remains are Non-Human within an Archaeological Context:** If the remains are determined to be animal (i.e., non-human), the Archaeologist will assess whether they occur in an archaeological context. If the remains are non-

human and are determined to occur within an archaeological context, the procedures outlined in Section 3.0, Steps 5-8 will be followed.

b. **If the Remains are Non-Human and NOT within an Archaeological Context:** If the remains are non-human and the Archaeologist determines that no archaeological resource is present, they will prepare and submit a memorandum of the discovery including photographs to the file. The Archaeologist will immediately advise Amtrak who will inform the Project Engineer that it is a *Cleared Site* and work in the area may resume.

c. **If the Remains are Human:** If the Archaeologist determines that the remains are human, Amtrak will immediately notify the Baltimore City Police Department to determine if the discovery is subject to a criminal investigation by law enforcement. Amtrak will also notify FRA and the other PA Signatories of the discovery within 24 hours.

5. **Law Enforcement Assesses Discovery as Potential Crime Scene:** Local law enforcement and, if necessary, a representative of the medical examiner's office will inspect the human remains to determine whether the site constitutes a crime scene.

   a. **If the Discovery is a Crime Scene:** If local law enforcement and a representative of the medical examiner's office declare the discovery as a criminal matter, the Archaeologist will have no further involvement and the decision to declare it a cleared site for construction will be made by the appropriate legal authorities. Amtrak will inform the Project Engineer when it is a *Cleared Site* and work in the area may resume.

   b. **If the Discovery is NOT a Crime Scene:** If the find is determined not to be a criminal matter, the Archaeologist will develop a research design/treatment plan which will be presented to Amtrak and FRA for review and consultation with MHT and other involved agencies. In the event the human remains encountered could be of Native American origin, whether pre-contact or historic, FRA will immediately notify the appropriate federally recognized Native American tribes and Maryland Commission on Indian Affairs (MCIA), and consult with them and the MHT to determine the treatment plan for the Native American human remains and any associated funerary objects that are present.

6. **Research Design/Treatment Plan:** Specific elements of the research design/treatment plan to be applied by the Archaeologist in the case of the unanticipated discovery of human remains include:

   - Consult with the next of kin or descendant community.

- Conduct careful removal of human remains and associated artifacts in a sensitive and respectful manner and as expeditiously as possible without causing further damage to the remains.
- Complete appropriate regulatory and legal documentation of analytical studies in a respectful manner and in keeping with the requests from the next of kin or descendant community.
- Identify an appropriate reinterment location and establish a protocol for reinterment with the next of kin or descendant community.

7. **Resume Construction Activities:** After the completion of the careful removal of human remains and associated artifacts by the archaeological team and prior to the initiation of an analytical studies and reinterment, the archaeologist will notify Amtrak. Amtrak will inform the Project Engineer that it is a *Cleared Site* and work in the area may resume.

5.0 Protocol for Media Inquiries

At no time and under no conditions should any team members (i.e., the Contractor, Subcontractors, Trades, the archaeologist, etc.) provide information or comment to the media regarding any Program-related activities. No media access will be granted to any archaeological location and no media photography will be permitted. All media inquiries should be referred to Amtrak Media Relations, which can be reached by phone at 202-906-3860, or by email at MediaRelations@amtrak.com.

In addition, the location and character of any uncovered archaeological resources is sensitive and protected information, and no mention or images or such remains will be included in any messages or posts to any social media platform or application.

How do I Report Historic Property Concerns?

In order to ensure that historic properties are protected during Program construction, Amtrak has established a line of responsibility on the construction site. This line of responsibility will reduce confusion, clarify accountability, and streamline any coordination and approvals that may be needed from Amtrak. To report an issue or concern to Amtrak, call 443-423-1115.

When in doubt, always contact your supervisor before proceeding!