Appendix B – Section 4(f) Evaluation

Howard Street Tunnel Project

Section 4(f) Evaluation

February 2021

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ACRONYMS AND ABBREVIATIONS

Notation	Definition
B&O Railroad	Baltimore & Ohio Railroad
CSX	CSX Transportation
DOI	Department of Interior
EA	Environmental Assessment
FRA	Federal Railroad Administration
HST	Howard Street Tunnel
HUD	United States Department of Housing and Urban Development
I-95	Interstate 95
OWJ	Officials with Jurisdiction
HST Project	Howard Street Tunnel Project
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation

1.0 PROJECT BACKGROUND

1.1 Project Description

The Howard Street Tunnel Project (HST Project) is proposed to improve clearance at the Howard Street Tunnel (HST) in Baltimore, Maryland and 22 other obstruction locations along the existing CSX Transportation (CSX) Interstate 95 (I-95) Rail Corridor between Baltimore and Philadelphia, Pennsylvania. Additionally, the HST Project will require the relocation of an interlocking site to facilitate the track lowering proposed at Woodland Avenue in Philadelphia. The HST Project consists of improvements that would remove all obstructions that restrict passage of modern double-stack intermodal trains along the corridor. The anticipated improvements, which consist of tunnel reconstruction, bridge replacement/modification and track lowering, will be constructed primarily within existing rail corridor rights-of-way. In addition, staging and storage activities are proposed at CSX's Bayview Rail Yard in Baltimore.

1.2 Alternatives Evaluated

Two alternatives are considered in the Project Environmental Asssessment (EA): 1) the No Build Alternative; and 2) the Build Alternative. The proposed Build Alternative is identified in the EA as the preferred alternative, as it satisfies the HST Project Purpose and Need. The No Build Alternative does not meet the Purpose and Need of the HST Project but is considered as a baseline for comparison to the Build Alternative.

Height clearance restrictions preventing modern double-stack service on CSX's I-95 Intermodal Corridor have been widely recognized for decades, and have been the focus of multiple studies and congressional investigations to improve rail operations and reduce congestion on some of the country's most heavily traveled highways. Several options have been considered to different extents for improving the corridor, as described in Section 2.1 of the EA.

New alignment options, such as those considered in prior studies, were not advanced due to a variety of issues ranging from a high-level complexity associated with needing to obtain new property for use as rail right-of-way and easements, extensive disruption to communities and the environment; and excessive costs and other variables that could further complicate and/or increase costs and impacts.

Recent advancements in construction methodologies have made it possible to achieve double-stack clearance heights through the existing HST at a significantly reduced cost and with fewer impacts to the surrounding community and environment. Modifications to and continued use of the existing HST would provide a comprehensive, cost-effective solution, creating double-stack connectivity while improving freight operation efficiency, network reliability and resiliency. This new less impactful approach is discussed below as the Build Alternative.

1.2.1 No Build Alternative

The No Build Alternative would involve no action to create a double-stack rail network to and from the Port of Baltimore and north along CSX's I-95 Rail Corridor. The existing single-stack capable railway section would remain operational without improving the double-stack connectivity constraint in the national freight rail network.

The No Build Alternative does not meet the Project's Purpose and Need for double-stack intermodal service along CSX's I-95 intermodal corridor. The No Build Alternative prevents CSX from running double-stack intermodal traffic through Baltimore on the current rail network and from offering competitive double-stack service to current rail customers along this route.

1.2.2 Build Alternative

The Build Alternative consists of improvements that would remove all obstructions restricting passage of modern double-stack intermodal trains, allowing for a 21-foot clearance along the noted stretch of the rail corridor between Baltimore and Philadelphia, Pennsylvania. In general, each of the physical obstructions consists of a bridge or tunnel along the corridor, for which a tailored approach to achieving clearance has been developed. At bridge obstructions, four conventional methods, or a combination thereof, were considered for increasing the vertical clearance: (1) lower tracks beneath the bridge; (2) modify the bridge; (3) raise the existing bridge; or (4) remove and replace the bridge. For tunnel obstructions, three conventional methods, or a combination thereof, will be used to increase vertical clearance: (1) lower tracks within the tunnel; (2) modify the arch and/or invert within the tunnel, or (3) open cutting and reconstructing the tunnel. More detailed information is included in Section 2.3 of the EA.

2.0 SECTION 4(F)-PROTECTED PROPERTIES

2.1 Regulatory Context

Section 4(f) of the United States Department of Transportation Act of 1966 as amended (49 U.S.C. 303(c) and 23 U.S.C. 138) is a Federal Law that protects the following types of properties during the planning and implementation of transportation projects: publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of an historic site of national, state, or local significance. "Historic site" includes any prehistoric or historic district, site, building, structure, or object included in or eligible for inclusion in, the National Register of Historic Places (NRHP). Section 4(f) applies to all transportation projects that require funding or other approvals by the United States Department of Transportation (USDOT). In November 2018, the USDOT's Federal Railroad Administration (FRA) formally adopted the Section 4(f) implementing regulations issued by the USDOT Federal Highway Administration (FHWA) and Federal Transit Administration at 23 CFR Part 774. FRA also follows the guidance in FHWA's Section 4(f) Policy Paper.

FRA cannot approve a transportation project that uses any Section 4(f) property, unless:

- FRA determines that there is no feasible and prudent avoidance alternative to the use of land from the property, and the action includes all possible planning to minimize harm to the property resulting from such use (23 CFR Part 774.3(a)); or
- FRA determines that the use of Section 4(f) property, including any measures to minimize harm (such as avoidance, minimization, mitigation, or enhancements measures) committed to by the applicant, will have a de minimis impact on the property (23 CFR Part 774.3(b)).

The Section 4(f) process includes coordination with Officials with Jurisdiction (OWJ) over the Section 4(f) resources. The OWJ for historic sites is the State Historic Preservation Officer or Tribal Historic Preservation Officer, if on tribal land. The OWJ for parks and other recreational resources is generally the property owner. FRA must also coordinate with the United States Department of Interior (DOI) when FRA makes a Section 4(f) finding or when a project would use property managed by DOI. As appropriate, FRA must also coordinate with the United States Department of Agriculture (USDA) and the United States Department of Housing and Urban Development (HUD), as well as relevant state and local officials.

2.2 Description of Section 4(f) Properties

A review of Section 4(f) properties within the Project Study Area was conducted by CSX during spring and summer 2020. This section inventories the 12 historic sites (11 in Maryland and 1 in Pennsylvania) that were identified in the HST Project Study Area. These resources are listed below beginning with the southern-most resource and moving north. No other Section 4(f) resources, such as parks, recreation areas, or wildlife/waterfowl refuges were identified.[1]

Howard Street Tunnel & Power House

The HST in Baltimore is 8,700 feet in length and was innovative for its use of electricity to illuminate the tunnel as well as to power locomotives through the tunnel. The brick tunnel is approximately 21 feet high and 27 feet wide and averages 50 to 65 feet below grade. The power house element is no longer extant.

The HST was listed in the NRHP on July 2, 1973. The tunnel is significant as an example of railroad engineering under Criterion C. The HST is also a contributing element of the Baltimore and Ohio (B&O) Railroad Baltimore Belt Line historic district.

B&O Railroad Baltimore Belt Line

The B&O Railroad Baltimore Belt Line is a 2.7-mile-long railroad constructed between 1891 and 1895 to connect B&O's Camden Station in Baltimore to Bay View Junction and its line to Philadelphia. Along the way, the railroad passes through at least 10 tunnels or overpasses, over as many bridges, and through multiple cuts lined with stone or modern concrete retaining walls. The HST Project includes the following impacts to contributing elements: proposed tunnel enlargement at the Howard Street Tunnel, center-span

[1] A small, planned public park, to be managed by the Baltimore City Department of Transportation, is planned for south of 26th Street and west of Guilford Avenue. At present, it is not considered a 4(f) resource because it is not identified in the Remington Neighborhood Plan adopted by the Baltimore City Department of Planning. The park is discussed in the EA in Chapter 3.1.9 Land Use and Community Facilities.

replacement at the North Avenue Bridge, and complete replacement of the Guilford Avenue Bridge and the Harford Road Bridge.

The B&O Railroad Baltimore Belt Line is an historic district determined eligible for listing in the NRHP on August 28, 2015 under Criterion A for its association with the transportation industry as the first electric railway in the United States and for providing the B&O with an all-rail route from Washington, D.C. to Philadelphia. The B&O Railroad Baltimore Belt Line is also eligible for the NRHP under Criterion C as it embodies distinctive characteristics of a late-nineteenth-to-early-twentieth-century railroad. Contributing elements within the historic district that would experience an impact as part of the HST Project include HST, Mount Royal Station, North Avenue Bridge, Huntingdon Avenue Bridge, Guilford Avenue Bridge, Greenmount Avenue Bridge, and Harford Road Bridge.

Mount Royal Station and Trainshed

This Baltimore, Italian Renaissance-style station is reminiscent of the Vendramini Palace in Venice, Italy. The central block of the train station is seven bays wide, flanked at either side by a three-bay wing. The iconic 143-foot-tall clock tower projects from the center bay. When it opened in 1896, the Mount Royal Train Station was one of the best examples of blending engineering and aesthetics in an urban environment.

Mount Royal Station was listed in the NRHP on June 18, 1973 under Criterion C for its architectural engineering. Mount Royal Station is further identified as an NHL on December 8, 1976 as one of the last gable-roof train sheds in the United States. Mount Royal Station is also a contributing element of the B&O Railroad Baltimore Belt Line historic district.

North Avenue Bridge

The North Avenue Bridge carries Baltimore's North Avenue over Falls Road, Jones Falls, Amtrak, CSX, and the light rail. The asymmetrical and elliptical nature of the bridge's design render it a unique example of a nineteenth-century stone arch bridge. This seven-span, stone arch bridge measures 888 feet long and approximately 100 feet wide. The three westernmost arches are approximately 130 feet wide. These arch barrels are constructed of coursed brick and rest on stone piers. The remaining four spans are 27 feet wide each and clustered in pairs. The exterior façades of the bridge are clad with coursed, cut stone.

The North Avenue Bridge was determined eligible for listing in the NRHP on April 3, 2001, under Criteria A and C as a well-preserved example of a stone arch bridge erected as part of the B&O Railroad's grade separation design and engineering campaign in Baltimore during the 1890s. The bridge facilitated the use of a number of railroad lines and was instrumental in connecting Baltimore with Washington, D.C.; Philadelphia, Pennsylvania; and New York. The North Avenue Bridge is also a contributing element of the B&O Railroad Baltimore Belt Line historic district.

Huntingdon Avenue Bridge

The bridge carrying Huntingdon Avenue over the CSX Railroad in Baltimore is a single-span stone arch bridge measuring 26 feet in length. The arch is lined with evenly shaped voussoirs, displaying a prominent keystone. The bridge abutments flare along the railroad.

The Huntingdon Avenue Bridge was determined eligible for listing in the NRHP on April 3, 2001, under Criterion C as a well-preserved example of a stone arch bridge erected as part of the B&O Railroad's grade separation design and engineering campaign in Baltimore during the 1890s. The Huntingdon Avenue Bridge is also a contributing element of the B&O Railroad Baltimore Belt Line historic district and is also within the Remington Historic District and was constructed during its period of significance.

Remington Historic District

The Remington Historic District in Baltimore is an approximately 30-block area east of Jones Falls comprising industrial and residential buildings. The district is primarily characterized by late 19th and early 20th century brick rowhouses, but also includes several gable-front workers' houses and duplexes. The HST Project would impact portions of the B&O Railroad Baltimore Belt Line within the district. The district was not subject to Section 106 review, as the activities at this location were exempt under the Program Comment.

The Remington Historic District was listed in the NRHP on January 17, 2017. The district is significant under Criterion A for association with the industrial history of Baltimore, including the railroad. It is also significant under Criterion C as an example of urban residential architecture erected between the 1880s and 1920s, and an example of how Baltimore city blocks were developed in the latter nineteenth century.

Charles Village/Abell Historic District

Charles Village/Abel Historic District is a distinctive, well-defined area in north central Baltimore comprising 45 blocks and approximately 1,500 buildings. The largely residential district is primarily composed of circa 1895 to 1915 rowhouses situated within the urban grid. There is a variety of housing types featuring eclectic architectural elements, such as pedimented front porches, bowed fronts, projecting bays, Dutch gables, pyramidal and conical foods, small balconies, and stained-glass windows and transoms. The HST Project would result in physical destruction of the Guilford Avenue bridge.

The Charles Village/Abell Historic District was listed in the NRHP on December 15, 1983. The district is significant under Criterion A for its association in the development of North Central Baltimore as the northernmost extension of the city's finest rowhome neighborhoods. It is also significant under Criterion C as an example of a transitional neighborhood between the heavily urbanized neighborhoods to the south and the garden suburbs to the north. The development of this area is also associated with locally important developers/builders such as Francis E. Yewell, who shaped the growth of many city neighborhoods around the turn of the twentieth century.

Guilford Avenue Bridge

The Guilford Avenue Bridge over CSX railroad in Baltimore is a single-span stone arch structure in Baltimore. It is 26 feet wide with abutments that flare along the railroad. The brick-lined barrel of the arch has been modified with concrete in sections. The stepped, stone abutments extend along the rail line. The original parapets have been capped with wrought-iron fencing.

The Guilford Avenue Bridge was determined eligible for listing in the NRHP on April 3, 2001, under Criteria A and C as a well-preserved example of a stone arch bridge erected as part of the B&O Railroad's grade separation design and engineering campaign in Baltimore during the 1890s. The Guilford Avenue Bridge is also a contributing element of the B&O Railroad Baltimore Belt Line historic district and the Charles Village/Abell Historic District.

Barclay Street Bridge

The Barclay Street Bridge in Baltimore is a single-span stone arch structure that has been altered with concrete portals. Stepped concrete parapets extend along the railroad track. A brick-lined arch covered with concrete reveals the original construction.

The Barclay Street Bridge was determined eligible for listing in the NRHP on April 3, 2001, under Criteria A as part of the B&O Railroad's grade separation design and engineering campaign in Baltimore during the 1890s. The bridge was modified in 1924 when the façades and abutments were replaced with concrete. The Barclay Street Bridge is also a contributing element of the B&O Railroad Baltimore Belt Line historic district.

Greenmount Avenue Bridge

The Greenmount Avenue Bridge in Baltimore is a 27-foot-wide single span stone arch structure. The eastern façade retains its stone construction while the western face of the bridge is clad with concrete. The abutments flare along the railroad. The original parapets have been replaced with concrete topped with a chain link fence. The brick-lined barrel of the arch is clad with cement.

The Greenmount Avenue Bridge was determined eligible for listing in the NRHP on April 3, 2001, under Criteria A and C as a well-preserved example of a stone arch bridge erected as part of the B&O Railroad's grade separation design and engineering campaign in Baltimore during the 1890s. The Greenmount Avenue Bridge is also a contributing element of the B&O Railroad Baltimore Belt Line historic district.

Harford Road Bridge

The Harford Road Bridge in Baltimore is a single-span stone arch structure. It is 26 feet wide with abutments that flare along the railroad. The original parapets have been replaced with concrete topped with a chain-link fence.

The Harford Road Bridge was determined eligible for listing in the NRHP on April 3, 2001, under Criterion C as a well-preserved example of a stone arch bridge erected as part of the B&O Railroad's grade separation design and engineering campaign in Baltimore during the 1890s. The Harford Road Bridge is also a contributing element of the B&O Railroad Baltimore Belt Line historic district.

Clifton Park Junior High School

Clifton Park Junior High School in Baltimore is a three-story Colonial Revival-style masonry building designed by architect Josias Pennington and constructed in 1923 by contractor J. Henry Miller, Inc.

The Clifton Park Junior High School was determined eligible for listing in the NRHP on December 2, 2020, under Criteria A and C for its association with the City of Baltimore's plan to expand and improve its school facilities by constructing new buildings designed by prominent local architects that embodied modern pedagogy.

Boone Tunnel

This cut stone tunnel located in Delaware County, Pennsylvania, was erected in 1885 by the B & O Railroad. Chester Pike crosses over the tunnel and the CSX rail line. The tunnel is composed of stone side walls, a brick arch vault, and stone portals. The tunnel is 30 feet wide, 18 feet, 5 inches high, and 627 feet long.

Boone Tunnel was determined eligible for the NRHP on June 2, 1997 and was reevaluated as part of the Section 106 process for the HST Project and confirmed to remain eligible for NRHP listing. It is significant under Criterion C for its significant design and as a unique example of its type that retains a high degree of integrity in design, materials, and workmanship.

3.0 USE OF SECTION 4(F)-PROTECTED PROPERTIES

3.1 Uses

This section identifies uses of Section 4(f) properties for the Build and No-Build Alternatives, as described in Section 1.2 above. More detailed discussion of the alternatives is included in Section 2.3 of the EA.

A "use" pursuant to 23 CFR Part 774.17 may occur in the following ways:

- When and is ***permanently incorporated*** into a transportation facility;
- A ***temporary occupancy*** occurs when a Section 4(f) property is required for project construction-related activities, such as staging or access areas, and causes an adverse effect in terms of the statute's preservation purpose as defined in 23 CFR Part 774.13(d);
- When there is a ***constructive use*** of a Section 4(f) property, which occur when a project does not physically incorporate a Section 4(f) property, but its proximity impacts substantially impair the activities, features, or attributes that qualify the property for protection.

3.2 No Build Alternative

The No Build Alternative would not result in any construction activities; therefore, no use of 4(f)-protected properties would occur.

3.3 Build Alternative

3.3.1 Section 4(f) Use

The Build Alternative would not result in any permanent incorporation of Section 4(f) properties into a transportation facility that would qualify as a Section 4(f) use because HST Project impacts to Section 4(f) properties qualify as exceptions to Section 4(f), except for one at the NRHP-eligible Clifton Park Junior High School. As described below, the remaining impacts to Section 4(f) properties meet the criteria for exception under 23 CFR Part 774.13(a)(2) because the properties are historic transportation facilities. Track lowering activities at the Harford Road bridge location would result in a *de minimis* impact to a Section 4(f) property, the Clifton Park Junior High School.

No Section 4(f) properties will incur a constructive use per 23 CFR Part 774.15 (i.e., a severe proximity impact that results in substantial impairment). Section 106 consultation included an assessment of potentially adverse noise and vibration effects to historic properties and none were identified.

3.3.2 Exceptions to Section 4(f) Use

23 CFR Part 774.13 identifies various exceptions to the requirements for Section 4(f) approval. The following exception is applicable to the Build Alternative:

- **23 CFR Part 774.13(a)(2)** - The use of historic transportation facilities in certain circumstances, including improvement of railroad or rail transit lines that are in use or were historically used for the transportation of goods or passengers, including but not limited to maintenance, preservation, rehabilitation, operation, modernization, reconstruction, and replacement of rail transit line elements, except for: (i) stations, (ii) bridges or tunnels on rail lines that have been abandoned, or (iii) historic sites unrelated to railroad transit lines (23 CFR Part 774.13(a)(2)).

Table 1 provides information on the applicable exception for each impacted Section 4(f) property.

Table 1. Exceptions for Impacted 4(f) Properties

Section 4(f) Property	NRHP Status and Contributing Resources	Impact
Howard Street Tunnel & Power House	- Individually listed - Contributes to B&O Baltimore Beltline Historic District - Within the NRHP boundary for the Bolton Hill Historic District	Track lowering through the length of the tunnel consistent with an improvement of railroad or rail transit lines that are in use.
B&O Railroad Baltimore Belt Line Historic District	- Contributing resources include: • Howard Street Tunnel & Power House • Mount Royal Station • Camden Station • North Avenue Bridge • B&O Railroad Baltimore Belt Line Bridge over Jones Falls Valley • Huntingdon Avenue Bridge • Guilford Avenue Bridge • Barclay Street Bridge • Greenmount Avenue Bridge • Harford Road Bridge	Alterations or complete replacement of multiple contributing elements: Howard Street Tunnel & Power House, North Avenue Bridge, Guilford Avenue Bridge, and Harford Road Bridge
Mount Royal Station and Trainshed	- Individually listed - NHL - Contributes to B&O Railroad Baltimore Belt Line Historic District	Impact to the property is confined to track lowering at the entrance to HST consistent with an improvement of railroad or rail transit lines that are in use.
North Avenue Bridge	- Individually eligible - Contributes to B&O Railroad Baltimore Belt Line Historic District	Replacing portion of bridge that spans CSX railroad consistent with an improvement of railroad or rail transit lines that are in use.
Huntingdon Avenue Bridge	- Individually eligible - Contributes to B&O Railroad Baltimore Belt Line Historic District	Track lowering and extension of footers supporting the railroad bridge consistent with an improvement of railroad or rail transit lines that are in use.
Remington Historic District	- NRHP Listed - Contributing feature: B&O Railroad Baltimore Belt Line	Track lowering and extension of footers supporting the Huntingdon Avenue bridge, track lowering and retaining wall work at the Sisson Street bridge consistent with an improvement of railroad or rail transit lines that are in use.

Section 4(f) Property	NRHP Status and Contributing Resources	Impact
Charles Village/Abell Avenue Historic District	- NRHP Listed - Contributing feature: Guilford Avenue Bridge	Replacement of the bridge carrying Guilford Avenue over CSX consistent with an improvement of railroad or rail transit lines that are in use.
Guilford Avenue Bridge	- Individually eligible - Contributes to B&O Railroad Baltimore Belt Line Historic District	Replacement of the bridge carrying Guilford Avenue over CSX consistent with an improvement of railroad or rail transit lines that are in use.
Barclay Street Bridge	- Individually eligible - Contributes to B&O Railroad Baltimore Belt Line Historic District	Track lowering and extension of footers supporting the railroad bridge consistent with an improvement of railroad or rail transit lines that are in use.
Greenmount Avenue Bridge	- Individually eligible - Contributes to B&O Railroad Baltimore Belt Line Historic District	Track lowering and extension of footers supporting the railroad bridge consistent with an improvement of railroad or rail transit lines that are in use.
Harford Road Bridge	- Individually eligible - Contributes to B&O Railroad Baltimore Belt Line Historic District	Replacement of the bridge carrying Harford Road over CSX consistent with an improvement of railroad or rail transit lines that are in use.
Boone Tunnel	Historic Railroad Tunnel	Replacement of tunnel with a box girder bridge consistent with an improvement of railroad or rail transit lines that are in use.

3.3.3 De minimis Impact

A temporary easement is required within the NRHP boundary for the Clifton Park Junior High School to allow for minor earthwork in the southwest corner of the property. The resulting grade will be slightly higher—less than three feet—than the existing ground at that location. Fill material would be added to raise the area's elevation to the same level as the raised grade of Harford Road and the adjacent sidewalk. This work entails stripping of existing grass, introduction of topsoil, grading, and planting grass. That portion of the historic property is grassy land sloping down towards the west elevation of the school building, with concrete sidewalks and landscaping.

Effects to this historic property were assessed during the Section 106 review for the HST Project. MHT concurred on February 19, 2021, that the temporary easement and work activities on the property would not constitute an adverse effect to the property. No portion of the historic property would be acquired as

permanent right-of-way. The scope of work is minor and would not cause an adverse effect to the historic property, as the land's appearance does not contribute to the property's historic significance. The land would be returned to its original appearance, and with a largely undetectable change in grade. The earthwork would not result in a change of use or character of the property that would diminish its historic significance.

FRA determined that the use of the property will therefore have a *de minimis* impact on the historic property, as defined in 23 CFR 774.17. All communication regarding cultural resources may be found in Appendix K of the Project Environmental Assessment.