

Susquehanna River Rail Bridge Project

Appendix D

Cultural Resources



March 2017

Effects Assessment for Historic Architectural Resources

**Susquehanna River Rail Bridge, Perryville, Cecil County and
Havre de Grace, Harford County, Maryland
for Review under Section 106 of the
National Historic Preservation Act**



Prepared for:

Federal Railroad Administration
Maryland Department of Transportation
National Railroad Passenger Corporation (Amtrak)

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EXECUTIVE SUMMARY

The Federal Railroad Administration (FRA) and the Maryland Department of Transportation (MDOT) have developed this report to assess the potential effects on historic architectural resources resulting from the Susquehanna River Rail Bridge Project (Project). The MDOT, Project sponsor, is proposing to replace the Susquehanna River Rail Bridge between the City of Havre de Grace, Harford County, Maryland and the Town of Perryville, Cecil County, Maryland, in order to provide continued rail connectivity along the Northeast Corridor (NEC). The FRA is providing funding for the Project under its High-Speed Intercity Passenger Rail Program and is the lead federal agency; the National Railroad Passenger Corporation (Amtrak), as bridge owner and operator, is providing conceptual and preliminary engineering designs and is acting in coordination with MDOT and FRA.

This assessment has been prepared in accordance with Section 106 of the National Historic Preservation Act (NHPA, as amended) and associated implementing regulations in 36 C.F.R. 800. In accordance with Section 36 C.F.R. Part 800.16 (y), the Project is considered a federal undertaking. Per Subpart A, Section 800.2(a)(3) and 800.2(c)(4) of 36 C.F.R., FRA is authorizing the Project sponsor, as applicant for federal funding and approvals, to prepare information, analyses, and recommendations regarding Section 106 consultation for the referenced Project. Section 106 mandates that federal agencies consider the effects of their actions on any properties listed on or determined eligible for listing on the National Register of Historic Places (NR) and afford the federal Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings.

In June 2014, as the first step in evaluating the Project's potential effects on historic architectural resources, FRA/MDOT, in consultation with the Maryland Historical Trust (MHT), established the Project's Area of Potential Effects (APE). From June 2014 to February 2015, FRA/MDOT conducted historic sites surveys of the APE in consultation with the MHT. During this identification phase of the Section 106 process, FRA/MDOT identified within the APE eleven historic architectural resources that were previously listed on or determined eligible for listing on the NR. In addition, FRA/MDOT evaluated an additional three historic architectural resources as eligible for inclusion on the NR and 73 properties that, although over 50 years old, did not appear eligible for the NR. In April 2015, the MHT concurred with FRA/MDOT's evaluations.

Following a two-step screening process of Project alternatives, two alternatives (9A and 9B) were retained for detailed environmental studies, including the Section 106 effects assessment. As part of the current study, FRA/MDOT assessed the effects of these two alternatives on all historic architectural resources listed on or determined eligible for listing on the NR, utilizing the criteria for effect and adverse effects within the Section 106 regulations, 36 C.F.R. 800.5 and 800.16. As a result of this analysis, FRA/MDOT determined that the Project would have an adverse effect on the Susquehanna River Rail Bridge (including 8 related undergrade rail bridges) (HA-1712), the Havre de Grace Historic District (HA-1125), the Rodgers Tavern (CE-129), and the Perryville Railroad Station (CE-1442). FRA/MDOT have therefore consulted with the MHT, Amtrak, ACHP, the Section 106 consulting parties (see list in Appendix B), and the public, in order to explore measures to avoid, minimize, or mitigate the adverse effects.

Any agreements pertaining to adverse effects on historic architectural or archaeological resources will be incorporated into the Project's Memorandum of Agreement (MOA), which FRA/MDOT are developing in consultation with the Section 106 consulting parties. In addition, the information obtained during the consultation process, as well as the results from the Project's *Phase IA Archaeological Assessment*, will be used in the Environmental Assessment (EA) being developed for this Project in compliance with the National Environmental Policy Act, 42 United States Code (U.S.C.) §4321 *et seq.* (NEPA).

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APPENDICES

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- Appendix B. List of Consulting Parties
- Appendix C. June 16, 2014 Section 106 Consultation Letter from Beth Cole, Maryland Historical Trust, to David Valenstein, Federal Railroad Administration
- Appendix D. November 12, 2014 Section 106 Consultation Letter from Tim Tamburrino, Maryland Historical Trust, to Angela Willis, Maryland Transit Administration
- Appendix E. April 22, 2015 Section 106 Consultation Letter from Elizabeth Hughes, Maryland Historical Trust, to Angela Willis, Maryland Transit Administration
- Appendix F. Comments Relating to Historic Resources from Consulting Parties and the Public

1. INTRODUCTION

1.1. BACKGROUND

The Federal Railroad Administration (FRA) and the Maryland Department of Transportation (MDOT) have developed this report to assess the potential effects on historic architectural resources resulting from the Susquehanna River Rail Bridge Project (Project). The MDOT, Project sponsor, is proposing to replace the Susquehanna River Rail Bridge, which is located at Milepost 60 on the Northeast Corridor (NEC) between the City of Havre de Grace, Harford County, Maryland and the Town of Perryville, Cecil County, Maryland (see **Figure 1**).

Under the High-Speed Intercity Passenger Rail Program, the U.S. Secretary of Transportation selected the MDOT for an award of \$22 million through a cooperative agreement between the FRA and MDOT for the preliminary engineering and National Environmental Policy Act of 1969 (NEPA) phases of the Project. The FRA is the lead federal agency; the National Railroad Passenger Corporation (Amtrak), as bridge owner and operator, is providing conceptual and preliminary engineering designs and is acting in coordination with MDOT and FRA.

For the purposes of this effects assessment, the Project Site is defined as the FRA grant Project limits, which span approximately six miles, between the “Oak” Interlocking at Milepost 63.5 south of the City of Havre de Grace, and the “Prince” Interlocking at Milepost 57.3 north of the Town of Perryville (see **Figure 2**).

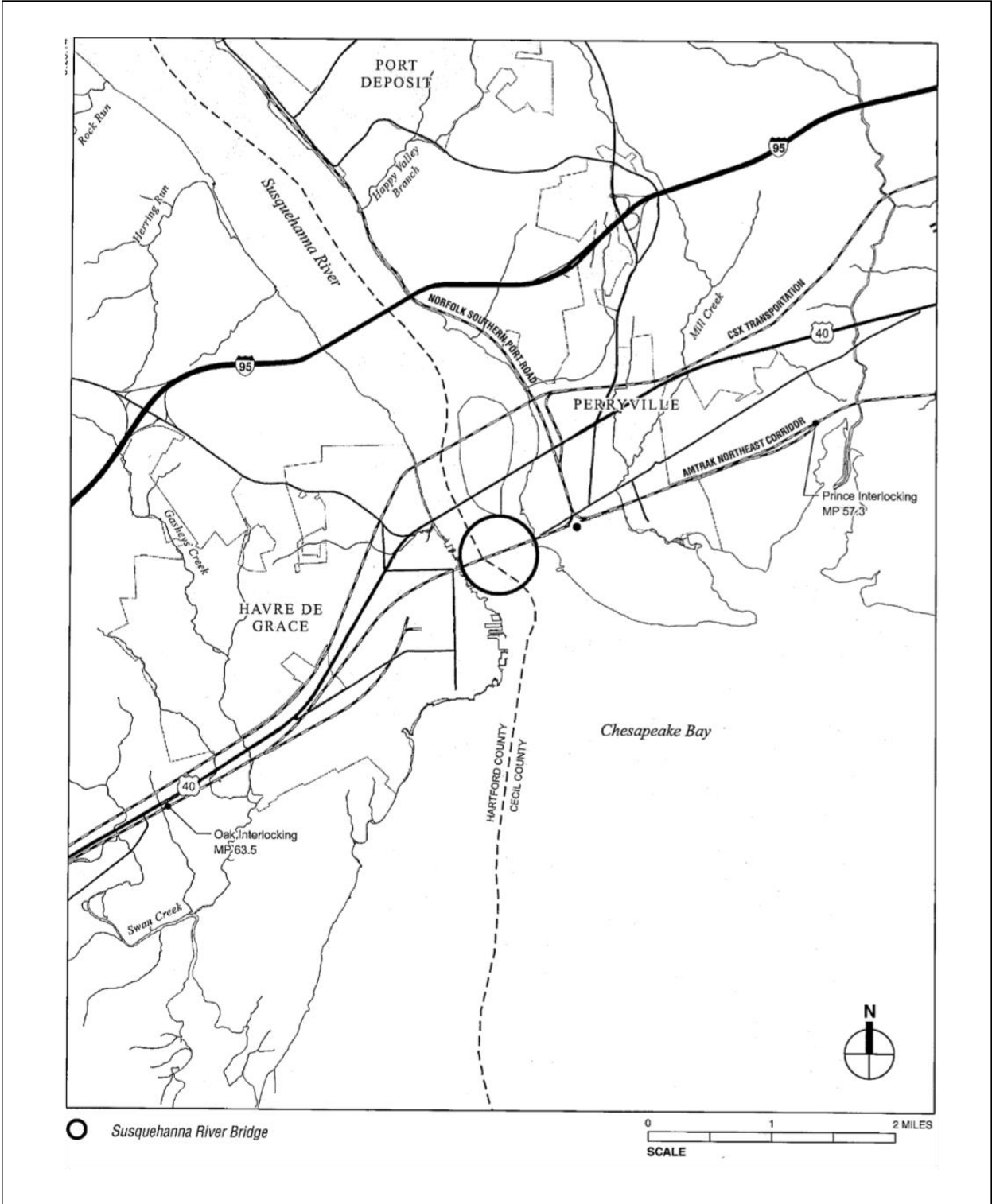
The 110-year-old Susquehanna River Rail Bridge (see **Figure 3**) is a critical link along one of the U.S. Department of Transportation’s (USDOT) designated high-speed rail corridors. The bridge is used by Amtrak, Maryland Area Regional Commuter (MARC), and Norfolk Southern Railway (NS) to carry intercity, commuter, and freight trains across the Susquehanna River.

In the Project area, the NEC runs northeast to southwest, but Amtrak has designated the directions of the line as “north” and “south.” In this report, specific references to the Project and the tracks utilize Amtrak’s designation of north-south to indicate the directions of the tracks and east-west to indicate the sides of the tracks. For non-railroad resources, true geographic directions are used.

1.2. PROJECT NEED

The increasing age of the bridge, its structural condition, and its limitations of two tracks curtail speeds and capacity on the bridge. This situation inhibits the rail operators’ goals to provide reliable service, MDOT’s plans to increase MARC rail service, and Amtrak’s plans to increase high-speed passenger rail service on the NEC. The goals of the Project include:

- Improve rail service reliability and safety;
- Improve operational flexibility and accommodate reduced trip times;
- Optimize existing and planned infrastructure and accommodate future freight, commuter, intercity, and high-speed rail operations; and
- Maintain adequate navigation and improve safety along the Susquehanna River.



Project Area Map

Susquehanna River Rail Bridge Project
 Perryville / Havre de Grace, Maryland

Figure 1

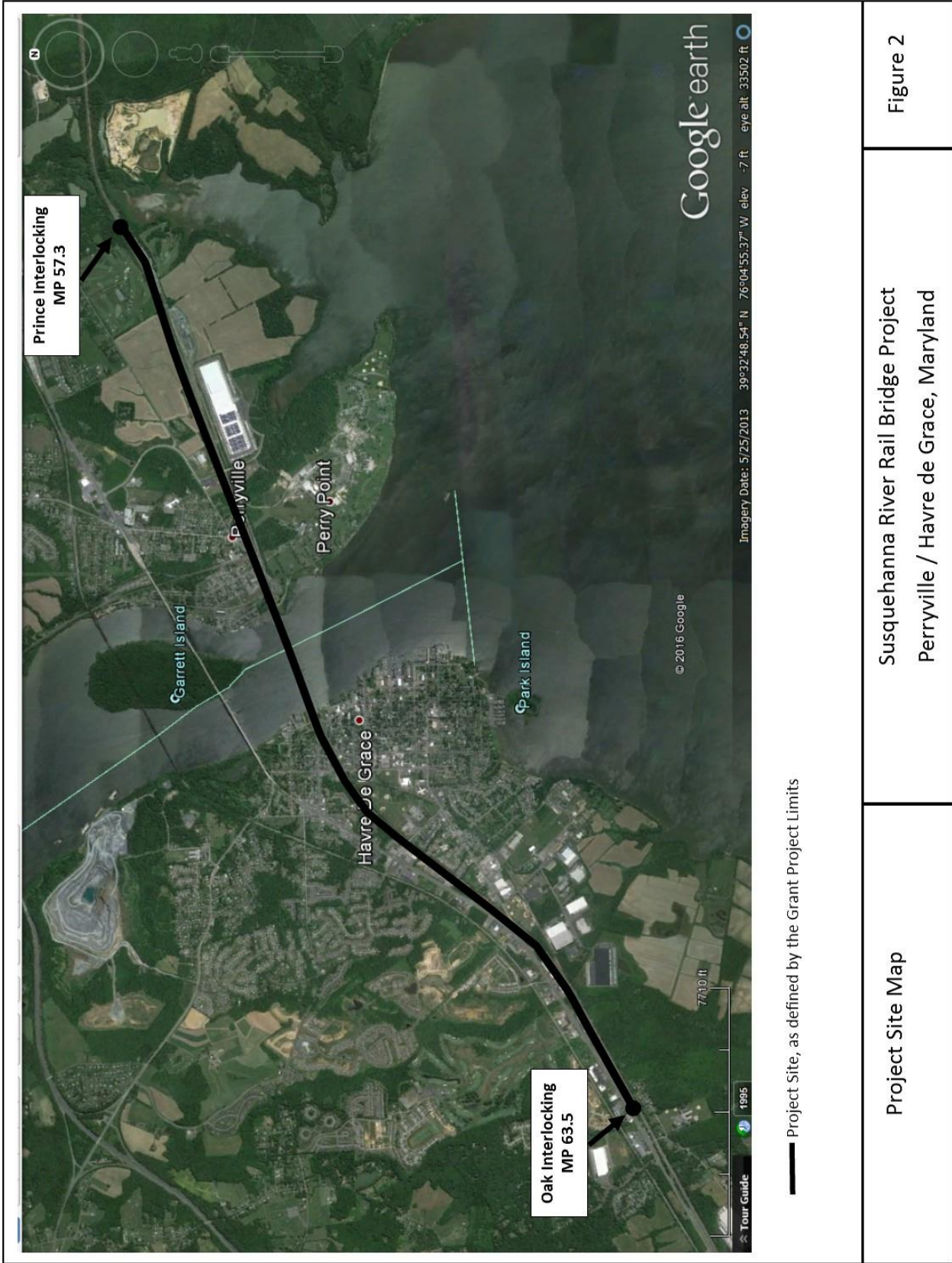




Photo 1: View looking southwest at the Susquehanna River Rail Bridge from Perryville.



Photo 2: View looking southeast towards the Susquehanna River Rail Bridge from the Southern Terminus, Susquehanna and Tidewater Canal.

Susquehanna River Rail Bridge	Susquehanna River Bridge Project Havre de Grace and Perryville, MD	Figure 3
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1.3. REGULATORY AUTHORITY

This report has been prepared in accordance with Section 106 of the National Historic Preservation Act (NHPA, as amended), associated implementing regulations in 36 C.F.R. 800, Section 4(f) of the USDOT Act, and the NEPA. Section 106 mandates that federal agencies consider the effects of their actions on any properties listed on or determined eligible for listing on the National Register of Historic Places (NR) and afford the federal Advisory Council Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings.

In accordance with Section 36 C.F.R. Part 800.16 (y), the Project is considered a federal undertaking. Per Subpart A, Section 800.2(a)(3) and 800.2(c)(4) of 36 C.F.R., FRA is authorizing the Project sponsor, as applicant for federal funding and approvals, to prepare information, analyses, and recommendations regarding Section 106 consultation for the referenced Project.

The information used to prepare this report will also be used in the development of an Environmental Assessment (EA) under the authority of the FRA with MDOT as the Project sponsor. The EA is being prepared in accordance with NEPA (42 United States Code [U.S.C.] § 4321 *et seq.*), the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] parts 1500–1508), and FRA’s *Procedures for Considering Environmental Impacts* (64 Federal Register [FR] 28545 [May 26, 1999] and 78 FR 2713 [January 14, 2013]).

1.4. PREVIOUS CULTURAL RESOURCES EFFORT

This report builds upon several previous efforts that FRA/MDOT have undertaken as part of their compliance with Section 106 of the NHPA. These steps, explained more fully in Chapter 2, “Research Design,” are:

- April 14, 2014 initiation of the Section 106 consultation with the Maryland Historical Trust (MHT), Maryland’s State Historic Preservation Office.
- August 2014 preparation of a *Phase IA Archaeological Assessment* (“Phase IA”).
- September 24, 2014 submission of the results of a reconnaissance level historic architectural sites survey to the MHT.
- February 12, 2015 submission of the results of an intensive level historic architectural sites survey to the MHT.
- August 13, 2014, December 10, 2014, November 10, 2015, and April 14, 2016 public outreach information sessions, to which Section 106 consulting parties were invited; and March 9, 2015 and August 18, 2015 dedicated Section 106 meetings.

1.5. ALTERNATIVES DEVELOPMENT AND SCREENING

1.5.A. ALIGNMENT ALTERNATIVES

A two-step screening process (fatal flaw and detailed screening) was used to evaluate 25 alternatives, including 18 conceptual alternatives, a rehabilitation alternative, and six other alternatives. The Project Team of FRA/MDOT, Amtrak, and their engineering and NEPA consultants developed the 18 conceptual alternatives based on engineering design factors such as: geometry, design speed, bridge spacing, navigational clearances, grades, and relationships to other projects. The Project Team also evaluated rehabilitation of the existing bridge as an alternative. As the Project evolved, six other alternatives were developed, including three additional conceptual alternatives, two alternatives suggested by the public, and a value engineering alternative. Throughout the screening process, the Project Team considered input

provided through public outreach efforts, coordination with local officials, Section 106 consulting party meetings, interagency review meetings, and other stakeholder meetings.

The first step in the screening process was a “fatal flaw screening.” The fatal flaw screening evaluated the 25 alternatives based on significant impacts and on the ability of these alternatives to satisfy the following criteria developed from the Project’s Purpose and Need Statement: rail connectivity, navigational requirements, logical termini, feasibility and constructability, and avoidance of critical property impacts. The fatal flaw screening eliminated 15 alternatives, including the rehabilitation alternative, nine of the 18 conceptual alternatives, and five of the six other alternatives. Ten alternatives remained after the fatal flaw screening process.

The second step of the screening process (the “detailed screening”) evaluated the 10 alternatives that remained after the fatal flaw screening. The remaining conceptual alternatives were reviewed in more detail to assess their impacts on both the human and the natural environment, their ability to meet more specific design and operational criteria, and their consistency with NEC plans and programs.

Of the 10 alternatives that passed the fatal flaw screening and proceeded to detailed screening, two alternatives (Alternatives 9A and 9B) have been retained for detailed study (Project Plans submitted with this report). The primary differentiators in selecting these alternatives included: maximum authorized speed, potential property impacts, and the total number of tracks across the river. Based on operational information, a four-track river crossing (or a three-track river crossing with the potential for the addition of a fourth track) and a maximum authorized speed of 160 mph are desired to optimize the NEC as a high-speed rail corridor. Amtrak’s May 2010 NEC Master Plan was developed with planned speed increases up to a maximum authorized speed of 160 mph for this location along the NEC. This plan is consistent with the congressional mandate placed on Amtrak to reduce travel times along the NEC.

Alternatives 9A and 9B would improve rail service and reliability, improve operational flexibility, accommodate reduced trip times, optimize existing and planned infrastructure, maintain adequate navigation, and improve safety along the Susquehanna River. These build alternatives vary slightly by location and by maximum achievable speed. The build alternatives would construct two new high-level fixed bridges. These build alternatives could accommodate a four-track scenario or a three-track scenario with an option of a future fourth track expansion. For purposes of a conservative environmental review, this assessment analyzes the potential effects from a full four-track river crossing.

The difference between Alternative 9A and Alternative 9B occurs in Havre de Grace along the east side of the corridor from Lewis Lane to the Susquehanna River. Alternative 9B improves the curve in Havre de Grace and would allow for a maximum speed of 150 mph. This lower speed, as compared to Alternative 9A, reduces the amount of property acquisitions required, including the avoidance of the Havre de Grace Middle/High School athletic fields.

1.5.B. BRIDGE TYPE ALTERNATIVES

Independent of the Alignment Alternative Screening Process and selection of alternatives for detailed study, FRA/MDOT reviewed four bridge types for the Project. The bridge types are independent from the two-step screening process since any of the bridge types are feasible with the alternative locations under consideration. The four bridge design types are described below (and shown in **Figure 30** through **Figure 33**).

Truss Approach / Truss Main Span

Under this bridge design type, the proposed east bridge would have a total of 13 in-water piers. The proposed west bridge would have 13 in-water piers. Sixteen (16) piers would be removed from the existing bridge and 11 remnant piers would be removed, for a net reduction of one overall pier. The truss approach

/ truss main span bridge design is generally based on 260 foot approach spans, which are the portions of the bridge on either side of the central truss (see Photo 44, **Figure 30**).

Girder Approach / Truss Main Span

Under this bridge design type, the proposed east bridge would have a total of 19 in-water piers. The proposed west bridge would have 19 in-water piers. Sixteen (16) piers would be removed from the existing bridge and 11 remnant piers would be removed, for a net gain of 11 overall piers. The girder approach / truss main span bridge design is based on 170 foot approach spans, which are the portions of the bridge on either side of the central truss (see Photo 45, **Figure 30**).

Girder Approach / Arch Main Span

Under this bridge design type, the proposed east bridge would have a total of 19 in-water piers. The proposed west bridge would have 19 in-water piers also. Sixteen (16) piers would be removed from the existing bridge and 11 remnant piers would be removed, for a net gain of 11 overall piers. The girder approach / arch main span bridge design is based on 170 foot approach spans which are the portions of the bridge on either side of the central arch (see Photo 46, **Figure 31**).

Delta Frame Approach / Arch Main Span

This bridge design type consists of a network tied arch over the navigable channel with delta frames for the approach spans. Under this bridge design type, the proposed east bridge would have a total of 13 in-water piers. The proposed west bridge would have 13 in-water piers. Sixteen piers would be removed from the existing bridge and 11 remnant piers would be removed, for a net reduction of one overall pier. The delta frame approach / arch main span bridge design is generally based on 260 foot approach spans, which are the portions of the bridge on either side of the central arch (see Photo 47, **Figure 31**).

1.6. RESULTS OF DETAILED SCREENING: ALTERNATIVE 9A AND ALTERNATIVE 9B

Alternative 9A and Alternative 9B would construct a new two-track 90 mph bridge to the west of the existing bridge. On the existing alignment there would be constructed a second new two-track bridge that would accommodate for Alignment 9A 160 mph and for Alignment 9B 150 mph. The bridge to the west of the existing bridge would be constructed first, including the river spans, approach structures, railroad systems, and embankment. The use of conventional ballasted track is anticipated for the fixed bridge portion of this Project. Under normal operations, this bridge would be used primarily by MARC commuter rail and NS freight rail service.

Once the new bridge to the west is completed, the existing bridge would be taken out of service, demolished, and replaced. A new high-speed passenger bridge would be built in the center of the right-of-way of the existing bridge alignment. This bridge would improve the curve in Havre de Grace and allow for either 160 mph speeds for Alternative 9A or 150 mph speeds for Alternative 9B, with Alternative 9A requiring a greater amount of property acquisition. Since the west bridge will be built first, freight, MARC and Amtrak operations can be maintained throughout construction of both bridges. The south wye track (connecting the NS Port Road to the NEC in Perryville) would be realigned to accommodate the revised configuration of Perry Interlocking. Although these alternatives are based on a four-track scenario, they could accommodate a three-track scenario with an option of a future fourth-track expansion.

Alternative 9A and Alternative 9B would modify Perry Electrical Substation, but a substantial reconfiguration is not required. These alternatives would also demolish the remnants of the former Havre de Grace train station and require demolition of the Perry Interlocking Tower. The Project would extend the Havre de Grace abutment south towards Freedom Lane.

1.6.A. PROFILE CHANGES

For Alternative 9A and Alternative 9B, the new bridge structures would extend across the Susquehanna River between Union Avenue in Havre de Grace and Avenue A in Perryville. In Havre de Grace, the track would be supported on a retained embankment. On the east side, the retained embankment would extend from Union Avenue to a point approximately three-quarters of the way between Juniata Street and Lewis Lane. On the west side, the retained embankment would extend from Union Avenue to Juniata Street. From south of the Havre de Grace High School athletic fields to Oak Interlocking, the track would remain in its existing roadbed at grade. In Perryville, the track would be supported by a retained embankment, extending roughly from Avenue A to Mill Creek on the east side and from Avenue A to the existing south access road on the west side. From north of these limits to Prince Interlocking, the track would remain in its existing roadbed at grade. The track would also remain at grade along the south wye track.

The proposed profile will raise the elevation of the tracks between Perryville Station and Adams Street in Havre de Grace. Approximate limits of the raises in elevation are as follows:

- Access Road UG 59.52 in Perryville - 1 foot
- North Abutment, Susquehanna River Rail Bridge in Perryville - 2.5 feet
- Navigation Channel of the Susquehanna River - 14 feet
- South Abutment in Havre de Grace - 6 feet
- Stokes Street in Havre de Grace - 3 feet
- Adams Street in Havre de Grace - 2 feet

Alternative 9A and Alternative 9B provide a vertical clearance of 60 feet above mean high water (MHW). Both the east and west bridges would be approximately 38 feet wide with a top-of-rail elevation of 72 feet above MHW. The top of the proposed arch structure spanning the navigation channel would be approximately 152 feet above MHW. The top of the transmission lines would be 190 feet above MHW.

1.6.B. APPROACH STRUCTURES

There are four existing undergrade structures located on the Perryville approach, including the southern wye track crossing of Broad Street, that will require modification to accommodate the proposed track alignments. There are seven undergrade structures and one overhead structure between the Susquehanna River and Grace Interlocking in Havre de Grace that will require modifications to accommodate the proposed track alignments. The improvements to Grace Interlocking require Track 4 to shift six feet west, resulting in permanent disturbances extending 35 feet from the existing Track 4. This will require extending the culvert at the Lily/Lewis Run crossing. The required modifications to these structures are shown in **Table 1**. Alternative 9A and Alternative 9B require long sections of track to be built away from the existing corridor on fill. Retaining walls are recommended in order to minimize right-of-way acquisition.

1.6.C. COMMUNICATIONS SYSTEM

Continuity of the Open Transport Network (OTN) system must be maintained during all phases of construction. The existing fiber cables will be maintained in place until cutover to new cable has occurred. It is anticipated that new fiber cable for the OTN system signal system will be installed throughout the Project limits of the overhead contact system replacement. Twenty-four fiber cable will be implemented. New signal houses and block points will be interfaced via local fiber cable and connected to the OTN for communications to Centralized Electrification and Traffic Control (CETC).

1.6.D. SIGNAL SYSTEM

The signal system design will be based on the new track configuration. A new Grace Interlocking will be constructed to extend the length of the interlocking south. A new signal system will be installed at Grace, Perry and Prince Interlockings. New signal houses will be installed at Grace and between Perry and Prince Interlockings.

1.6.E. TRACTION POWER

Amtrak's Perry Electrical Substation is located adjacent to the existing right-of-way. Alternatives 9A and 9B would have minimal impact to Perry Electrical Substation interconnections. These alternatives would modify Perry Electrical Substation. The transmission tower on the west side of the tracks would also be modified or relocated on-site.

1.6.F. OVERHEAD CONTACT SYSTEM

All existing electrified tracks within the Project's limits will be upgraded to an auto-tensioned style catenary. The proposed auto-tensioned catenary will be designed to support the new track speeds in accordance with Amtrak and American Railway Engineering and Maintenance-of-Way Association (AREMA) standards. New catenary structures, wires, and power sectionalization configurations will be proposed for Grace, Perry and Prince Interlockings based on the track options and staging plans.

1.6.G. IMPACTS TO INTERLOCKINGS

Prince Interlocking

Prince Interlocking is located at Milepost 57.3, north of the existing bridge. The limits of the interlocking will not change; there will only be minor track switch changes. An existing 45 mph track switch will be removed and replaced with an 80 mph track switch, and a second 45 mph track switch will be removed from service.

Perry Interlocking

Perry Interlocking is located at Milepost 59.5, south of Prince Interlocking, but north of the existing bridge. The portion of Perry Interlocking on the NEC Mainline will be completely reconfigured in conjunction with the alignment changes required to build the two new bridges. However, the portion of the interlocking that leads to the Port Road Branch, geographic north of Broad Street, will not be modified.

Grace Interlocking

Grace Interlocking is located at Milepost 61.5, south of the existing bridge, and south of the curve in Havre de Grace. This interlocking will be substantially modified. The southern limits will be extended and the existing three 80 mph track switches will be removed and replaced with seven 80 mph track switches.

Oak Interlocking

No changes are planned for Oak Interlocking, which is located at Milepost 63.5, south of the existing bridge.

2. RESEARCH DESIGN

The primary purposes of this report are to evaluate the Project's effects on historic architectural resources, assess whether or not any effects are adverse, and suggest measures to avoid, minimize, or mitigate adverse effects. A summary of previous efforts to identify historic properties within the Project's Area of Potential Effects (APE) as well as the steps in the current study to assess effects is provided below. In addition, Chapter 3 provides the historic and architectural context; Chapter 4 the Results of the Field Investigations; Chapter 5 the Analysis of Effects and Adverse Effects; and Chapter 6 the Summary and Recommendations.

This report has been prepared by ARCH², Inc. in accordance with Section 106 and the MHT's "Standards and Guidelines for Architectural and Historical Investigations in Maryland," and is based upon the identification level work conducted by AKRF, Inc. The architectural historians who conducted both the identification of historic resources and the assessment of effects meet the *Secretary of the Interior's Professional Qualification Standards* cited in 36 CFR Part 61 (see the Principal Investigator's resume included in Appendix A). Work included background research, site visits, and photographic documentation of all relevant properties within the APE, preparation of MHT's Determination of Eligibility (DOE) forms as appropriate for all properties meeting the age criterion for NR eligibility, and review of concept plans for the Project to assess potential effects in accordance with the definitions for effect and adverse effect in Sections 36 CFR Part 800.5 and 800.16.

The following steps were undertaken as part of the architectural resources analysis:

- Based on a review of the Project concept and fieldwork, FRA/MDOT, in consultation with the MHT, identified the Project's APE for architectural resources. The FRA initiated the Section 106 consultation process in April 2014 by sending an initiation package to the MHT. The package included an overview of the proposed undertaking, proposed APE delineation analysis methodologies, and a list of potential consulting parties. On June 16, 2014, the MHT responded to the Project initiation, approving the APE, concurring with the overall approach for conducting the cultural resources investigations, and approving the list of consulting parties with the suggested addition of the Perry Point Veterans Administration Medical Center and the Maryland Commission on Indian Affairs (see Appendix C).
- FRA/MDOT inventoried architectural resources within the APE that had been previously evaluated as historically significant. These resources included individual properties or historic districts listed on the Maryland Register of Historic Properties or the NR, properties determined eligible for such listing as part of other cultural reviews unrelated to the current bridge project, and properties included in the Maryland Inventory of Historic Properties (MIHP), https://mht.maryland.gov/research_mihp.shtml. The MIHP is merely a listing of resources with potential value to the prehistory or history of Maryland; inclusion in the MIHP involves no regulatory restrictions or controls.
- FRA/MDOT conducted a reconnaissance-level survey of the APE to identify any "potential historic architectural resources" (properties that appear to meet eligibility criteria for listing on the NR) based on 36 CFR § 800.4 of NHPA. All properties within the APE that were 50 years old or older were surveyed and assessed as to whether or not they meet the NR criteria. The Maryland Register of Historic Properties consists of properties either listed on or eligible for the NR; therefore, the survey did not include a separate evaluation of eligibility for the Maryland Register.
- The Project area contains four previously identified historic resources that have strong ties to transportation history: the Susquehanna River Rail Bridge, the Rodgers Tavern, the Perryville Railroad Station, and the Havre de Grace Historic District. It was therefore anticipated that transportation would be a strong historic theme in the Project area and that resources related to this important theme would have a high likelihood of meeting the criteria for inclusion on the NR.
- On September 24, 2014, FRA/MDOT submitted to MHT a request for guidance on potentially eligible resources; MHT responded on November 12, 2014 (see Appendix D), requesting a survey of the APE

Susquehanna River Rail Bridge Project

including Determination of Eligibility (DOE) forms for the western portion of the Town of Perryville, Perryville Methodist Church, and Perryville Presbyterian Church as well as any other resources that appear to have the potential to meet the National Register criteria, and a Short Form for Ineligible Properties that appear to be clearly ineligible.

- FRA/MDOT conducted fieldwork for the intensive level survey from December 8 - 12, 2014. An architectural historian documented all properties that were identified as being 50 years old or older within the APE (based on tax records and a field evaluation) using photographs and field notes. In addition, the architectural historian researched all potential historic architectural resources to identify pertinent historical information, such as date of construction, builder, and architect. The research was conducted at the Harford County and Cecil County Historical Societies as well as MHT's library, located in Crownsville, Maryland.
- Based on the fieldwork and research, FRA/MDOT submitted to MHT on February 12, 2015 a DOE Report, consisting of DOE forms for the Perryville Historic District, Perryville United Methodist Church, Perryville Presbyterian Church, a grouping of 8 houses at 400-413 Webb Lane, and the Susquehanna River Rail Bridge Overpasses, and 71 short forms. On April 22, 2015 (see Appendix E), the MHT responded that the following resources are eligible for listing in the NR: Susquehanna River Rail Bridge and 9 affiliated bridges (collectively known as the "Susquehanna River Rail Bridge Overpasses") the Perryville United Methodist Church, and the Perryville Presbyterian Church. In addition, the MHT indicated that the Perryville Historic District, 400-413 Webb Lane, and the 71 resources represented on the short forms are not eligible for listing in the NR.
- In August – October 2015, an architectural historian conducted subsequent fieldwork and assessed the Project's potential effects on the historic resources identified as either listed on or eligible for listing on the NR. In accordance with 36 CFR § 800.5, the architectural historian also evaluated whether any potential effect would constitute an adverse effect. Adverse effects may include direct effects, such as damage from construction related activities, or indirect effects, such as the introduction of visual, audible, or atmospheric elements that diminish the historic integrity of a property.
- As part of the Section 106 public outreach, FRA/MDOT solicited input from the consulting parties and the public on ideas to avoid, minimize, or mitigate adverse effects. Any written public comment (see Appendix F), including the bulletins from the City of Havre de Grace's Advisory Board ("Advisory Board"), has been incorporated, as appropriate, into the design process and this report's Effects Assessment (Chapter 5) and mitigation recommendations (Chapter 6).

FRA/MDOT prepared a separate but related analysis of the potential for archaeological resources to exist within the APE, entitled *Phase IA Archaeological Assessment for the Susquehanna River Rail Bridge Project, Harford and Cecil Counties, Maryland* ("Phase IA") (McCormick Taylor 2014). This Phase IA investigation involved extensive background research and historic context studies that were used not only to evaluate the archaeological potential of the APE, but also to provide a framework for analyzing the significance of potential historic architectural resources in the APE.

3. HISTORIC AND ARCHITECTURAL CONTEXT

The following historic context, which provides an overview of the history of the Project area from the beginning of the seventeenth century through the twentieth century, was abstracted from the Phase IA report that was prepared for this Project, unless otherwise noted.

3.1. INITIAL EUROPEAN CONTACT (1600-1650)

Based on ethno-linguistic and ethnographic accounts, throughout the Late Woodland period (1000 AD-1650 AD), two Native American cultural groups, the Nanticokes and the Piscataway were quite active in the region. However, by 1634, the stronghold of southern Pennsylvania Susquehannocks, an Iroquoian-speaking group, had extended throughout the Chesapeake Bay area and southward over Maryland's Western Shore. According to historical accounts, during his travels along the Potomac and Anacostia Rivers in 1609, John Smith visited several palisaded Piscataway villages. Several groups of indigenous people inhabited Maryland's Western and Eastern Shores at the time of arrival of the first Europeans. In addition to the Susquehannocks on the upper reaches of the shore, these groups included the Nanticoke, Choptank, Wicomiss (also referred to as the "Ozinies"), Matapeake, and Tockwogh, who lived in the central and southern portions of Maryland's eastern shore (Millis and Wall 2006; Kingsley 2006).

Although other attempts are reputed, the first documented exploration of present-day Maryland was conducted by Captain John Smith. In June 1608, Smith became the first Anglo-European to explore and map the Upper Chesapeake Bay, as well as to make contact with Native Americans. According to historical accounts, Smith managed to lead the expedition as far north as "Bolus flu" (present-day Patapsco River) before illness forced the party to return to Virginia. A month later, Smith led a second expedition of the Upper Chesapeake. During this journey, Smith explored various waterways of Kent, Harford, and Cecil Counties. Several weeks later, after passing what is now Spesutia Island, Smith reached the Susquehanna River. While exploring the Deer Creek area on foot, Smith and his crew first encountered Susquehannocks. Smith was obviously impressed and wrote detailed narratives about the Susquehannocks' physical appearance, attire, and lifeways (Weeks 1996). Though Smith provided the world with its first glimpse of the area, it would be some time before significant European settlement on the Eastern Shore occurred.

Around 1616, an Englishman named Edward Palmer established a trading post on Palmer's Island (currently Garrett Island) at the mouth of the Susquehanna River. While the post managed to operate for a few years, its success was short-lived. By the time of his death in 1624, Palmer had relocated back to London. Around 1629, after visiting his failing land interests in Newfoundland, George Calvert (named the first Lord of Baltimore by King James of England in 1625) traveled to the Chesapeake Bay area in search of lands in a more favorable climate. Shortly after his return to England, Calvert began petitioning for rights to lands north of the Potomac River. Despite Calvert's persistent campaigning, King Charles remained reluctant to approve the petition for several years. Finally, on June 20, 1632, two months after George Calvert's death, the charter was approved and Calvert's son, Cecil, became the first proprietor of Maryland.

The year 1631 marked the first colonial settlement on the Eastern Shore. Virginian William Claibourne established a fort and trading post on Kent Island to trade with the indigenous peoples for furs. By 1636, a gristmill was in operation on the island. Tax records indicate that 49 taxable residents resided on the island in 1638, and 98 in 1642 (Fiedel 1999). According to local historical accounts, the early settlement of St. Michaels, on the leeward side of Kent Island, also began around this time (<http://stmichaelsmd.org/pages/History>). The 1630s also mark the onset of colonization of Maryland's Western Shore and mainland. Similarly, efforts to colonize the Atlantic Ocean coastline (or the Delaware) side of the Eastern Shore were also occurring. In 1634, Maryland's first colonists from England arrived at the mouth of the Potomac River in two ships, the *Arc* and the *Dove*. After a brief stay on Saint Clement's Island, Leonard Calvert, Cecil's brother, led the *Dove* to Piscataway Creek via the Potomac River to initiate negotiations with members of the Piscataway tribe. In March 1634, the colonists

purchased a village on the mainland and renamed the settlement St. Mary's City (Virta 1998). Three years later, in 1637, Saint Mary's County, which included both shores of the Chesapeake Bay, was created. For the next several decades, St. Mary's County continued to lose and gain land as new counties were formed (e.g., Anne Arundel - 1650). In 1642, the lands on the east side of the Chesapeake Bay were removed from the county and established as Kent County. Shortly after his arrival, Calvert challenged Claibourne's rights to Kent Island and claimed ownership of the island through his land grant. Calvert succeeded in bringing Kent Island under Maryland control in 1657. By 1659, large land grants had been given along the Choptank River, and tobacco had become established as the major crop in the area (Preston 1983; Kingsley, Benedict, and Katz 2006).

As settlement of the Eastern Shore began to increase, so did tensions between the colonists and Native American tribes. The tribes' traditional seasonal hunting and farming practices continued to be disrupted by settlers and traders, and by the accompanying deforestation. Colonial authorities made some attempts to protect the tribes and facilitate coexistence; however, their suggestions were often ignored. In 1642 and 1647, Maryland Governor Thomas Greene ordered Capt. John Price "...to take thirty or forty able men, with sufficient arms, ammunition, and provisions, and embark for the Eastern Shore to attack the towns of Nanticokes and Wiccomiss" (Weslager 1983: 4). A treaty, the first of five, was signed in 1668 by Chief Unnacokasimmon to establish peace with Maryland colonists.

Around this time, the Dutch also became increasingly wary of English settlement around the Chesapeake Bay and Virginia. Dutch concern was justifiable since Lord Baltimore regarded the Chesapeake Bay's eastern shore (as well as much of western Delaware) to be under his proprietorship (all of which he called Somerset County). In 1659, the Dutch constructed a small fort named Whorekil (alternately Hoerenkil, Horekill, Hoorekill) at the mouth of the Delaware Bay near Lewes to maintain watch on English settlement in the area.

Domestic architecture during this period was characterized by one- or two-story, one-room plan dwellings made of wood; agricultural outbuildings included structures related directly to the tobacco and grain economy such as frame tobacco sheds, small barns, or structures to house hogs and cattle (Catts, Custer, and Hawley 1994).

Transportation was conducted primarily along navigable waterways; however, gradual increases in settlement slowly encouraged the expansion of ground transportation. In 1661, the General Assembly passed an act to improve the existing land transportation system through the construction of new public roads and bridges. Specifically, the act called for "marking and making highways and making the heads of Rivers, Creeks, Branches, and Swamps passable for horse and foot." To ensure that the mandates of road construction were met, the act allowed counties to appoint commissioners to oversee roadwork. The act also included provisions to preserve rights for creating private access roads. Penalties were payable in tobacco (www.roads.maryland.gov/OPPEN/II-E_RDS.pdf).

3.2. SETTLEMENT PERIOD (1600-1750)

Prior to European arrival in Maryland, the area was already home to a complex network of Indian settlements and chiefdoms. Early exploration of the modern-day Harford and Cecil county area essentially began with Captain John Smith's treks up the Susquehanna River in 1608. During these expeditions Smith and his crew first encountered the Susquehannocks. Smith wrote detailed narratives about the Susquehannocks' physical appearance, attire, and lifeways (Weeks 1996).

As European colonization gained a foothold in the New World, there was an emerging need for a consistent system to traverse the Susquehanna River. In 1695, the Lower Susquehanna Ferry was first licensed at the mouth of the river on land that had been granted in 1658 to Godfrey Harmer by the Lord Proprietor of

Maryland. In 1659, the area known as “Harmer’s Town” passed to Thomas Stockett. In 1666, a road called “Post Road” ran from Philadelphia to New York in the north to Baltimore and other towns to the south (Bilicki 2003). This road encouraged several ferry systems to begin operation at the Susquehanna River between Post Road on the Havre de Grace side and Post Road on the Perryville side.

John Rodgers, the ferry’s first operator, owned a tavern located at the western terminus of the ferry. He later bought an existing tavern on the other side of the river and he operated the ferry between both establishments (Gerstell 1998). Prior to this time there was a small fishing village in the vicinity of Havre de Grace and the ferry, but there were very few people in the area before the ferry was established.

In 1630, King Charles I of England granted a charter for the exclusive right of the colony of Maryland to George Calvert. By 1634, St. Mary’s City, Maryland was established as the first settlement with 150 colonists living on the new land. The second Proprietary Governor of the Province of Maryland, Cecil Calvert, formed Cecil County, Maryland in 1674, a year before his death. In 1751, Frederick Calvert (the great-great-great-grandson of George Calvert) inherited the Proprietary Governorship of the Province of Maryland. In 1773, Frederick Calvert formed Harford County from Baltimore County. He named the county Harford after his illegitimate son, Henry Harford.

Both Havre de Grace in Harford County and Perryville in Cecil County were important to early settlement because of their location at the mouth of the Susquehanna River and the trading post established by William Claibourne in 1637, located on Garrett Island between the two towns. At his Trading Post, Claibourne traded items with indigenous peoples for furs. Because of the proximity of Havre de Grace to the Susquehanna River and Chesapeake Bay, the city of Havre de Grace adopted oyster and crab harvesting as their main export.

3.3. RURAL AGRARIAN INTENSIFICATION (1750-1815)

The American Revolution had little effect on Havre de Grace and Perryville from a military standpoint, since no significant battles were fought in the area. However, many people ended up assisting in the war effort, and many continental troops traveled across the Susquehanna River by the Havre de Grace Ferry. Jean Baptiste and Count de Rochambeau led 6,000 French soldiers across the river and camped along Old Post Road in Perryville (Bates 2006: 44).

The most notable American soldier from the area was Colonel John Rodgers, Sr., who served in the militia during the Revolutionary War and served as host, on several occasions, to George Washington and Marquis de Lafayette when they stayed at Rodgers’ home and tavern in Perryville. The name of the city of Havre de Grace is credited to Marquis de Lafayette during the Revolutionary War. It was stated that it reminded him of Le Havre, France, and Colonel John Rodgers, Sr. thought the name would add distinction to the town. After the Revolutionary War, Havre de Grace was considered for the capital of the United States, but it lost by one vote.

Havre de Grace, however, was not spared from the ravages of the War of 1812. The Perryville iron ore site, Principio’s Furnace, would attract the British and bring them into the Susquehanna River in 1813. The British sailed up the Chesapeake Bay blockading ports and destroying towns along the way. The British arrived at the mouth of the Susquehanna River on May 3, 1813 with 400 troops and attacked, burned, and pillaged the town of Havre de Grace and Principio’s Furnace. Within a few hours, two-thirds of Havre de Grace was destroyed, in addition to a boat yard, vessels, and Principio’s Furnace. Only a few structures survived the attack of Havre de Grace, including the Aveihle-Goldsborough House, the exterior walls of St. John’s Episcopal Church, and the Elizabeth Rodgers House. One Havre de Grace resident, John O’Neill, the lighthouse keeper, attempted to defend Havre de Grace by firing cannons at the British, but he was captured and was only spared his life because his daughter pleaded with the admiral of the British

troops (Noll 2011). In 1814, a survey and a tax assessment were conducted to begin the two-decade process of rebuilding Havre de Grace after the War of 1812.

3.4. AGRICULTURAL-INDUSTRIAL TRANSITION PERIOD (1815-1870)

As a result of the Susquehanna River's position between Maryland and Pennsylvania, the towns of Havre de Grace and Perryville developed as an important transportation crossroads for the transport of tobacco and wheat. The area soon provided many accommodations for travelers of this north-south route. These towns also relied on fishing, most specifically the harvesting of oysters and crabs, and ice harvesting. These industries were not especially reliant on slave labor, and Havre de Grace was a primary town on the Eastern Route of the Underground Railroad. Slaves crossed the Susquehanna River in an attempt to reach Pennsylvania. The customary method for the transporting of slaves via ferry was for the agent of the Underground Railroad to light a fire on the Havre de Grace side of the river, which provided notice to an agent on the other side of the river in Perryville. This person would understand the signal and would cross in the boat to receive the escaped slave (Still 1872). To prevent Maryland's secession, Federal troops occupied the state starting in May 1861. By the Civil War there was a large free African-American population located within Havre de Grace. It was one of seven sites designated for the recruiting of "U.S. Colored Troops."

In 1866, after the Civil War, the Philadelphia Wilmington & Baltimore Railroad (PW&B) completed a wooden single-track bridge, which allowed passengers and goods to cross the river without the aid of a ferry boat. Prior to this time, the Susquehanna Ferry had a 238-foot-long ferry to transport entire trains from one side of the river to the other. The ability of trains to cross the Susquehanna River by bridge at this location caused a decline in the use of the ferry.

3.5. INDUSTRIALIZATION AND MODERN PERIOD (1870-PRESENT)

After the Civil War, the city's river tied it to northern industry and provided urban jobs for free African-Americans. In 1906, the Pennsylvania Railroad replaced the PW&B crossing with a new metal bridge that featured a center swing-span, which could be rotated to allow taller ships and other river traffic to pass safely. The alignment of this new bridge is located several feet to the north of the alignment for the previous 1866 wooden bridge. While the deck for the 1866 bridge is no longer extant, the stone piers for this structure may still be seen within the Susquehanna River channel. In addition, one of the 1866 bridge stone abutments may be observed along Avenue A near the waterfront, just south of Perryville.

A racetrack was opened in Havre de Grace and attracted a new group of travelers and tourists, making it a popular location for gamblers and gangsters to visit. It was one of four racetracks in the state and many famous Triple Crown winners and other famous racehorses raced there. In 1951, the racetrack was sold to the Maryland National Guard. The industrial facilities in Perryville helped during the war effort for both World Wars. The federal government purchased facilities at Perry Point in Perryville for the training of recruits. In Port Deposit, the Wiley Company was a builder of steel assemblies and they provided materials for the Lend-Lease Act during World War II (Bilicki 2003). Duck hunting was also beginning to attract seasonal tourists to the area. As farming steadily declined in the area after World War II, transportation and tourism became the main occupations for the residents of the Havre de Grace and Perryville area.

4. RESULTS OF FIELD INVESTIGATIONS

4.1. APE DELINEATION

To assess the potential effects of the Susquehanna River Rail Bridge Project on historic architectural resources, FRA/MDOT established the Project's APE in consultation with the MHT. FRA/MDOT ensured that the APE boundaries include all possible Project alternatives within the entire Project Site as defined by the FRA grant (see **Figure 2**). Potential effects to architectural resources can include both direct physical effects (e.g., demolition, alteration, or damage from construction) within the Project Site and indirect effects in surrounding areas. These indirect effects can include isolation of a property from its surrounding environment, or the introduction of visual, audible, or atmospheric elements that may alter the characteristics of the historic property that qualify it for inclusion on the NR in a manner that would diminish the property's historic integrity.

Development of the proposed APE for architectural resources included field visits to determine locations where prominent views of the existing Susquehanna River Rail Bridge and the NEC exist and where the Project could have the potential to affect architectural resources.

To incorporate areas with the potential for indirect effects, the APE for historic architectural resources extends beyond the Project Site in the following ways. First, for the majority of the length of the Project along the rail line, the APE boundary runs parallel to the tracks approximately 600 feet to the north and south. In close proximity to the river, the APE boundary proceeds on a diagonal line to intersect with the river approximately one-quarter of a mile north and south of the Project limits. This widening is to account for more distant views of the Project along the Harford and Cecil County waterfronts. The APE, as approved by the MHT on June 16, 2014, is illustrated in **Figure 4**.

4.2. IDENTIFICATION OF CULTURAL RESOURCES IN THE APE

As explained above, studies to identify the potential for historic resources within the Project area included a Phase IA archaeological investigation and reconnaissance and intensive level historic architectural sites surveys.

The Phase IA study involved documentary sources to identify areas with potential to contain archaeological deposits relating to prehistoric or historic-period activities. For each area where prehistoric or historic-period activities may have yielded archaeological deposits, the FRA/MDOT evaluated construction activities and other recent ground disturbances to identify locations where any archaeological resources, if originally present, may have survived. The Phase IA report assessed the Project's potential to affect archaeologically sensitive areas and provided recommendations for further archaeological testing to determine the presence or absence of significant archaeological resources that could be affected by the Project. The Phase IA report is summarized in greater detail in the EA.

The historic architectural sites surveys resulted in the identification within the APE of 73 architectural resources that were evaluated as not eligible for listing on the NR and 13 historic architectural resources either listed on or eligible for listing on the NR (see further discussion below).



Area of Potential Effects Map

Susquehanna River Rail Bridge Project
 Perryville / Havre de Grace, Maryland

Figure 4

4.2.A. PROPERTIES CONSIDERED NOT ELIGIBLE FOR NR LISTING

As described above, on April 22, 2015, the MHT concurred with the FRA/MDOT that the following 73 resources listed in **Table 1** are not eligible for listing on the NR even though they are 50 years or older:

Table 1
Properties Determined Not Eligible for NR Listing

No.	Name of DOE/Address	City	County	DOE Form
1	Perryville Town Hall/515 Broad Street	Perryville	Cecil	Short
2	521 Broad Street	Perryville	Cecil	Short
3	525 Broad Street	Perryville	Cecil	Short
4	531 Broad Street	Perryville	Cecil	Short
5	603 Broad Street	Perryville	Cecil	Short
6	619 Broad Street	Perryville	Cecil	Short
7	625 Broad Street	Perryville	Cecil	Short
8	317 Aiken Avenue	Perryville	Cecil	Short
9	304 Aiken Avenue	Perryville	Cecil	Short
10	Aiken Avenue	Perryville	Cecil	Short
11	636 Broad Street	Perryville	Cecil	Short
12	223 McLhinney Street	Perryville	Cecil	Short
13	215 McLhinney Street	Perryville	Cecil	Short
14	213 McLhinney Street	Perryville	Cecil	Short
15	211 McLhinney Street	Perryville	Cecil	Short
16	700 Broad Street	Perryville	Cecil	Short
17	222 McLhinney Street	Perryville	Cecil	Short
18	214 McLhinney Street	Perryville	Cecil	Short
19	724 Broad Street	Perryville	Cecil	Short
20	814 Broad Street	Perryville	Cecil	Short
21	717 Broad Street	Perryville	Cecil	Short
22	709 Broad Street	Perryville	Cecil	Short
23	701 Broad Street	Perryville	Cecil	Short
24	904 Broad Street	Perryville	Cecil	Short
25	914 Broad Street	Perryville	Cecil	Short
26	860 Erie Street	Havre de Grace	Harford	Short
27	704 Pulaski Highway	Havre de Grace	Harford	Short
28	706 Pulaski Highway	Havre de Grace	Harford	Short
29	875 Ontario Street	Havre de Grace	Harford	Short
30	870 Ontario Street	Havre de Grace	Harford	Short
31	605 Legion Drive	Havre de Grace	Harford	Short
32	888 Linden Lane	Havre de Grace	Harford	Short
33	875R Otsego Street	Havre de Grace	Harford	Short
34	875 Otsego Street	Havre de Grace	Harford	Short
35	877 Otsego Street	Havre de Grace	Harford	Short
36	880 Otsego Street	Havre de Grace	Harford	Short
37	850 Otsego Street	Havre de Grace	Harford	Short
38	908 Pulaski Highway	Havre de Grace	Harford	Short

Table 1 (cont'd)
Properties Determined Not Eligible for NR Listing

No.	Name of DOE/Address	City	County	DOE Form
39	913 Warren Street	Havre de Grace	Harford	Short
40	907 Warren Street	Havre de Grace	Harford	Short
41	910 Pulaski Highway	Havre de Grace	Harford	Short
42	912 Pulaski Highway	Havre de Grace	Harford	Short
43	930 Warren Street	Havre de Grace	Harford	Short
44	926 Warren Street	Havre de Grace	Harford	Short
45	920 Warren Street	Havre de Grace	Harford	Short
46	918 Warren Street	Havre de Grace	Harford	Short
47	916 Warren Street	Havre de Grace	Harford	Short
48	912 Warren Street	Havre de Grace	Harford	Short
49	700 Congress Avenue	Havre de Grace	Harford	Short
50	Elk's Lodge /940 Pulaski Highway	Havre de Grace	Harford	Short
51	942-944 Pulaski Highway	Havre de Grace	Harford	Short
52	944 Pulaski Highway	Havre de Grace	Harford	Short
53	1201 Pulaski Highway	Havre de Grace	Harford	Short
54	1200 Pulaski Highway	Havre de Grace	Harford	Short
55	1301 Pulaski Highway	Havre de Grace	Harford	Short
56	1307 Pulaski Highway	Havre de Grace	Harford	Short
57	1625 Pulaski Highway	Havre de Grace	Harford	Short
58	1633 Pulaski Highway	Havre de Grace	Harford	Short
59	1751 Pulaski Highway	Havre de Grace	Harford	Short
60	1354 Old Post Road	Havre de Grace	Harford	Short
61	1331 Old Post Road	Havre de Grace	Harford	Short
62	1329 Old Post Road	Havre de Grace	Harford	Short
63	1325 Old Post Road	Havre de Grace	Harford	Short
64	1315 Old Post Road	Havre de Grace	Harford	Short
65	807 Broad Street	Perryville	Cecil	Short
66	609 Legion Drive	Havre de Grace	Harford	Short
67	2006 Pulaski Highway	Havre de Grace	Harford	Short
68	1844 Pulaski Highway	Havre de Grace	Harford	Short
69	Mitchell Farm/1919, 1921 Pulaski Highway	Havre de Grace	Harford	Short
70	Havre de Grace Train Station Ruins/Warren Street between North Adams Street and Juniata Street	Havre de Grace	Harford	Short
71	Broad Street Wye Bridge	Perryville	Cecil	Short
72	Perryville Historic District	Perryville	Cecil	Long
73	400-413 Webb Lane	Havre de Grace	Harford	Long

4.2.B. PROPERTIES LISTED ON OR DETERMINED ELIGIBLE FOR THE NR

The reconnaissance and intensive level historic architectural sites survey, which FRA/MDOT developed in consultation with the MHT, resulted in the identification within the Project’s APE of 13 historic architectural resources that are either listed on or eligible for inclusion on the NR.

None of these 13 significant resources is a National Historic Landmark (NHL). Eleven of them were either listed on the NR or prior to the Susquehanna River Rail Bridge Project had been evaluated by the MHT as being eligible for inclusion on the NR. As part of the current Project, FRA/MDOT evaluated two additional resources, the Perryville Methodist Church and the Perryville Presbyterian Church, as eligible for inclusion on the NR. In addition, FRA/MDOT evaluated that the nine undergrade bridges (collectively known as the “Susquehanna River Rail Bridge Overpasses,”) are eligible for inclusion on the NR as part of the NR-eligible Susquehanna River Rail Bridge historic resource; that the four undergrade bridges at MP 60.51, 60.56, 60.61, and 60.69 contribute to the NR-listed Havre de Grace Historic District; and that the undergrade bridge at MP 59.39 contributes to the NR-eligible Perryville Railroad Station complex. The historic architectural resources in the APE that are listed or eligible for listing on the NR are presented in **Table 2**, mapped on **Figure 5** and **Figure 6**, and described below.

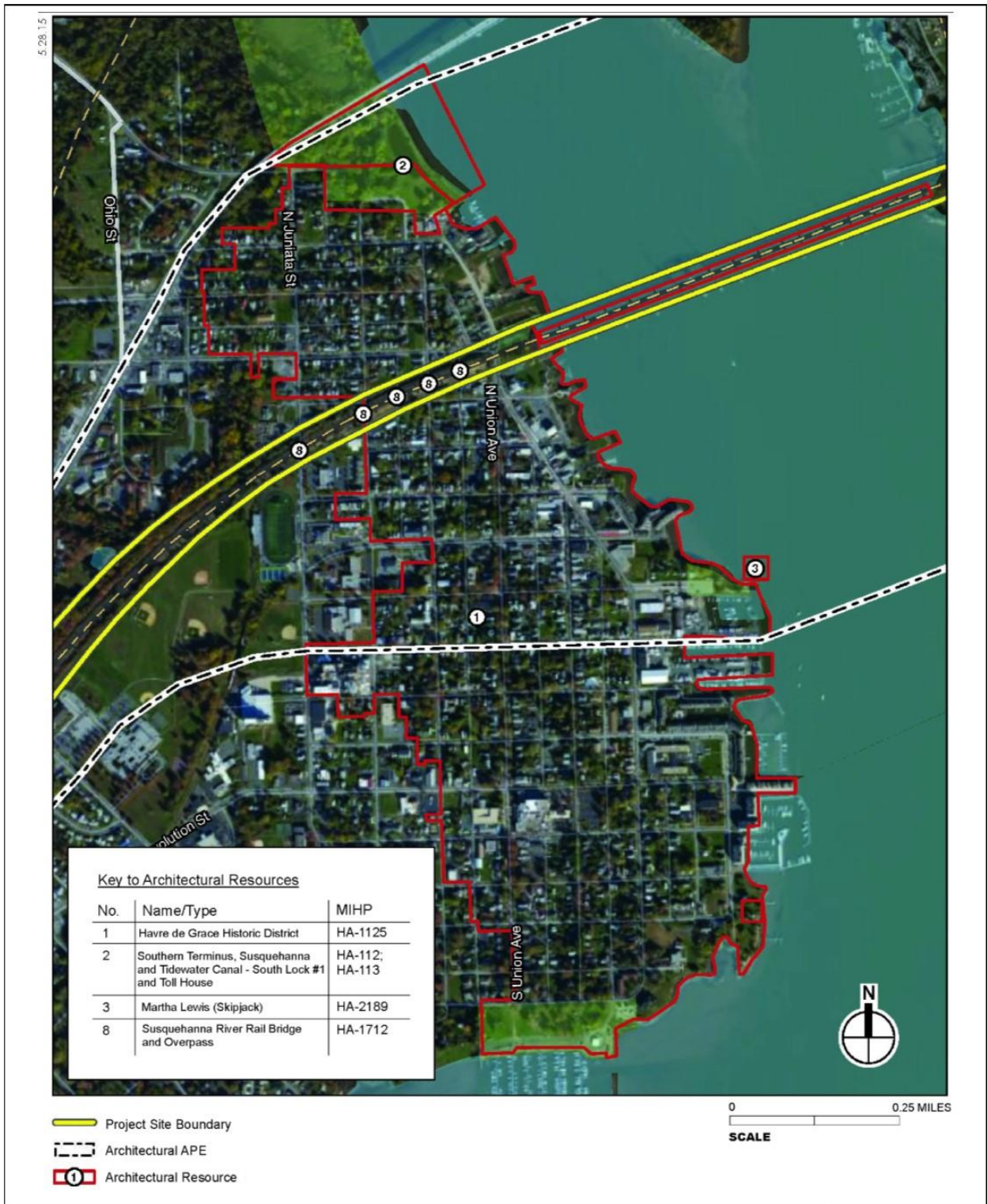
**Table 2
Historic Architectural Resources Within the APE**

No.	Name/Type	Location	Eligibility Criteria	NR-Listed	NR-Eligible	MIHP
1	Havre de Grace Historic District	Havre de Grace	A & C	X		HA-1125
2	Southern Terminus, Susquehanna and Tidewater Canal – South lock #1 and Toll House ¹	Havre de Grace	A & C	X		HA-112; HA-113
3	Martha Lewis (skipjack)	Havre de Grace	A & C	X		HA-2189
4	Rodgers Tavern ¹	Perryville	A & C	X		CE-129
5	Principio Furnace (Principio Iron Works) ²	Cecil County	A & D	X		CE-112
6	Perry Point Mansion House and Mill	Perryville	A & C	X		CE-146; CE-244
7	Perryville Railroad Station	Perryville	A & C		X	CE-1442
8	Susquehanna River Rail Bridge and Overpasses ³	Harford County	A & C		X	HA-1712
9	Perry Point Veterans Administration (VA) Medical Center Historic District	Cecil County	A & C		X	CE-1544
10	Crothers House (Furnace Bay Golf Course Clubhouse)	Cecil County	C		X	CE-1566

Table 2 (cont'd)
Historic Architectural Resources Within the APE

11	Woodlands Farm Historic District ⁴	Cecil County	A & C	X	CE-145
12	Perryville United Methodist Church	Perryville	A & C	X	CE-1573
13	Perryville Presbyterian Church	Perryville	A & C	X	CE-1574

Notes:
¹ Notes resource is also a MHT easement property.
² Although portions of this property are located in the APE, there are no structures associated with this resource located within the APE.
³ The undergrade bridges at MP 60.51, 60.56, 60.61, and 60.69 contribute to the Havre de Grace Historic District; the undergrade bridge at MP 59.39 contributes to the Perryville Railroad Station complex.
⁴ This is an expansion of a boundary for the NR-listed Woodlands Farm.
 MIHP: Maryland Inventory of Historic Properties
Sources: MHT Online Resources



Havre de Grace
Architectural Resources Map

Susquehanna River Rail Bridge Project
Perryville / Havre de Grace, Maryland

Figure 5

5.28.15



- Project Site Boundary
- Architectural APE
- Architectural Resource

0 0.5 MILES
SCALE

Perryville and Cecil County Architectural Resources Map

Susquehanna River Rail Bridge Project
Perryville / Havre de Grace, Maryland

Figure 6

Havre de Grace Historic District (HA-1125)

The Project passes through the Havre de Grace Historic District, which consists of a large part of the City of Havre de Grace. According to the NR nomination, the historic district is important under NR Criteria A and C for its architecture, transportation/commerce, and community planning. Each of these themes is examined below, with special focus on how the area of the historic district in close proximity to the Project contributes to these themes.

Architecturally, the district contains a mix of nineteenth and early twentieth century residential, commercial, religious, and industrial buildings. In general, older structures dating to the first half of the nineteenth century are located in the northern and eastern portions of the district, where settlement arose around the town's ferry industry, established in 1695. A fire in 1775 and another in 1813 destroyed much of the town's eighteenth century buildings. However, a building boom in the late nineteenth century led to the construction of a variety of residential and commercial structures, as well as several Victorian homes. Hence, what survives today is a collection of nineteenth and early twentieth century styles ranging from Federal, Greek Revival, Gothic Revival, Italianate, Queen Anne, and Classical Revival, to variations of the Arts and Crafts movement, such as the Shingle and Bungalow styles. The residential buildings are primarily wood-frame construction, while the commercial buildings and church and government buildings are mostly constructed of brick and stone (see **Figure 7**, Photos 3-6).

The close proximity to the Port Deposit Quarry played an important role in the area's architectural development, with many houses throughout Harford County using North Harford and Delta slate roofs, and many buildings constructed with Port Deposit granite. In 1906 this granite was also incorporated into the Susquehanna River Rail Bridge and undergrade bridges.

A survey of the Havre de Grace Historic District in close proximity to the Project (see photo key in **Figure 8** and photos 7-31 in **Figure 9** through **Figure 21**) revealed that there is a mix of mid to late nineteenth and early twentieth century vernacular structures, many of which have suffered from a loss of architectural integrity, along with some modern intrusions. Although the NR Nomination Form for the Historic District does not include a comprehensive list of contributing and non-contributing resources, the form does estimate that approximately 800 of the 1,100 buildings within the Historic District contribute to its historic character. As part of the current study, the structures adjacent to the Project Site, which have the greatest potential to be affected, were evaluated to assess whether or not they contribute to the significance of the historic district, using an approximate 1930 end date for the district's period of significance.



Photo 3: Representative mid-nineteenth century residential structure within the Havre de Grace Historic District.



Photo 4: Representative masonry ecclesiastical structure within the Havre de Grace Historic District.

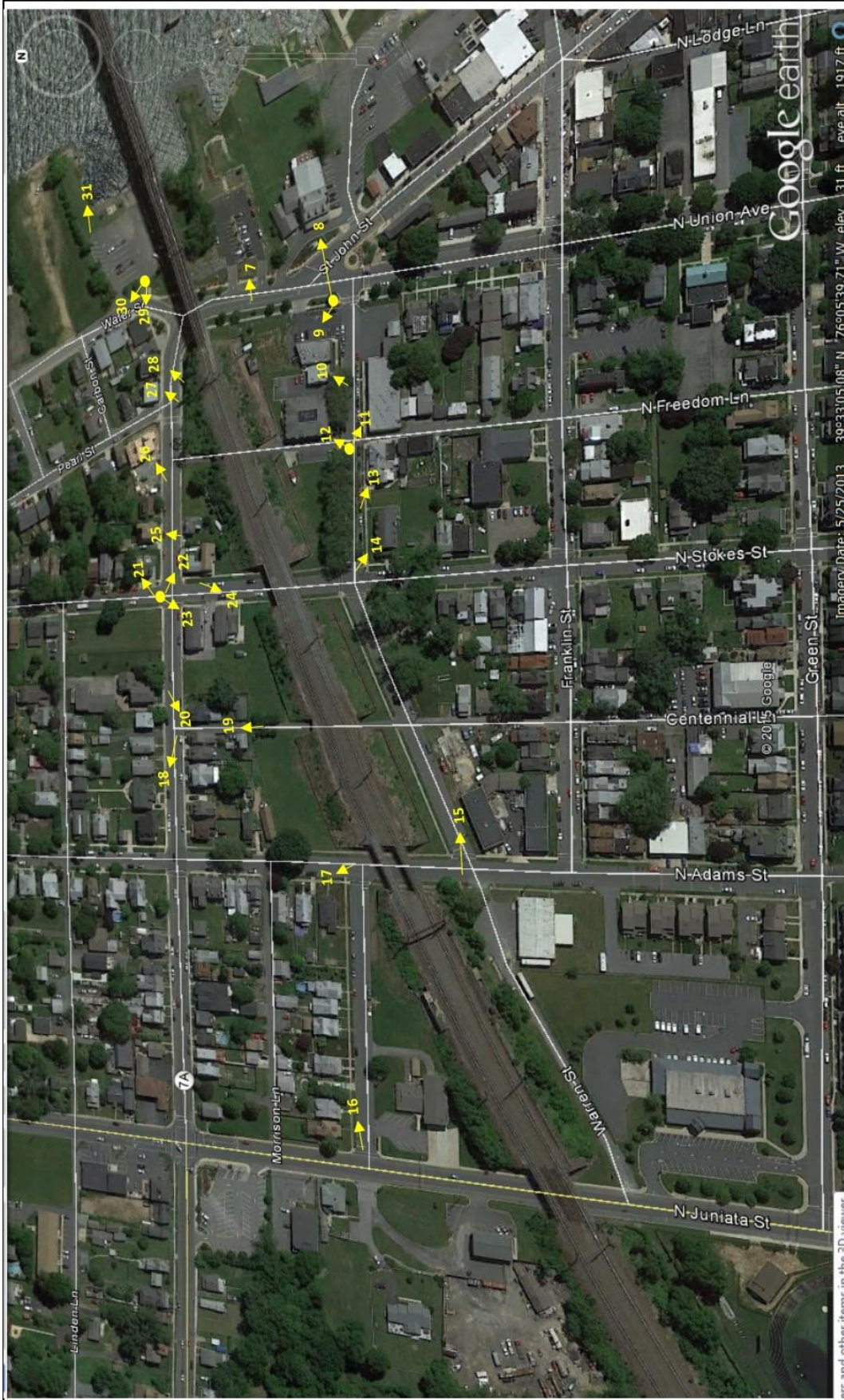


Photo 5: Representative late nineteenth century residential structure within the Havre de Grace Historic District.



Photo 6: Representative masonry governmental structure within the Havre de Grace Historic District.

Havre de Grace Historic District	Susquehanna River Bridge Project Havre de Grace and Perryville, MD	Figure 7
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Havre de Grace Historic District
Photo Key

Susquehanna River Rail Bridge Project
Perryville / Havre de Grace, Maryland

Figure 8

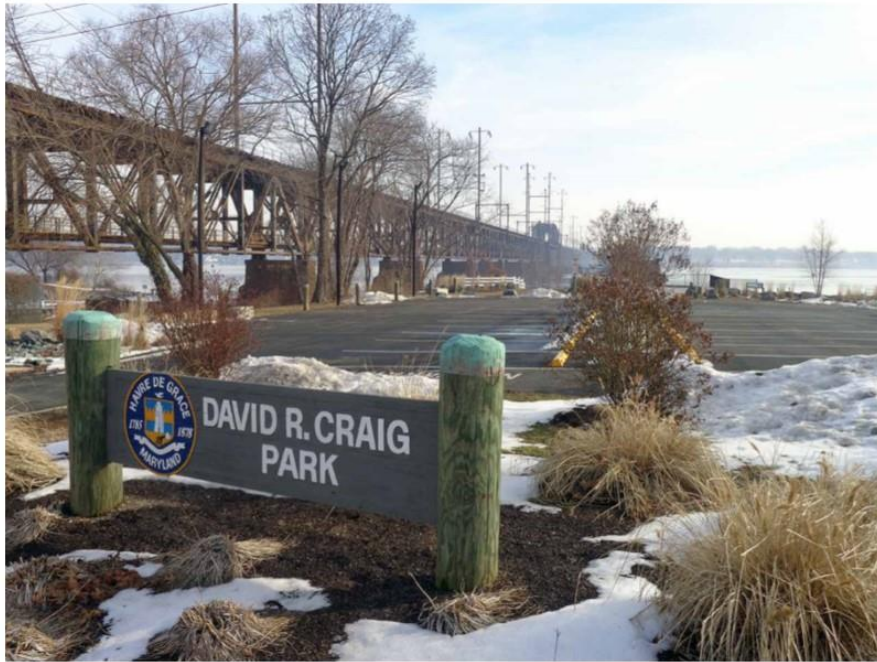


Photo 7: View looking northeast at the David R. Craig Park located along the waterfront immediately south of the Susquehanna River Rail Bridge.



Photo 8: View looking east at the American Legion Building, the former Lafayette Hotel, 501 St. John Street, Havre de Grace.

Properties Adjacent to the Project Site	Susquehanna River Bridge Project Havre de Grace and Perryville, MD	Figure 9
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Photo 9: View looking northwest at a modern 7-11 building.



Photo 10: View looking northeast at 511 Warren Street, an early nineteenth century house that is reported to have been moved.

Properties Adjacent
to the Project Site

Susquehanna River Bridge Project
Havre de Grace and Perryville, MD

Figure 10



Photo 11: View looking east along Warren Street at a nineteenth century commercial structure that have suffered from a loss of architectural integrity.



Photo 12: View looking northeast at a large modern one-story residential structure at 515 Warren Street.

<p>Properties Adjacent to the Project Site</p>	<p>Susquehanna River Bridge Project Havre de Grace and Perryville, MD</p>	<p>Figure 11</p>
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Photo 13: View looking southeast at a multi-family residential structure at 552 Warren Street.



Photo 14: View looking southeast at the Room at the Cross Mission Church, the former St. Patrick's Catholic Church, 429 N. Stokes Street.

<p>Properties Adjacent to the Project Site</p>	<p>Susquehanna River Bridge Project Havre de Grace and Perryville, MD</p>	<p>Figure 12</p>
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Photo 15: View looking southeast from the corner of N. Adams Street and Warren Street towards modern commercial structures along Warren Street.



Photo 16: View looking northeast towards a cluster of early twentieth century bungalow houses along Warren Street.

Properties Adjacent to the Project Site	Susquehanna River Bridge Project Havre de Grace and Perryville, MD	Figure 13
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Photo 17: View looking northwest at early twentieth century bungalow houses along N. Adams Street.



Photo 18: View looking northwest along Otsego Street.

Properties Adjacent to the Project Site	Susquehanna River Bridge Project Havre de Grace and Perryville, MD	Figure 14
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Photo 19: View looking north along Centennial Lane towards Otsego Street, showing that the structures closest to the tracks are garages associated with houses that front onto Otsego Street.



Photo 20: View looking southwest at houses on Otsego Street near Centennial Lane.

Properties Adjacent to the Project Site	Susquehanna River Bridge Project Havre de Grace and Perryville, MD	Figure 15
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Photo 21: View looking northeast at the modern residential structure at the northeast corner of Otsego Street and N. Stokes Street.



Photo 22: View looking southeast at two vernacular mid-nineteenth century houses at the southeast corner of Otsego Street and N. Stokes Street.

Properties Adjacent to the Project Site	Susquehanna River Bridge Project Havre de Grace and Perryville, MD	Figure 16
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Photo 23: View looking southwest towards a modern residential structure at the southwest corner of Otsego Street and N. Stokes Street.



Photo 24: View looking southwest at a mid-nineteenth century Gothic Revival style house at 518 N. Stokes Street.

Properties Adjacent to the Project Site	Susquehanna River Bridge Project Havre de Grace and Perryville, MD	Figure 17
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Photo 25: View looking north at an altered mid-nineteenth century French Second Empire house at 571 Otsego Street.



Photo 26: View looking northeast at a modern residential structure on Otsego Street.

Properties Adjacent to the Project Site	Susquehanna River Bridge Project Havre de Grace and Perryville, MD	Figure 18
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Photo 27: View looking north at an altered nineteenth century structure on Otsego Street.



Photo 28: View looking northeast at a mid-nineteenth century house at 509 Otsego Street.

Properties Adjacent to the Project Site	Susquehanna River Bridge Project Havre de Grace and Perryville, MD	Figure 19
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Photo 29: View looking northwest at an altered structure at the corner of Otsego Street and Water Street.



Photo 30: View looking northwest at nineteenth century structures along Water Street.

Properties Adjacent to the Project Site	Susquehanna River Bridge Project Havre de Grace and Perryville, MD	Figure 20
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Photo 31: View looking east at the Jean S. Roberts Memorial Park along the waterfront immediately north of the Susquehanna River Rail Bridge.

Property Adjacent to
the Project Site

Susquehanna River Bridge Project
Havre de Grace and Perryville, MD

Figure 21



- A. 501 St. John Street
- B. 511 Warren Street
- C. 552 Warren Street
- D. 429 N. Stokes Street

- E. Bungalows on Warren Street and N. Adams Street
- F. Houses on Otsego Street
- G. 518 N. Stokes Street
- H. Two houses at Otsego Street and N. Stokes Street

- I. 571 Otsego Street
- J. Houses at Otsego Street and Water Street

Resources Contributing to the Havre de
Grace Historic District

Susquehanna River Rail Bridge Project
Perryville / Havre de Grace, Maryland

Figure 22

Susquehanna River Rail Bridge Project

As shown in **Figure 22**, there are only a few contributing historic resources south of the tracks, including:

- American Legion Building, 501 St. John Street (see **Figure 9**, Photo 8)
- 2-story frame residential structure, 511 Warren Street (see **Figure 10**, Photo 10)
- 2½-story frame multi-family structure, 552 Warren Street (see **Figure 12**, Photo 13)
- Room at the Cross Mission Church, 429 N. Stokes Street (see **Figure 12**, Photo 14)

North of the tracks, however, the majority of the houses are considered contributing, including:

- Cluster of early twentieth century bungalow style houses located on Warren Street between N. Adams Street and N. Juniata Street and on N. Adams Street between the NEC and Morrison Lane (see **Figure 13** and **Figure 14**, Photos 16-17)
- Cluster of late nineteenth century / early twentieth houses located on Otsego Street between N. Adams Street and N. Stokes Street (see **Figure 15**, Photo 20).
- Two mid-nineteenth century houses at the southeast corner of Otsego Street and N. Stokes Street (see **Figure 16**, Photo 22)
- 2½-story 3-bay vernacular Gothic Revival style house, 518 N. Stokes Street (see **Figure 17**, Photo 24)
- Mid-nineteenth century vernacular French Second Empire style house, 571 Otsego Street (see **Figure 18**, Photo 25)
- Cluster of late nineteenth / early twentieth century structures at the intersection of Otsego Street and Water Street (see **Figure 19** and **Figure 20**, Photos 27-30)

Despite the number of contributing historic resources within close proximity to the Project Site, a windshield survey of the entire historic district revealed that the more high style buildings in the district are located south of the Project Site, with many examples along Union Street. Therefore, even though there are some individual structures or clusters of houses that contribute to the significance of the historic district, the immediate vicinity of the Project Site is not one of the strongest areas within the historic district in terms of architectural integrity.

The district is historically significant for two themes related to its physical location along the Susquehanna River: as a major commercial and transportation center in northern Maryland, and for its community planning.

Transportation was important throughout Havre de Grace's history, starting as early as William Claibourne's trading post established on Garrett Island in 1637, continuing with John Rodgers' eighteenth century ferry with a tavern on each side of the river, and continuing throughout the nineteenth century with the establishment of the rail line crossing through Havre de Grace. As summed up by the NR nomination: "Historically, this town, which was founded in the 18th century, has been a major commercial and transportation service center in this section of the state," and "More than one era of commercial transportation is indicated by the alignment of the Old Post Road, the canal and lockhouse and the trestles and bridges of the Pennsylvania railroad."

The Project's APE is integral to the historic theme of transportation because it contains the existing 1906 Pennsylvania Railroad bridge and the raised bridge approach as well as four of the undergrade bridges constructed at the same time as the bridge across the river (the North Freedom Lane Undergrade Bridge at Mile Post (MP) 60.51; the North Stokes Street Undergrade Bridge at MP 60.56; the Centennial Lane Undergrade Bridge at MP 60.61; and the North Adams Street Undergrade Bridge at MP 60.69). These rail structures relate to Havre de Grace's history as a major commercial and transportation center and are therefore considered contributing features of the historic district. In addition, the Project's APE includes

the extant piers of the 1866 railroad bridge, the canal and locktender's house, and the site of the eighteenth century ferry crossing.

In terms of community planning, the NR nomination states that "The streetscapes of Havre de Grace are defined by a grid pattern that is sensitive to the fact that the town is situated in the unique setting where a major river meets the Chesapeake Bay. With at least two wide boulevards that end with waterfront vistas and a system of alternating streets and alleys, most of which do the same, there is little doubt that Havre de Grace is a 'planned' waterfront community." "Another aspect of Havre de Grace's vistas that should not be forgotten relates not only to how the water is seen from in town but to the image which the town projects to the river and Bay."

Within the APE, the properties in close proximity to the river have a direct view of the water, although there are some large facilities, including marinas and large housing complexes, that block some of the views from structures further removed from the waterfront. Immediately adjacent to the rail line, the main view towards the river is dominated by the bridge and its approaches. The city's traditional layout that includes streets and alleys is represented in close proximity to the tracks, with both Freedom Lane and Centennial Lane crossing under the rail line via small stone arch bridges.

Southern Terminus, Susquehanna and Tidewater Canal - South Lock #1 and Toll House (HA-112; HA-113)

The Southern Terminus, Susquehanna and Tidewater Canal - South Lock #1 and Toll House (see Figure 23, Photo 32) (NR-listed) is located north of Erie Street and east of Park Drive at the north end of Havre de Grace on the western bank of the Susquehanna River (approximately one quarter-mile north of the Project Site). The canal was chartered by Maryland and Pennsylvania and opened in 1839. The canal was part of a waterway system for shipping goods up the Chesapeake Bay to New York, Pennsylvania, New Jersey, Delaware, and Maryland. Thus, Havre de Grace, at the southernmost terminus of the canal, became an important shipping point by the early 19th century for goods traveling north. However, by 1900, the canal, unable to compete with the dominance of the railroad, fell into disuse. Although most of the canal is no longer extant, the portion in Havre de Grace is well preserved. Also still standing on the site is the Lock Master's house (or Lock House/Toll House), the foundation of a bulkhead wharf along the river, and the outlet lock of the canal. The two-story, five-bay Lock House is constructed of brick laid in an American-bond pattern and has a hipped roof. The northeast elevation once had a one-story porch along the entire front façade. The porch on the southwest façade was a later addition. The house has two entrances at either end of both the northeast and southeast facades, a sawtooth cornice, and two four-over-four windows with sidelights on the first floor of the northeast elevation. Most of the original six-over-six windows have been replaced with one-over-one windows. The Southern Terminus, Susquehanna and Tidewater Canal - South Lock #1 and Toll House are listed on the NR under Criterion A based on their association with a larger canal system that served five states and facilitated the development of Havre de Grace as a major transportation and economic center in the nineteenth century, and Criterion C for its engineering significance. The MHT holds a preservation easement on this property, which requires that the MHT be provided an opportunity to review any proposed alterations.



Photo 32: View looking north at the Southern Terminus, Susquehanna and Tidewater Canal- South Lock #1 and Toll House.

Southern Terminus, Susquehanna and Tidewater Canal - South Lock #1 and Toll House

Susquehanna River Bridge Project
Havre de Grace and Perryville, MD

Figure 23

Martha Lewis (Skipjack [HA-2189])

The Skipjack *Martha Lewis* (NR-listed) was built by the noted boat builder, Bronza Park, in 1955 and is one of the 35 surviving traditional Chesapeake Bay skipjacks built specifically for the purposes of oyster dredging. The ship is a wooden-hulled, 46.2-foot-long, V-bottom two-sail bateau built using traditional construction methods. The boat has a permanent docking place at Millard Tydings Memorial Park in Havre de Grace, but at the time the historic sites survey was conducted, the boat was undergoing restoration at Frank J. Hutchins Memorial Park, located approximately one half-mile south of the Project Site. The Skipjack *Martha Lewis* is listed on the NR under Criterion A for its association with historic events and under Criterion C for embodying a method of construction that represents the work of a master.

Rodgers Tavern (CE-129)

Rodgers Tavern (NR-listed) is located on the north side of Broad Street in Perryville, approximately 300 feet east of the Susquehanna River Rail Bridge (see **Figure 24**, Photo 33). The two-and-a-half-story, coursed-stone structure dates to the mid-eighteenth century. It was a popular stop for travelers waiting for the ferry service to Havre de Grace, including George Washington, who lodged there in 1775 and again in 1795. Other prominent visitors included Martha Washington, Marquis de Lafayette, and Lieutenant General Rochambeau. John Rodgers, whose son, Commodore John Rodgers, was a renowned naval hero in the War of 1812 and was appointed Secretary of the Navy in 1823, purchased the tavern in 1780. Prior to his ownership, the tavern was operated by William Stephenson, possibly as early as 1745. John Rodgers ran the tavern until his death in 1791, after which his wife carried on the business. The side-gabled structure has two end chimneys and two four-over-four windows in each gable. A colonnade along the front of the basement on the south façade supports a pillared porch above. The porch is accessed by a short flight of steps on the east side. A central door flanked by six-over-six windows is located at the basement level, and a central door with a transom window flanked by two twelve-over-twelve windows on each side is located on the first floor. Rodgers Tavern is listed on the NR under Criterion A based on its association with prominent national figures such as George and Martha Washington, Marquis de Lafayette, and Lieutenant General Rochambeau. The tavern is also listed under NR Criterion C as an example of eighteenth century building construction and materials.

In accordance with an easement that the Society for the Preservation of Maryland Antiquities (“grantor”) deeded to the Maryland Historical Trust (“grantee”) in 1976 and amended in 1986, there is a preservation easement on the interior and exterior of the tavern as well as the associated land. As a result of the covenant, the grantor has agreed to keep and maintain the property and to allow the grantee an opportunity to review any proposed alterations.



Photo 33: View looking northeast at Rodgers Tavern.

Rodgers Tavern	Susquehanna River Bridge Project Havre de Grace and Perryville, MD	Figure 24
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Principio Furnace (Principio Iron Works [CE-112])

The Principio Iron Works (NR-listed) is located at 1723 Principio Furnace Road (see **Figure 25**, Photo 34). Although the buildings associated with the historic resource are located approximately one-half mile north of the Project Site, the southwest corner of the property (containing only a wooded area) is located in the study area. The Principio Furnace was the first iron furnace in Maryland and one of the first in the United States. Joseph Farmer, tasked by a group of English businessmen to explore the possibility of establishing an iron foundry in the colonies to supplement Britain's diminishing production, was sent to America in 1715. By 1719, Farmer, ironmaster John England, and a group of indentured servants that were skilled iron makers began producing small amounts of iron on land purchased in Maryland. The Principio Company was formed shortly thereafter, and construction of the first blast furnace began on property purchased on land adjacent to Principio Creek. The Principio Company quickly expanded and built another furnace in Cecil County, as well as one in Baltimore and one in Virginia on land leased from George Washington's father, Augustine Washington. Of the approximately 50 tons of pig iron exported to Britain between 1718 and 1755, it is estimated that about one-half came from the four furnaces owned by the Principio Company in Maryland and Virginia. The Principio Furnace produced cannon balls during the American Revolution for the Continental Army and during the War of 1812 before the British set fire to the works in 1813. The site and its ruins were purchased by Joseph Whitaker and his partners in 1836, and the iron works were reconstructed and a new blast furnace opened in 1837. In 1921, the Principio Iron Works became part of the Wheeling Steel Company and produced iron until 1925. Several outbuildings, a Second Empire style office building with a cupola and dormer windows in the mansard roof, and portions of the 1836 furnace survive today. The Principio Iron Works is listed on the NR under Criterion A based on its association with the country's early industrial development and under Criterion D for its archaeological potential.

Perry Point Mansion House and Mill (CE-146; CE-244)

The Perry Point Mansion House and Mill (see **Figure 25**, Photo 35) (NR-listed) is located south of the Perry Point Veterans Administration Medical Center at the mouth of the Chesapeake Bay, approximately one-half mile south of the Project Site. This mid- to late- eighteenth century, two-and-a-half-story Georgian mansion was home to the Stump family until 1918 when the house and the approximately 516-acre farm were sold to the federal government for \$150,000. During the Civil War, John Stump turned his farm over to the Union Army for the training of army mules and for quartering soldiers in his house. The stuccoed brick house has a hipped roof and double-end chimneys. Two gabled dormer windows are located in the roof of the north and south facades, and one gabled dormer window is located in between the chimney stacks on the east and west facades. The house has a two-story, wood frame east wing added in the nineteenth century, and a later rear addition. The windows throughout the original portion of the house and the east wing are six-over-six. The semi-circular dormer windows are framed by pilasters and have a keystone above the apex of the arch. The front door is flanked by sidelights and framed with a broken pediment and fluted pilasters. The stone gristmill, located approximately 450 feet south of the mansion on the Susquehanna River, has six-over-six windows and a central wooden door on each floor of the east and west façades. The east façade of the mill is two-and-a-half stories, but the west façade facing the river is three-and-a-half stories with the basement opening onto the shore. The third-floor door of the west façade was used to hoist in un-milled grain, while the second-floor door was used for machinery and the first-floor door was used to transport the milled grain to a boat via a ramp. The Perry Point Mansion House and Mill is listed on the NR under Criterion A because of its significance as a large nineteenth century farm owned and operated by a prominent local family and because of its association with housing Union Army soldiers during the Civil War, and under Criterion C for architectural significance.



Photo 34: View looking east at the Principio Fumace (Principio Iron Works).



Photo 35: View looking southeast at the Perry Point Mansion House.

Principio Furnace / Perry Point Mansion House	Susquehanna River Bridge Project Havre de Grace and Perryville, MD	Figure 25
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Perryville Railroad Station (CE-1442)

The Perryville Railroad Station (see **Figure 26**, Photo 36), located at 650 Broad Street, was determined eligible for listing on the NR under Criteria A and C due to its association with the larger pattern of system-wide upgrades during the railroad industry's golden age and as an example of an early twentieth century Colonial Revival style train station. The station was constructed circa 1905 by the Philadelphia, Baltimore, and Washington (PB&W) Railroad Company. The two-story, Colonial Revival, Flemish-bond brick building has glazed headers, a hipped roof, quoins, and a modillion cornice. The south façade facing the tracks has a projecting central entrance bay with a Palladian window above the name of the station, "Perryville," engraved in stone. The entrance, formerly a multi-pane window that was later expanded into a door, consists of a half-glazed door flanked by sidelights and a transom. Two multi-pane windows are located on the first floor of each side of the central projecting entrance bay, above which are lunette windows with stone keystones and imposts on the second floor. Gabled dormer windows with round-arched, multi-pane windows are located in the hipped roof. Stone panels carved with the date "1905" and the initials "P.B.W." are located in between the lunette windows on the second floor. A one-story canopy extends past the east and west elevations along the main façade. A chimney is located on the north façade, enclosed by a one-story entrance addition.

There are two railroad-related structures that are located in close proximity to the Perryville Station and contribute to its historic significance: the Perry Interlocking Tower (see **Figure 26**, Photo 37), and the ashlar stone-arch Perryville Railroad Station Undergrade Bridge at MP 59.39 (see **Figure 27**, Photo 38). The two-story, Flemish-bond brick interlocking tower, located southwest of the station, was constructed circa 1905. The building has a hipped roof, multi-pane and one-over-one windows, and an addition that encloses the chimney on the south façade. The stone bridge underneath the rail line is one of nine undergrade bridges that were built during the Pennsylvania Railroad (PRR)'s 1904-1906 building campaign when the PRR constructed the Susquehanna River Rail Bridge. As the nine undergrade bridges have been evaluated as eligible for inclusion on the NR for their association with the main bridge, the bridge under the Perryville Station platform is significant both for its contribution to the station as well as to the Susquehanna River Rail Bridge.

Amtrak Railroad or Perryville Road Bridge over the Susquehanna River and Overpasses (HA-1712)

The Amtrak Railroad or Perryville Road Bridge (see **Figure 27**, Photo 39), also known as the Susquehanna River Rail Bridge (NR-eligible), was constructed in 1906 by the Pennsylvania Railroad. The bridge, set on stone piers, is a swing bridge with a movable span that rotates horizontally to open (using a center pivot mounted on a pier in the river) to allow boats to pass. The bridge is comprised of 18 spans, which are numbered from north to south. The spans are not all of equal length. Spans 1 and 18, adjacent to the abutments, are 192 feet long; Spans 2 through 9 are each 255 feet long; and Spans 11 through 17 are approximately 196 feet long. The movable center swing span (Span 10) is 277 feet long and is composed of a riveted-steel through truss (where the rail track travels within the truss framework). The remaining 17 spans are open deck, pin-connected steel trusses, where the rail track travels on top of the span. The vertical height of the deck truss spans is approximately 30 feet. The vertical height of the swing span varies from 30 to 42 feet. The bridge, designed to carry heavier railroad traffic, was built next to an existing railroad bridge whose 1866 wooden trusses set on granite pilings were replaced with iron trusses in 1880. Following completion of the new bridge in 1906, the adjacent railroad bridge was converted to a vehicular bridge until it was dismantled in 1943. The granite pilings, located approximately 120 feet south of the Susquehanna River Rail Bridge, were left intact. These were determined not eligible for listing on the NR by MHT in 2007. The Amtrak Railroad or Perryville Road Bridge was determined eligible for listing on the NR under Criteria A and C as an example of an early twentieth century railroad bridge built by an important American

Susquehanna River Rail Bridge Project

railroad company and as an example of engineering that acknowledges two different modes of transportation.

As part of this Project, nine bridges that were historically associated with the Susquehanna River Rail Bridge were determined NR eligible, also under Criteria A and C, and the existing NR eligibility determination for the Susquehanna River Rail Bridge was modified to include these bridges. These nine bridges, collectively called the “Susquehanna River Rail Bridge Overpasses,” are undergrade bridges that carry the NEC over various streets, access roads, and streams in Perryville and Havre de Grace. They were constructed as part of the 1904-1906 building campaign undertaken by the Pennsylvania Railroad that also included the Susquehanna River Rail Bridge. The nine bridges include: the North Stokes Street Undergrade Bridge; the North Freedom Lane Undergrade Bridge; the Centennial Lane Undergrade Bridge; the North Adams Street Undergrade Bridge; the North Juniata Street Undergrade Bridge; the Lily Run (or Lewis Run) Undergrade Bridge; the Access Road Undergrade Bridge; the Perryville Railroad Station Undergrade Bridge (which is also a contributing element to the Perryville Railroad Station complex); and the Mill Creek Undergrade Bridge. The bridges are constructed of the same materials as the Susquehanna River Rail Bridge, including Allegheny Mountain sandstone, Port Deposit granite, and (in the case of some bridges) steel. Some are stone-arch bridges; others consist of steel plate girders atop stone abutments. They are visibly consistent in construction style, with the same distinctive quarry-faced granite ashlar facing. In terms of construction materials, engineering, and design, the bridges relate to each other and to the Susquehanna River Rail Bridge, and they share a history as part of an important construction effort undertaken by the Pennsylvania Railroad in the early twentieth century. Overall, the bridges retain a high degree of historic integrity.

In addition, due to the importance of transportation to the history of the Havre de Grace Historic District, the Susquehanna River Rail Bridge and the four bridges within the Havre de Grace Historic District (at MP 60.51, 60.56, 60.61, and 60.69) contribute to the historic district’s significance.



Photo 36: View looking northeast at the Perryville Railroad Station.



Photo 37: View looking southwest at the Perry Interlocking Tower.

Perryville Railroad Station /
Perry Interlocking Tower

Susquehanna River Bridge Project
Havre de Grace and Perryville, MD

Figure 26



Photo 38: View looking south at the Perryville Railroad Station Undergrade Bridge.



Photo 39: View looking northeast at the Susquehanna River Rail Bridge.

Perryville Railroad Station Undergrade Bridge /
Susquehanna River Rail Bridge

Susquehanna River Bridge Project
Havre de Grace and Perryville, MD

Figure 27

Perry Point Veterans Administration Medical Center Historic District (CE-1544)

The Veterans Administration (VA) Medical Center (see **Figure 28**, Photo 40) at Perry Point (NR-eligible) was developed primarily in the 1920s through the 1940s as a neuro-psychiatric treatment facility for military veterans. The architectural style and site layout reflect design principles developed by the VA during this period, which emphasized using architectural styles compatible with the local vernacular architecture and siting buildings to maximize landscaping views. Thus, the residential buildings at the VA Medical Center are primarily Colonial Revival style, and the site design maximizes views of the Susquehanna River and Chesapeake Bay. The closest buildings associated with the VA Medical Center are located approximately 550 feet south of the Project Site, primarily along Avenues A, B, C, and D, and 2nd and 3rd Streets. The VA Medical Center at Perry Point was determined eligible for listing on the NR under Criterion A for its association with the growth of the federal government's provision of neuro-psychiatric treatment for military veterans and under Criterion C as a cohesive collection of buildings.

Crothers House (Furnace Bay Golf Clubhouse [CE-1566])

The Crothers House (see **Figure 28**, Photo 41) (NR-eligible), which is currently used as the clubhouse for the Furnace Bay Golf Course, was built in 1936 as a residence for Omar and Margaret Crothers, both of whom would serve in the Maryland State Senate in the 1950s. The two-and-a-half story, coursed fieldstone, Colonial Revival residence is T-shaped and has recessed, two-story side wings flanking the central block. The northwest façade of the central entrance block has five bays and a pedimented portico projecting from the entrance with a denticulated cornice and gable supported by fluted Tuscan columns. The door has a round-arched transom window and is flanked by sidelights and fluted pilasters. The double-hung sash windows have wood sills and fieldstone jack arches with keystones. The windows on the first floor are eight-over-twelve, while the second floor windows are eight-over-eight. The central block has gable-end chimneys and five dormer windows with double-hung, six-over-six windows corresponding to the bays below. The roof of the building is clad in slate shingles. The first floor of the southwest wing has multipane windows, while the second floor is an enclosed sun porch with multipane windows and panels below. Engaged columns set on tall bases flank the windows on the second floor of the west façade of the southwest wing, while pairs of these columns frame pairs of the multipane windows on the second floor of the south façade of this wing. The rear T portion of the original building is flanked by later twentieth century, vinyl- and wood-clad additions. The Crothers House was determined eligible for listing on the NR under Criterion C for its architectural significance as an example of a Colonial Revival house associated with early twentieth century estates for the wealthy and for its notable architectural features.



Photo 40: View looking east at representative houses along Avenue D within the Perry Point Veterans Administration Medical Center Historic District.



Photo 41: View looking northeast at the Crothers House (Fumace Bay Golf Clubhouse), 78 Chesapeake View, Perryville.

Perry Point Veterans Administration
Medical Center Historic District /
Crothers House

Susquehanna River Bridge Project
Havre de Grace and Perryville, MD

Figure 28

Woodlands Farm Historic District (CE-145)

The Woodlands Farm Historic District (NR-eligible) is an extension of the boundary of the NR-listed Woodlands property north of Maryland Route 7 to include the Woodlands Farm South Complex. The NR-listed Woodlands property consists of a main house and several outbuildings set on 69 acres. The original portion of the two-and-a-half story, three-bay stucco-clad main house was constructed circa 1810-1820. Subsequent later additions dating to the 1840s were unified with the original structure through the addition of Greek Revival-style architectural elements, such as the entrance portico. The Woodlands Farm South Complex is located to the south across Maryland Route 7 and consists of a 347-acre farm containing numerous nineteenth century buildings, including several barns, a tenant house and garage, a blacksmith shop, a bullpen, a foreman's house and garage, a bungalow, and a springhouse. This complex of buildings has been owned continuously by the Coudon family since 1822. Although the Coudon family stopped farming operations in 1970, they have since leased the buildings and equipment to other farmers. The Woodlands Farm South Complex was determined eligible for listing on the NR under Criteria A and C due to its association with the evolution of the agricultural industry in Cecil County from the early nineteenth to late twentieth centuries, and as representing a cohesive collection of mostly intact agricultural buildings dating to the nineteenth century.

Perryville United Methodist Church (CE-1573)

As part of this Project, the Perryville United Methodist Church (see **Figure 29**, Photo 42) was determined to be NR eligible. The Perryville United Methodist Church was constructed in 1896, 30 years after the founding of the congregation. To accommodate the growing congregation and a new Sunday School, an addition was added to the south façade of the Church between 1923 and 1943, according to Sanborn Fire Insurance maps. A Queen Anne-style Parsonage was erected north of the Church circa 1905. A Church House, donated by Mr. and Mrs. William H. Cole, a prominent local family, was erected immediately south and west of the Church in 1928. The Church property retains a high degree of historic integrity. Although an addition altered the south façade of the Church, the change occurred in the Church's early history and is historic in its own right, and exemplifies the Church's expansion to meet the needs of a growing congregation during Perryville's period of prosperity. The Church House has had few alterations, mainly consisting of changes to the entrance and the installation of replacement windows after a 1991 gas explosion from an adjacent building. The Parsonage, although somewhat altered, has been associated with the Church since its initial construction and retains its original massing and fenestration pattern. The Church, Parsonage, and Church House were determined eligible for the NR under Criterion A for their role in the history of the local development of the Methodist Church and under Criterion C as examples of Gothic Revival-style ecclesiastical architecture. They retain a high degree of historic integrity.

Perryville Presbyterian Church (CE-1574)

As part of this Project, the Perryville Presbyterian Church (see **Figure 29**, Photo 43) was determined to be NR eligible. The Perryville Presbyterian Church was constructed circa 1892, four years after the founding of the congregation. The prominent local Stump family was instrumental in financing the construction of the church. The building was originally constructed on the present site of the Perryville Train Station. When the Station was built from 1904-1905, the church was moved approximately one block to its present location at 710 Broad Street. The Stumps purportedly donated the land for the second site as well. The church is a fine regional example of the Gothic board-and-batten church architecture initially popularized by Richard Upjohn in the 1850s, and adapted for use across North America through the second half of the nineteenth century. The church appears to retain a high degree of historic integrity. Although the building was moved, the move occurred within the earliest period of the church's existence and was orchestrated and overseen by the same group responsible for the church's initial construction. Therefore, the church is considered to retain historic significance and integrity on its present site. It was determined eligible for the NR under

Susquehanna River Rail Bridge Project

Criterion A for its role in the local history of the Presbyterian Church and under Criterion C as a fine example of a Gothic board-and-batten church.

4.2.C. SUMMARY

As described above, a historic architectural resources survey conducted for the Project resulted in the identification of 13 architectural resources in the APE. Six of these are listed on the NR; five were previously determined eligible for NR listing; and two were determined NR-eligible as part of this Project. In addition, a series of rail undergrade bridges were newly identified as contributing components to other historic resources (all nine contribute to the NR-eligible Susquehanna River Rail Bridge; the four undergrade bridges at MP 60.51, 60.56, 60.61, and 60.69 contribute to the NR-listed Havre de Grace Historic District; and the undergrade bridge at MP 59.39 contributes to the NR-eligible Perryville Railroad Station complex.)



Photo 42: View looking northwest at the Perryville United Methodist Church.



Photo 43: View looking southeast at the Perryville Presbyterian Church, 710 Broad Street.

Historic Churches

Susquehanna River Bridge Project
Havre de Grace and Perryville, MD

Figure 29

5. EFFECTS ASSESSMENT

Following the identification of historic architectural resources within the APE, FRA/MDOT evaluated the potential for the Project to affect these resources; considered measures to avoid, minimize, or mitigate adverse effects; and solicited input from consulting parties (see Appendix B) and the general public.

The ACHP's regulations to implement Section 106 of the National Historic Preservation Act (36 C.F.R. Part 800) state that "*Effect* means alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register" (36 C.F.R. Part 800.16[i]). If a proposed undertaking will have an effect on a NR-listed or eligible resource, the regulations call for an evaluation as to whether or not the effect will be adverse: "An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NR in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling or association...Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative." (36 C.F.R. Part 800.5 [1]).

Adverse effects on historic properties include, but are not limited to:

- Physical destruction, damage, or alteration of all or part of the property;
- Isolation of the property from or alteration of the character of the property's setting when that character contributes to the property's qualification for the NR;
- Introduction of visual, audible or atmospheric elements that are out of character with the property or alter its setting;
- Neglect of a property resulting in its deterioration or destruction; and
- Transfer, lease, or sale of the property (36 CFR Part 800.5[2]).

The proposed concept plans for Alternatives 9A and 9B were evaluated for their potential effects on the following identified historic architectural resources within the APE-Architectural History: Susquehanna River Rail Bridge and Overpasses, Havre de Grace Historic District, Southern Terminus, Susquehanna and Tidewater Canal – South Lock #1 and Toll House, Martha Lewis (Skipjack), Rodgers Tavern, Principio Furnace (Principio Iron Works), Perry Point Mansion House and Mill, Perryville Railroad Station, Perry Point Veterans Administration Medical Center Historic District, Crothers House (Furnace Bay Golf Clubhouse), Woodlands Farm Historic District, Perryville United Methodist Church, and Perryville Presbyterian Church.

5.1. SUSQUEHANNA RIVER RAIL BRIDGE AND OVERPASSES

The Susquehanna River Rail Bridge and nine undergrade bridges, which were all constructed during the same 1904-1906 building campaign by the Pennsylvania Railroad, are eligible for listing on the NR under Criteria A and C. Because all ten bridges will be impacted, the effect of the Project on the bridges was evaluated in accordance with the criteria for adverse effect.

In accordance with Section 106, FRA/MDOT first considered whether the program goals could be met through rehabilitation of the existing Susquehanna River Rail Bridge. The Section 106 regulations define "Physical destruction, damage, or alteration of all or part of the property" as an adverse effect; therefore, demolition of the NR-eligible bridge would constitute an adverse effect. In the summer of 2013, Amtrak commissioned an engineering inspection of the Susquehanna River Rail Bridge (with a supplemental specialty pin testing program in the summer 2014), which indicated that the bridge superstructure is in poor to fair structural condition. The inspection revealed that the cracks and worn pin joints allowing movement are so extensive in the pin-connected trusses and represent such a major portion of the overall bridge system that it is not deemed economical, prudent, or feasible to continue on this course of ongoing

Susquehanna River Rail Bridge Project

repair. Piecemeal repairs of fatigue cracks due to corrosion and section loss and out-of-plane bending, replacement of missing fasteners and patching holes in primary support members will not restore bridge members to their original condition, as the fatigue damage has already been done.

The recommended repairs in the inspection report address specific deficiencies, but their implementation would not bring the bridge into a state of good repair. A state of good repair assumes bridge management practices that minimize asset life-cycle costs and avoid service disruption and load restrictions as well as providing a reliable factor of safety. These goals cannot be achieved with a 100-year-old bridge that contains thousands of fractured critical members whose remaining fatigue life cannot be precisely determined. The engineering report concluded that the only practical way to restore this bridge to a state of good repair would be to replace the fatigue-damaged pin-connected deck truss spans with truss spans of modern design. Attempting major reconstruction of the existing truss superstructures or span-by-span replacement would be prohibitively costly and technically infeasible to perform without causing significant rail operation disruptions. Furthermore, substantial capital expenditures would be required to rehabilitate and strengthen piers and foundations to meet current design criteria and to mitigate seismic forces that were not considered in the original design.

Conversion of the swing bridge into a lift bridge during rehabilitation was also considered during conceptual engineering, since conversion to a lift bridge would permit the new bridge to be built closer to the existing bridge. Under this scheme, only one new bridge would be built and the rehabilitated existing bridge would be retained. However, due to the condition of the bridge and its advanced age, this option is still problematic and cost ineffective as it would retain a more than 100-year-old structure that is in deteriorated condition. It would not satisfy the Project's purpose and need, and would not meet the Project goal to optimize existing and planned infrastructure and accommodate future freight, commuter, intercity, and high-speed rail operations.

Rehabilitating the existing bridge for non-rail use also did not pass the fatal flaw screening. The span over the navigation channel would need to be replaced to provide the necessary vertical clearance for mariners, with transition ramps from the existing trusses. The center swing-span pier and several approach spans would need to be removed. Retaining the area occupied by the existing bridge for non-rail use would negatively affect the new rail bridge alignments by increasing right-of-way impacts and/or reducing the achievable speed.

Therefore, FRA/MDOT determined that the rehabilitation alternative is not suitable for either continued freight and/or passenger rail use or non-rail use, due to the current condition of the bridge and the infeasibility of reconstructing the bridge to a state of good repair without significant rail operations disruptions and prohibitive costs. As a result, both Project alternatives under consideration, Alternatives 9A and 9B, include demolition of the Susquehanna River Rail Bridge.

Although the adverse effect of demolishing the bridge cannot be avoided, FRA/MDOT considered partially minimizing the adverse effect by designing the two new bridges and their piers to be compatible with the character defining features of the historic bridge. The character defining features of the existing bridge include its traditional railroad architecture, especially its metal trusses, its central projecting section, and its use of Allegheny Mountain sandstone and Port Deposit granite. Amtrak is considering four alternative bridge designs and four pier designs for the proposed new bridges. The bridge designs, and the extent to which they would minimize the adverse effects, are listed below (in descending order of the degree to which the new design helps to minimize the adverse effect of the removal of the historic bridge):

- The bridge alternative in **Figure 30**, Photo 44 combines deck truss approach spans with a through truss main span and is therefore closest to the original bridge in design. Overall, this design rates high in terms of its ability to minimize the adverse effect of demolishing the historic bridge.

- The bridge alternative in **Figure 30**, Photo 45 maintains a through truss center span, yet replaces the deck truss construction with a girder deck. Although this is a change from the existing bridge, a girder is a traditional rail design and therefore appropriate for the replacement of a historic bridge. Overall, this design rates medium in terms of its ability to minimize the adverse effect of demolishing the historic bridge.
- The bridge alternative in **Figure 31**, Photo 46 replaces the through truss of the center span with an arch and the deck truss construction with a girder deck. Although this is a change from the existing bridge, both arch construction and deck girders are traditional rail design and therefore appropriate for the replacement of a historic bridge. Overall, this design rates medium in terms of its ability to minimize the adverse effect of demolishing the historic bridge.
- The bridge alternative in **Figure 31**, Photo 47 replaces the through truss of the center span with an arch and the deck truss construction with a girder deck. The use of arch construction is traditional rail design; however, the remaining design elements, especially the delta piers (see **Figure 32**, Photo 48), are not compatible with a historic bridge. Overall, this design rates low in terms of its ability to minimize the adverse effect.

Three of the proposed pier designs, an arched “keyhole” (see **Figure 32**, Photo 49), a fluted (see **Figure 33**, Photo 50), or a wall (see **Figure 30**, Photos 44-45) have a traditional design and would therefore help to minimize the adverse effect of demolishing the bridge. These piers could be used with any of the three truss or girder bridge alternatives shown in Photos 44-46. The delta piers shown in Photos 47-48 have a modern look and would not minimize the adverse effect of demolishing the bridge.

The four bridge designs have been shown to consulting parties and the general public at several meetings, including on December 10, 2014, November 10, 2015, and April 14, 2016. The design alternative that received the strongest support was the one with a deck girder and central arch (shown in **Figure 31**, Photo 46), primarily due to the more open look of this design.

The Susquehanna River Rail Bridge’s stone is an important character defining feature, especially because of the use of Port Deposit granite from a local quarry. The adverse effect of the bridge’s demolition could be somewhat minimized by incorporating stone into the two new bridges. However, FRA/MDOT have determined that using stone in the new bridge is not feasible as it would not meet current engineering design standards. In addition, as indicated above, public comment favors a more open pier design (see further discussion on the importance of viewsheds in conjunction with the Havre de Grace Historic District.)

In addition to adversely affecting the Susquehanna River Rail Bridge itself, the Project would impact the nine associated masonry rail undergrade bridges that carry the NEC, listed from north to south and shown on the aerial photos in **Figure 34** to **Figure 35**:

- Mill Creek Undergrade Bridge, MP 59.00: a stone-arch bridge with stone abutments resting on spread footings. The bridge appears to remain largely intact, although an I-beam that runs along the edge of the deck is anchored on either end with concrete that appears to be a later repair. The Project calls for the construction of a precast concrete culvert extension on the east side of the tracks (see **Figure 36**, Photo 51).
- Perryville Railroad Station Undergrade Bridge, MP 59.39: a stone-arch masonry structure with stone abutments on spread footings. The Project calls for the construction of a precast concrete culvert extension on the east side of the tracks (see **Figure 36**, Photo 52).
- Access Road Undergrade Bridge, MP 59.52: a two-span concrete-encased steel-stringer bridge that sits on stone abutments and a central steel pier, both founded on spread footings. The bridge’s masonry abutments, steel pier, and steel deck do not appear to have been substantially altered. The Project calls for the current structure to be replaced with a precast concrete culvert and the existing

abutments to be partially demolished and buried in fill. In addition, the new bridge will extend beyond the limits of the current structure to the east and the west (see **Figure 37**, Photos 53-54).

- North Freedom Lane Undergrade Bridge, MP 60.51: a stone-arch bridge that consists of a masonry arch and abutments (or wing walls) on spread footings that retain the embankment on which the NEC runs in the area. The bridge appears to be in good condition and does not appear to have been visibly altered since its construction as part of the 1904-1906 bridge. The Project calls for the construction of a precast concrete culvert extension on the east and west sides of the tracks (see **Figure 38**, Photos 55-56).
- North Stokes Street Undergrade Bridge, MP 60.56: bridge comprised of stone abutments (or wing walls) on spread footings supporting steel plate girders. The deck appears to be constructed of reinforced concrete. The masonry abutments and steel plate girders appear to date to the original 1904-1906 construction of the bridge. The Project calls for removal of a portion of the existing stone masonry abutment on the west side of the tracks and construction of new concrete abutments on both sides of the tracks (see **Figure 39**, Photos 57-58).
- Centennial Lane Undergrade Bridge, MP 60.61: a stone-arch bridge that consists of a masonry arch and abutments on spread footings. The bridge appears to be in good condition and does not appear to have been visibly altered since its construction as part of the 1904-1906 bridge. The Project calls for the construction of a through plate girder bridge on a concrete abutment on the east side of the tracks for Alternative 9A and a precast concrete culvert extension on both sides of the tracks for Alternative 9B (see **Figure 40**, Photos 59-60)
- North Adams Street Undergrade Bridge, MP 60.69: The bridge consists of two single-track steel plate girder decks atop stone masonry abutments on spread footings. The masonry abutments and steel plate girders appear to date to the original construction of the 1904-1906 bridge. Some repairs to the upper portions of the masonry abutments are evident. The concrete deck appears to have been replaced and the deck platform appears to have been extended with a metal plate supported by metal brackets affixed to outer sides of the concrete decking. The Project calls for construction of a new concrete abutment on the east side of the tracks and a concrete abutment extension on the west side (see **Figure 41**, Photos 61-62).
- North Juniata Street Undergrade Bridge, MP 60.77: The bridge consists of four single-track plate-girder decks atop stone abutments with spread footings. The masonry abutments and steel plate girders appear to date to the original construction of the 1904-1906 bridge. The concrete deck appears to have been replaced and the deck platform appears to have been extended with a metal plate supported by metal brackets affixed to outer sides of the concrete decking. The Project calls for construction of a new concrete abutment on the east side of the tracks (see **Figure 42**, Photo 63).



Photo 44: Rendering of a proposed replacement bridge with a truss approach and a truss main span.
View looking northeast from Havre de Grace.



Photo 45: Rendering of a proposed replacement bridge with a girder approach and a truss main span.
View looking northeast from Havre de Grace.

Bridge Design Renderings	Susquehanna River Rail Bridge Project Havre de Grace and Perryville, MD	Figure 30
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Photo 46: Rendering of a proposed replacement bridge with a girder approach and arch main span.
View looking northeast from Havre de Grace.



Photo 47: Rendering of a proposed replacement bridge with a Delta frame approach and arch main span.
View looking northeast from Havre de Grace.

Bridge Design Renderings	Susquehanna River Rail Bridge Project Havre de Grace and Perryville, MD	Figure 31
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Photo 48: Rendering of the piers for the Delta frame approach.
View looking east from Havre de Grace.



Photo 49: Rendering of possible arched piers to be used with the girder approach.
View looking east from Havre de Grace.

Bridge Design Renderings

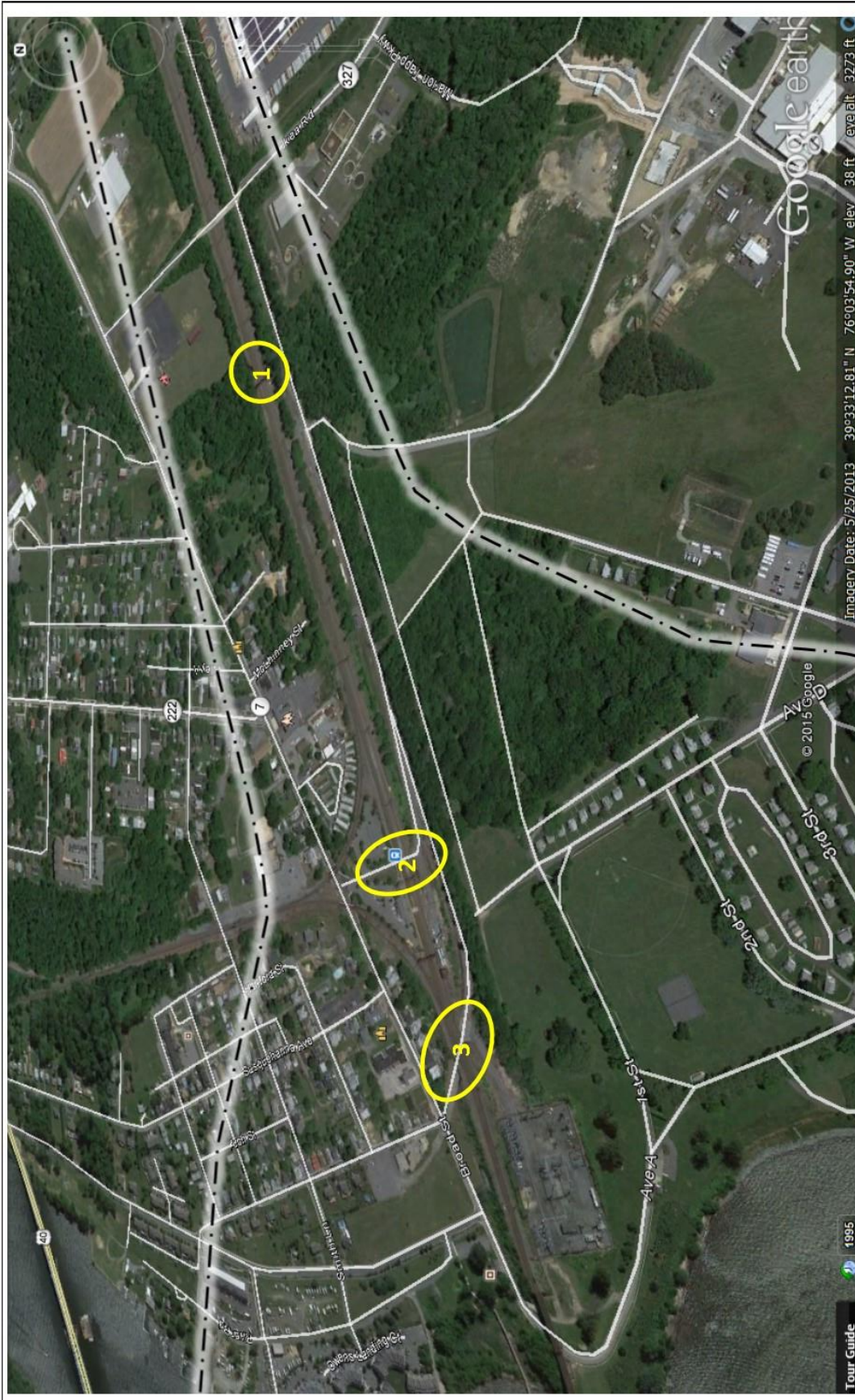
Susquehanna River Rail Bridge Project
Havre de Grace and Perryville, MD

Figure 32



Photo 50: Rendering of possible fluted piers to be used with the girder approach.
View looking east from Havre de Grace.

Bridge Design Rendering	Susquehanna River Rail Bridge Project Havre de Grace and Perryville, MD	Figure 33
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- 1. Mill Creek Undergrade Bridge (MP 59.00)
- 2. Perryville Railroad Station Undergrade Bridge (MP 59.39)
- 3. Access Road Undergrade Bridge (MP 59.52)

--- Architectural APE

Undergrade Bridges in Perryville

Susquehanna River Rail Bridge Project

Figure 34



Photo 51: View looking northwest at the east side of the Mill Creek Undergrade Bridge (MP 59.00) that will be extended with a precast concrete culvert.



Photo 52: View looking at the east side of Perryville Railroad Station Undergrade Bridge (MP 59.39) that will be extended with a precast concrete culvert.

Mill Creek and Perryville Railroad Undergrade Bridges

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Figure 36



Photo 53: View looking northwest at the east side of the Access Road Undergrade Bridge (MP 59.52), which will be altered via replacing the existing structure with a precast concrete culvert (with a wider footprint) and partially demolishing and burying the abutments.



Photo 54: View looking southeast at the west side of the Access Road Undergrade Bridge (MP 59.52), which will be altered via replacing the existing structure with a precast concrete culvert (with a wider footprint) and partially demolishing and burying the abutments.

Access Road Undergrade Bridge	Susquehanna River Bridge Project Havre de Grace and Perryville, MD	Figure 37
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Photo 55: View looking north at the railroad east side of North Freedom Lane Undergrade Bridge (MP 60.51), which will be altered via construction of a precast concrete culvert.



Photo 56: View looking south at the railroad west side of North Freedom Lane Undergrade Bridge (MP 60.51), which will be altered via construction of a precast concrete culvert.

<p>North Freedom Lane Undergrade Bridge</p>	<p>Susquehanna River Bridge Project Havre de Grace and Perryville, MD</p>	<p>Figure 38</p>
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Photo 57: View looking northwest at the railroad east side of North Stokes Street Undergrade Bridge (MP 60.56), which will be altered via building a new concrete abutment.



Photo 58: View looking south at the railroad west side of North Stokes Street Undergrade Bridge (MP 60.56), which will be altered via removing a portion of the existing stone masonry abutment and building new concrete abutment.

<p>North Stokes Street Undergrade Bridge</p>	<p>Susquehanna River Bridge Project Havre de Grace and Perryville, MD</p>	<p>Figure 39</p>
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Photo 59: View looking north at the railroad east side of Centennial Lane Undergrade Bridge (MP 60.61), which will be extended with a precast concrete culvert and possibly altered via construction of a through plate girder bridge on a concrete abutment (for Alternate 9A only).



Photo 60: View looking south at the railroad west side of Centennial Lane Undergrade Bridge (MP 60.61), which will be extended with a precast concrete culvert.

Centennial Lane Undergrade Bridge	Susquehanna River Bridge Project Havre de Grace and Perryville, MD	Figure 40
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Photo 61: View looking north at the railroad east side of North Adams Street Undergrade Bridge (MP 60.69), which will be altered via construction of a new concrete abutment.



Photo 62: View looking southeast at the railroad west side of North Adams Street Undergrade Bridge (MP 60.69) that will be extended with a concrete abutment.

<p>North Adams Street Undergrade Bridge</p>	<p>Susquehanna River Bridge Project Havre de Grace and Perryville, MD</p>	<p>Figure 41</p>
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Photo 63: View looking northwest at the railroad east side of North Juniata Street Undergrade Bridge (MP 60.77), which will be altered via construction of a new concrete abutment.

North Juniata Street
Undergrade Bridge

Susquehanna River Bridge Project
Havre de Grace and Perryville, MD

Figure 42

Susquehanna River Rail Bridge Project

- Lily Run (or Lewis Run) Undergrade Bridge, MP 60.85: The bridge is a stone-arch culvert comprised of stone abutments on a spread footing. The Project proposes to span over the flood plain with a multi-girder bridge, thereby avoiding the need to extend the culvert (see **Figure 43**, Photo 64).

As explained in the historic sites survey evaluation, these bridges relate to both the history and the design of the Susquehanna River Rail Bridge:

The bridges are constructed of the same materials as the Susquehanna River Rail Bridge, including Allegheny Mountain sandstone, Port Deposit granite, and (in the case of some bridges) steel. Some are stone-arch bridges; others consist of steel plate girders atop stone abutments. They are visibly consistent in construction style, with the same distinctive quarry-faced granite ashlar facing. In terms of construction materials, engineering, and design, the bridges relate to each other and to the Susquehanna River Rail Bridge, and they share a history as part of an important construction effort undertaken by the Pennsylvania Railroad in the early 20th century. Overall, the bridges retain a high degree of historic integrity.

FRA/MDOT evaluated that the proposal to span over and therefore avoid altering the Lily Run Undergrade Bridge (MP 60.85) will not have an adverse effect. However, the Project will have an adverse effect on the other eight historic bridges due to the proposal to either replace the existing bridges or to extend them with concrete abutments. The adverse effect could be minimized or avoided by using stone in the construction of the new bridge extensions; however, FRA/MDOT have determined that using stone is not feasible as it would not meet current engineering design standards. Therefore, it is recommended that the adverse effect be minimized by using a form liner that emulates stone and is stained to be compatible with the color of the existing stone. In addition, to ensure that the new retaining walls in close proximity to the bridges do not adversely affect the historic resources, the design of the new walls should be in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*, so that the walls are compatible with the bridges' historic materials, features, size, scale and proportion, and massing.

The Susquehanna River Rail Bridge Project Advisory Board and the Town of Perryville have recommended that the north face and wing walls of the underpass at MP 59.52 “should be restored to its original architectural appearance,” and that “the entire north entrance of this underpass should be thoroughly cleaned and well landscaped along the adjacent embankments and out to Broad Street.” In addition, the Susquehanna River Rail Bridge Project Advisory Board and the Town of Perryville have also recommended that the “low tunnel-like underpass [at MP 59.39] that divides the two MARC Station parking lots should be abandoned by sealing it off from the north side. The south side may be left open for historical purposes, provided it is made secure from trespassers.” The abandonment and sealing off of the underpass are not part of the Project and, if added, would constitute an adverse effect under Section 106.

The following components of the Project will have no direct physical effects and only limited visual effects on the nine historic undergrade bridges: the new communications, overhead contact, and signal systems; minor modifications to the Perry Electrical Substation; the modification or relocation of the transmission tower on the west side of the track; and modifications to the interlockings. Therefore, because these components will not alter a characteristic that makes the undergrade bridges eligible for inclusion in the NR, they will have no effect as defined in 36 CFR Part 800.16.



Photo 64: View looking northeast at the railroad east side Lily Run Undergrade Bridge (MP 60.85) which will be spanned over by a multi-girder bridge.

Lily Run Undergrade Bridge

Susquehanna River Bridge Project
Havre de Grace and Perryville, MD

Figure 43

5.2. HAVRE DE GRACE HISTORIC DISTRICT

To assess the Project's effects on the Havre de Grace Historic District, the following Project elements were reviewed:

- Demolition of the existing Susquehanna River Rail Bridge.
- Visual effects associated with the replacement of the Susquehanna River Rail Bridge, including the change from one to two bridges, the massing and height of the new bridges and their piers and approaches, and the construction of new retaining walls.
- Physical taking of property within the historic district.
- Damage to historic buildings.
- Alterations to the four undergrade bridges within the historic district.
- New communications, overhead contact, and signal systems.

5.2.A. DEMOLITION OF THE SUSQUEHANNA RIVER RAIL BRIDGE

Because the bridge is a contributing feature of the Havre de Grace Historic District, the proposed demolition of the bridge will have an adverse effect on the district due to the “physical destruction, damage, or alteration of all or part of the property.” This adverse effect can be minimized by ensuring that the two new bridges over the river use a traditional design for the bridges and piers.

5.2.B. VISUAL EFFECTS

The Project's visual effects on the Havre de Grace Historic District were evaluated from three aspects: the extent to which the Project would either further block or open up views to/from the historic district, the extent to which the view looking at the bridge itself from the historic district would be altered, and the extent to which the view from structures within the historic district would be altered due to the Project coming in closer proximity to the structures.

As explained in the NR nomination for the historic district, viewsheds were historically significant within Havre de Grace, including views both to and from the water. The fact that the Project proposes to replace one bridge with two will result in greater mass that will potentially block views to/from the historic district. However, this effect on viewsheds will to a great extent be counterbalanced by the fact that the bridges will be 14' higher in elevation at the navigation channel of the river, thereby opening up views under the bridges. In addition, a girder bridge, versus the existing heavy construction truss bridge, will be more shallow and therefore result in more open vistas. In terms of the number of piers for the new bridges, the difference between the existing conditions (27 piers, including 16 from the existing bridge and 11 from the former 1866 bridge) and the proposed construction of between 26 – 38 piers depending on the selected bridge design is not a large difference and therefore will not have an effect on the views to/from the historic district.

In terms of views from the historic district to the bridge, the most important character defining feature, whether in close proximity to the bridge (see **Figure 44**, Photo 65) or further removed (see **Figure 44**, Photo 66) is the bridge's long linear nature with a traditional central feature, currently a truss. All four proposed bridge designs will retain this characteristic.

In summary, the Project will have an effect, but not an adverse effect, on the Havre de Grace Historic District's character defining feature of viewsheds to/from the water and to the bridge.

Of greater concern, however, is the extent to which the Project would have a visual effect on individual structures within the Havre de Grace Historic District. In order to accommodate the increase from two tracks to four tracks, the elevated tracks going through the historic district will need to be expanded in

width and height, with new retaining walls added. In terms of height, the approach to the bridge in Havre de Grace will be six feet higher at the south abutment, three feet higher at Stokes Street, and two feet higher at Adams Street near the southern end of the historic district. In terms of width, Alternative 9A and Alternative 9B will result in placing the tracks closer to contributing structures within the historic district as shown in **Table 3**.

Table 3
Distance to Contributing Structures

Building/Cluster	Alternative 9A	Alternative 9B
511 Warren Street	Shifted 30 feet east	Shifted 13 feet east
Cross Mission Church, 429 N. Stokes Street	Shifted 44 feet east	Shifted 19 feet east
Bungalows at the intersection of Adams and Warren Streets (west side)	Shifted 4 to 5 feet west	
518 N. Stokes Street	Shifted 26 to 28 feet west	
Mid-nineteenth century houses on southeast corner of N. Stokes Street and 560-566 Otsego Street	Shifted 30 to 37 feet west	
513 Otsego Street	Shifted 46 feet west	
509 Otsego Street	Shifted 47 feet west	
600 Water Street	Shifted 48 feet west	

The proposed changes, especially the widening that will bring the tracks in much closer proximity to some of the contributing structures within the historic district, will result in “the isolation of the property from or alteration of the character of the property’s setting when that character contributes to the property’s qualification for the National Register,” thus constituting an adverse effect. The areas of greatest concern are:

- West side of the tracks:
 - Structures at the intersection of Otsego and Water Streets (see **Figure 45**, Photo 67)
 - Vernacular Victorian at 518 N. Stokes Street (see **Figure 45**, Photo 68)

These structures would be impacted by the effect of the widening of the bridge approach and the construction of the new retaining walls for both Alternatives 9A and 9B. The tracks would be 46-48 feet closer to the structures at the intersection of Otsego and Water Streets and 26-28 feet closer to 518 N. Stokes Street.

- East side of the tracks:
 - Nineteenth century structure at 511 Warren Street (see **Figure 46**, Photo 69).

The tracks would be 40 feet closer in Alternative A, and only 13 feet closer in Alternative B.



Photo 65: View looking northeast at the Susquehanna River Rail Bridge from properties within the historic district in close proximity to the bridge.



Photo 66: View looking northeast towards the Susquehanna River Rail Bridge from the Frank J. Hutchins Memorial Park, showing the bridge from one of the furthest points in the historic district within the APE.

Views from the Havre de Grace Historic District	Susquehanna River Bridge Project Havre de Grace and Perryville, MD	Figure 44
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Photo 67: View looking east along Otsego Street at the houses located at the intersection of Otsego and Water Streets. The setting of these houses will be altered by the proposed widening that will bring the tracks 46-48 feet closer to them.



Photo 68: View looking southwest at the mid-nineteenth century house at 518 N. Stokes Street in relation to the railroad tracks. The setting of this house will be altered by the proposed widening that will bring the tracks 26-28 feet closer to it.

Contributing Structures on the West Side of the Tracks	Susquehanna River Bridge Project Havre de Grace and Perryville, MD	Figure 45
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Photo 69: View looking north from the rear of 511 Warren Street, showing its current relationship to the railroad tracks. The setting of this house will be altered by the proposed widening that will bring the tracks either 13 feet closer (Alternative 9B) or 30 feet closer (Alternative 9A).

View from a contributing Structure
on the East Side of the Tracks

Susquehanna River Bridge Project
Havre de Grace and Perryville, MD

Figure 46

Several factors were taken into consideration in assessing the extent of the adverse effect on the structures on the west side of the tracks. First, the visual effects of the widening of the bridge approach near the intersection of Otsego and Water Streets will be minimized by the fact that the stone bridge abutment and wingwall across from the houses on Otsego Street will be removed and the new abutment will be placed further south near Freedom Lane. In addition, the retaining wall proposed to be built south of Freedom Lane will help to separate the tracks from the adjoining structures, with the tracks placed 16 feet within the retaining walls. The adverse effect from the widening of the bridge approach can be further minimized by ensuring that the retaining wall is designed in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties, in order to ensure compatibility with the historic district. The Advisory Board has recommended that the bridge abutments, underpasses, and retaining walls have a consistent architectural design and appearance (see comments in Appendix F).

5.2.C. PHYSICAL TAKING OF PROPERTY WITHIN THE HISTORIC DISTRICT

As explained above, the change from two tracks to four tracks will result in widening of the NEC, some of which will require the taking of property outside of Amtrak's right-of-way. For Alternatives 9A and Alternative 9B, most of the required taking of property is south of North Adams Street and therefore outside of the boundaries of the historic district. Within the historic district, there are two areas of takings:

- Alternative 9A requires a taking of a small amount of property outside of Amtrak's right-of-way including a 0.1 acre tapered area between Adams Street and Stokes Street and a 0.05 acre area between Stokes Street and Freedom Alley. The affected property is undeveloped open space (see **Figure 47**, Photo 70). Due to the small size of the affected land as well as the undeveloped nature, the effect of this taking is minor and therefore not adverse.
- Both Alternatives require the taking of 0.01 acre from the Jean S. Roberts Memorial Park and .034 acre from the Broad and Otsego Streets public right-of-way on the west side of the bridge (see **Figure 47**, Photo 71). Due to the small size of the affected land, the effect of these takings is minor and therefore not adverse.

5.2.D. ALTERATIONS TO UNDERGRADE BRIDGES WITHIN THE HISTORIC DISTRICT

The four undergrade bridges that contribute to the historic significance of the Susquehanna River Rail Bridge and the Havre de Grace Historic District will need to be modified as part of the Project. FRA/MDOT evaluated that the Project will have an adverse effect on these four historic bridges due to the proposed extensions to the bridges, which will alter the bridges' design and materials. This adverse effect could be minimized or avoided by using stone in the construction of the new bridge extensions; however, FRA/MDOT have determined that using stone is not feasible as it would not meet current engineering design standards. Therefore, it is recommended that the adverse effect be minimized by using a form liner that emulates stone and is stained to be compatible with the color of the existing stone. In addition, to ensure that the new retaining walls in close proximity to the bridges do not adversely affect the historic resources, the design of the new walls should be in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*, so that the walls are compatible with the bridges' historic materials, features, size, scale and proportion, and massing.

Two of the undergrade bridges (at Freedom Lane and Centennial Lane) carry the NEC over alleys, which are described in the Havre de Grace Historic District NR nomination as important features within the historic district. Because the Project proposes to keep the alleys open for passage, the Project will not have an adverse effect on the alleys. Closing up either alley would constitute an additional adverse effect under Section 106.

5.2.E. DAMAGE TO HISTORIC BUILDINGS

Because the Project will come in close proximity to some of the contributing resources within the Havre de Grace Historic District, it has been assessed for its potential to cause short-term (construction period) and long-term (train operations) damage to adjacent structures. Of particular concern are the potential effects to 511 Warren Street on the east side of the tracks if Alternative 9A is selected, and the effects on the structures at 509, 513, 560, and 566 Otsego Street and 518 N. Stokes Street (see **Figure 48**, Photos 72-76), on the west side of the tracks related to either Alternative 9A or Alternative 9B.

To ensure that there is no construction-related damage, the MOA for the Project will include development of a Construction Protection Plan (CPP). The CPP, which will be prepared in consultation with the MHT, ACHP (as appropriate), consulting parties, and property owners, will identify all historic architectural resources to be included in the plan, and will set forth the specific measures to be used and specifications that will be applied to protect these architectural resources from damage during the construction period.

FRA/MDOT assessed the potential for the Project to cause long-term operational damage to adjacent structures and determined that the Project in its operational condition would not have the potential to result in vibration at a level that could cause damage to nearby historic structures. As described in Chapter 16, "Noise and Vibration," of the *Environmental Assessment*, vibration produced by the Project would not exceed the significant impact thresholds specified in the FTA guidance document's general assessment methodology. These impact thresholds are designed to avoid human annoyance and disruptions to human activity, and as such are substantially lower than those that could potentially result in building damage, even for historic structures. Because the impact thresholds are based on the more stringent criterion of human annoyance, damage to adjacent buildings is not specifically addressed in the FTA's general assessment methodology. However, since operational vibration resulting from the Project would not result in exceedances of the vibration impact criteria, it would not have the potential to result in vibration levels that could damage historic resources.

5.2.F. NEW COMMUNICATIONS, OVERHEAD CONTACT, AND SIGNAL SYSTEMS

The following components of the Project will have only limited visual effects on the Havre de Grace Historic District: the new communications, overhead contact, and signal systems. Therefore, because these components will not alter a characteristic that makes the Historic District eligible for inclusion in the NR, they will have no effect as defined in 36 CFR Part 800.16.

5.3. SOUTHERN TERMINUS, SUSQUEHANNA AND TIDEWATER CANAL - SOUTH LOCK #1 AND TOLL HOUSE

The Southern Terminus, Susquehanna and Tidewater Canal - South Lock #1 and Toll House (NR-listed) is located approximately one quarter-mile north of the Project site at Erie Street and east of Park Drive. The existing Susquehanna River Rail Bridge is distantly visible from this property (see **Figure 49**, Photo 77). The replacement of the historic bridge would not substantially change the setting of the canal structure nor would it diminish the integrity of its historic features.

Primarily due to distance, the Project would have no adverse effect on the Southern Terminus, Susquehanna and Tidewater Canal – South Lock #1 and Toll House.



Photo 70: View looking northeast at the vacant property adjacent to Warren Street between Freedom Alley and N. Stokes Street. A portion of this property would be taken for Alternatives 9A and 9B.



Photo 71: View looking northeast at the Jean S. Roberts Memorial Park where there will be a small taking of property.

Property Possibly Acquired	Susquehanna River Bridge Project Havre de Grace and Perryville, MD	Figure 47
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Photo 72: View looking northeast at 511 Warren Street.



Photo 73: View looking northeast at 509 Otsego Street.



Photo 74: View looking northeast 513 Otsego Street.



Photo 75: View looking east at 560 (left) and 566 (right) Otsego Street.



Photo 76: View looking southwest at 518 N. Stokes Street.

Structures Affected by the
Proposed Widening

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Figure 48



Photo 77: View looking south from the Southern Terminus, Susquehanna and Tidewater Canal - South Lock #1 and Toll House towards the Susquehanna River Rail Bridge in the distance.

View from the Southern Terminus, Susquehanna and Tidewater Canal-South Lock #1 and Toll House

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Figure 49

5.4. *MARTHA LEWIS* (SKIPJACK)

The Skipjack *Martha Lewis* (NR-listed), built in 1955 in Wingate, Maryland, is one of the 35 surviving traditional Chesapeake Bay skipjacks built specifically for the purposes of oyster harvesting. It was moved to Havre de Grace in 1993 and continues to carry passengers and dredge for oysters under sail power. It is permanently docked at Millard Tydings Memorial Park, located south of the APE in Havre de Grace; however, it is currently undergoing restoration at Frank J. Hutchins Memorial Park, located approximately one half mile south of the Project site within the APE. When operating, the vessel typically dredges for oysters south of its docking place in the Chesapeake Bay, but occasionally sails north up the Susquehanna River, navigating through the open swing span of the existing Susquehanna River Rail Bridge. Under both of the Project's under alternatives, the future vertical clearance of the proposed bridges would be 60 feet as compared to the 52-foot vertical clearance of the existing Susquehanna River Rail Bridge when in closed position; however, the proposed bridges would be fixed rather than moveable-span structures. The mast of the *Martha Lewis* is currently being replaced and it is anticipated that it will have a height of 65 feet when complete. Therefore, the Project will result in the *Martha Lewis* being unable to navigate the Susquehanna River north of the new bridges in the future. Although this could restrict the movement of the *Martha Lewis* to some extent, it would not prevent the vessel from accessing its traditional oyster dredging grounds in the Chesapeake Bay. Therefore, the Project alternatives would not isolate the resource from important aspects of its setting nor alter the characteristics of the resource that qualify it for inclusion on the NR. The removal of the existing Susquehanna River Rail Bridge and its replacement with new bridges would somewhat alter the temporary setting of the *Martha Lewis*. However, the *Martha Lewis* permanently docks south of the APE in a location relatively far removed from the existing and proposed bridges. The bridges would not be visible from the *Martha Lewis* in its permanent docking location in Millard Tydings Memorial Park. Furthermore, the Skipjack was originally constructed in Wingate, Maryland; therefore, the presence of the Susquehanna River Rail Bridge does not relate or contribute to its historic setting. Therefore, the Project would result in no adverse effect on the *Martha Lewis*. The owners of the *Martha Lewis* were invited to participate in the Section 106 process as consulting parties and have been invited to all public meetings.

5.5. RODGERS TAVERN

Rodgers Tavern (NR-listed) is located on the north side of West Main Street in Perryville, approximately 300 feet east of the Susquehanna River Rail Bridge. Under both Alternatives 9A and 9B, there would be no direct effect on the tavern; however, there would be a visual effect due to the need to expand and elevate the bridge approach in front of the tavern.

Across Broad Street from the tavern there is currently a 30-foot-high railroad embankment, catenary support structures and lines, and a transmission tower (see **Figure 50**, Photo 78). Both Alternatives 9A and 9B would require widening the bridge approach and bringing it approximately 44 feet closer to the tavern. As a result, the distance between the tavern and the tracks would be significantly reduced, from about 102 feet to 57 feet. The proposed difference in elevation would be minor; the current embankment is 30 feet high and the new embankment would be 33 feet high. However, there will be a visual effect due to the need to construct a retaining wall to run along the embankment.

The proposed changes in front of the tavern, especially the widening of the bridge approach that will bring the tracks closer to the tavern and the need to construct a retaining wall, will result in "the isolation of the property from or alteration of the character of the property's setting when that character contributes to the property's qualification for the National Register," thus constituting an adverse effect. In order to minimize the adverse effect, FRA/MDOT is working with MHT, Amtrak, and the other consulting parties to explore an aesthetic treatment that will allow the wall to better complement the historic tavern. Treatments under

consideration include use of a form liner so that the wall imitates the look of stone and better blends with the tavern's architecture (see **Figure 50**, Photo 79), use of landscaping to screen the wall if there is adequate space, and/or development of an appropriate mural. The Town of Perryville, a consulting party, has requested that "should the construction of a wall be necessary, that it be built out of architecturally pleasing materials and be painted with a mural." The treatment measure(s) agreed to by the consulting parties will be stipulated in the Project's MOA.

As described above in conjunction with the Havre de Grace Historic District, the Project will be assessed for potential construction-related damage to adjacent historic resources. To ensure that there is no damage to the Rodgers Tavern, the Project's Construction Protection Plan (CPP) will include measures to protect the Rodgers Tavern during the construction period.

FRA/MDOT determined that the Project in its operational condition would not have the potential to result in vibration at a level that could cause damage to nearby historic structures. As described in Chapter 16, "Noise and Vibration," of the Environmental Assessment vibration produced by the Project would not exceed the significant impact thresholds specified in the FTA guidance document's general assessment methodology. These impact thresholds are designed to avoid human annoyance and disruptions to human activity, and as such are substantially lower than those that could potentially result in building damage, even at historic structures. Because the impact thresholds are based on the more stringent criterion of human annoyance, damage to adjacent buildings is not specifically addressed in the FTA's general assessment methodology. However, since operational vibration resulting from the Project would not result in exceedances of the vibration impact criteria, it would not have the potential to result in vibration levels that could damage historic resources.

In terms of views from the tavern to the bridge, the view from the front of the structure is primarily blocked by vegetation (see **Figure 51** Photo 80). There is a much more extensive view from the walkway at the rear of the tavern (see **Figure 51** Photo 81). Similar to some of the views from the base of the bridge in Havre de Grace, the view consists mainly of a long linear view of the bridge, punctuated by the projecting central section of the bridge. As described in the Havre de Grace Historic District analysis, these features will be retained, with all of the bridge designs considered incorporating a traditional central span of either an arch or a truss.

The following components of the Project will have no direct physical effects and only limited visual effects on the Rodgers Tavern: the new communications, overhead contact, and signal systems; minor modifications to the Perry Electrical Substation; and the modification or relocation of the transmission tower just railroad north of the Tavern. Therefore, because these components will not alter a characteristic that makes the Rodgers Tavern eligible for inclusion in the NR, they will have no effect as defined in 36 CFR Part 800.16.

5.6. PRINCIPIO FURNACE (PRINCIPIO IRON WORKS)

The Principio Iron Works (NR-listed) is located at 1723 Principio Furnace Road. Although the buildings associated with the historic resource are located approximately one-half mile north of the Project site, the southwest corner of the property (containing only a wooded area) is located in the APE. The existing Susquehanna River Rail Bridge is not visible from this property. The replacement of the bridge would not change the setting of the structure nor would it diminish the integrity of its historic features. The existing bridge does not relate to or contribute to the characteristics that qualify the Principio Iron Works for inclusion in the NR. The Project would therefore have no adverse effects on this historic resource.



Photo 78: View looking west along Broad Street at the Rodgers Tavern.



Photo 79: Rendering showing the proposed retaining wall to be constructed in front of Rodgers Tavern, with a possible aesthetic design solution.

Front of Rodgers Tavern /
 Rendering of Proposed Retaining
 Wall in Front of Rodgers Tavern

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 Havre de Grace and Perryville, MD

Figure 50



Photo 80: View looking southwest towards the Susquehanna River Rail Bridge from in front of the Rodgers Tavern.



Photo 81: View looking west towards the Susquehanna River Rail Bridge from the walkway at the rear of the Rodgers Tavern.

Views from Rodgers Tavern

Susquehanna River Bridge Project
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Figure 51

5.7. PERRY POINT MANSION HOUSE AND MILL

The Perry Point Mansion House and Mill (NR-listed) is located south of the Perry Point Veterans Administration Medical Center on the Susquehanna River at the mouth of the Chesapeake Bay, approximately one-half mile south of the Project site (see **Figure 52**, Photo 82). The existing Susquehanna River Rail Bridge is distantly visible from this property. The replacement of the bridge would not substantially change the setting of the structure nor would it diminish the integrity of its historic features. The existing bridge does not relate to or contribute to the characteristics that qualify the Perry Point Mansion House and Mill for inclusion in the NR. The Project would have no adverse effect on this historic resource.

5.8. PERRYVILLE RAILROAD STATION

The Perryville Railroad Station (NR-eligible), 650 Broad Street, is within the Project site. In addition to the two-story brick Colonial Revival-style station building, two ancillary structures were identified as contributing resources to the historic Station complex: the Perry Interlocking Tower (a two-story circa 1905 brick control tower southwest of the of the station) and an ashlar stone-arch undergrade bridge (MP 59.39) constructed in the late nineteenth to early twentieth centuries under the platform for Amtrak vehicular use.

FRA/MDOT initially evaluated that the interlocking tower would need to be demolished to accommodate both Alternative 9A and Alternative 9B. The Town of Perryville, a consulting party, recommended that, if possible, the tower be left in place. Therefore, FRA/MDOT propose to shift the tower in order to avoid the adverse effect of demolishing it (see **Figure 53**, Photo 83). The change in location is minor and will not adversely affect the relationship between the interlocking tower and the Perryville Station, thus resulting in no adverse effect.

The undergrade bridge (MP 59.39) that is considered contributing to the NR-eligible station complex will be altered with the construction of a precast concrete culvert extension on the east side of the tracks. As previously discussed, this action will result in an adverse effect. The adverse effect could be minimized or avoided by using stone in the design of the new bridge extensions; however, FRA/MDOT have determined that using stone is not feasible as it would not meet current engineering design standards. Therefore, it is recommended that the adverse effect be minimized by using a form liner that emulates stone and is stained to match the color of the existing stone. In addition, to ensure that the new retaining walls in close proximity to the bridge and station do not adversely affect the historic resources, the design of the new walls should be in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*, so that the walls are compatible with the station's and bridge's historic materials, features, size, scale and proportion, and massing. The Susquehanna River Rail Bridge Project Advisory Board and the Town of Perryville have recommended that this underpass "should be abandoned by sealing it off from the north side. The south side may be left open for historical purposes, provided it is made secure from trespassers." The abandonment and sealing off of the underpass are not part of the Project and, if added, would constitute an adverse effect under Section 106.



Photo 82: View looking northwest towards the Susquehanna River Rail Bridge from a waterfront walking path near the Perry Point Mansion and Mill.

View from the Perry Point Mansion and Mill	Susquehanna River Bridge Project Havre de Grace and Perryville, MD	Figure 52
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The bridge carrying the south leg of the wye track over Broad Street (see **Figure 53**, Photo 84), although not formally identified as contributing to the Perryville Station complex, is within the viewshed of the station complex. Therefore, any change to that bridge would have a visual effect on the NR-eligible Perryville Station. As currently planned, this bridge will not need to be altered, therefore not constituting an effect. However, if the plans change and the bridge needs to be altered, Amtrak will ensure that plans are developed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*, so that the bridge continues to be compatible with the station complex's historic materials, features, size, scale and proportion, and massing.

The following components of the Project will have only limited visual effects on the NR-eligible station complex: the new communications, overhead contact, and signal systems; minor modifications to the Perry Electrical Substation; the modification or relocation of the transmission tower on the west side of the tracks; and modifications to Perry Interlocking at MP 59.4. Therefore, because these components will not alter a characteristic that makes the station complex eligible for inclusion in the NR, they will have no effect as defined in 36 CFR Part 800.16.

The station building itself would not be physically altered. However, the alteration and/or removal of contributing components of the complex would constitute an adverse effect on the Perryville Station.

5.9. PERRY POINT VETERANS ADMINISTRATION MEDICAL CENTER HISTORIC DISTRICT

The Veterans Administration Medical Center at Perry Point (NR-eligible) was developed primarily in the 1920s through the 1940s as a neuro-psychiatric treatment facility for military veterans. It is located approximately 400 feet south of the Project site. The existing Susquehanna River Rail Bridge, bridge abutments, and tracks are visible from portions of this large property (see **Figure 54**, Photos 85-86). Even in locations where the tracks pass the historic district, the distance to the historic buildings and the intervening landscaping minimize the view of the tracks. There is an open vista to the Perry Electrical Substation; however, minor modifications to the Substation will not constitute an effect on the NR-eligible Medical Center Historic District. In parts of the property closer to the bridge, there are close views of the abutments; in parts of the property further south and east, views of the bridge and abutments are distant.

Although the replacement of the Susquehanna River Rail Bridge with new bridges under both Project alternatives would somewhat alter the setting of the Perry Point Veterans Administration Center Historic District, this change would not constitute an adverse effect on the Historic District. The existing bridge does not relate to or contribute to the characteristics that qualify the Historic District for inclusion in the NR. The removal of the existing bridge and construction of two new bridges would not change the significant aspects of the setting of the Historic District nor would it diminish the integrity of its historic features. The Project would have no adverse effect on the Perry Point Veterans Administration Center Historic District.



Photo 83: View looking east at the Perry Interlocking Tower.



Photo 84: View looking west along Broad Street towards bridge carrying the south wye track over Broad Street.

Perryville Railroad Station
and Vicinity

Susquehanna River Bridge Project
Havre de Grace and Perryville, MD

Figure 53



Photo 85: View looking north towards the tracks from the Perry Point Veterans Administration Medical Center Historic District.



Photo 86: View looking northwest towards the Susquehanna River Rail Bridge and Susquehanna River from a walking path that follows the shoreline of the Perry Point Veterans Administration Medical Center property.

Views from the Perry Point Veterans Administration Medical Center Historic District

Susquehanna River Bridge Project
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Figure 54

5.10. CROTHERS HOUSE (FURNACE BAY GOLF CLUBHOUSE)

The Crothers House (NR-eligible) is a two-and-a-half story Colonial Revival residence built in 1936 and now used as the clubhouse for the Furnace Bay Golf Course. It is located approximately 1,000 feet north of the Project site. The existing Susquehanna River Rail Bridge is not visible from this property. The replacement of the bridge would not change the setting of the structure nor would it diminish the integrity of its historic features. The existing bridge does not relate to or contribute to the characteristics that qualify the Crothers House for inclusion in the NR. The Project would have no adverse effect on this historic resource.

5.11. WOODLANDS FARM HISTORIC DISTRICT

The Woodlands Farm Historic District (NR-eligible) is an extension of the boundary of the NR-listed Woodlands property north of Maryland Route 7 to include the Woodlands Farm South Complex. The NR-listed Woodlands property consists of a circa 1810-1820 main house and several outbuildings set on 69 acres. The Woodlands Farm South Complex is located to the south across Maryland Route 7 and consists of a 347-acre farm containing numerous 19th century buildings. The Susquehanna River Rail Bridge is not visible from this property. The replacement of the bridge would not change the setting of the Historic District nor would it diminish the integrity of its historic features. The existing bridge does not relate to or contribute to the characteristics that qualify the Woodlands Farm Historic District for inclusion in the NR. The Project would have no adverse effect on this resource.

5.12. PERRYVILLE UNITED METHODIST CHURCH

The Perryville United Methodist Church, constructed in 1896 in the Gothic Revival style, was identified as an NR-eligible resource as part of this Project. The property is located across Broad Street from the NEC (see **Figure 55**, Photo 87) in Perryville. From the church, the rail line can only be partially seen; the bridge cannot be seen at all. Due to the distance and the limited view, the Project would have no adverse effect on this resource.

5.13. PERRYVILLE PRESBYTERIAN CHURCH

The Perryville Presbyterian Church, constructed in 1892 in the Gothic Revival style, was identified as an NR-eligible resource as part of this Project. The property is located on the track side of Broad Street, but is screened from the tracks by extensive landscaping. Neither the rail line nor the bridge can be seen at all (see **Figure 55**, Photo 88). Due to the distance and the obstructed views, the Project would have no adverse effect on this resource.



Photo 87: View looking southeast towards the NEC from the Perryville United Methodist Church.



Photo 88: View looking southeast towards the NEC from the Perryville Presbyterian Church.

Views from the
Historic Churches

Susquehanna River Bridge Project
Havre de Grace and Perryville, MD

Figure 55

6. SUMMARY AND RECOMMENDATIONS

This report assessed the Project's effects on historic architectural resources in accordance with Section 106 of the NHPA, as amended, and determined that Alternative 9A and Alternative 9B of the Project would not adversely affect the following significant historic architectural resources: Southern Terminus, Susquehanna and Tidewater Canal – South Lock #1 and Toll House, Martha Lewis (Skipjack), Principio Furnace (Principio Iron Works), Perry Point Mansion House and Mill, Perry Point Veterans Administration Medical Center Historic District, Crothers House (Furnace Bay Golf Clubhouse), Woodlands Farm Historic District, Perryville United Methodist Church, Perryville Presbyterian Church; and the Lily Run Undergrade Bridge (MP 60.85). There would be, however, an adverse effect on the following significant historic architectural resources: the Susquehanna River Rail Bridge (including 8 of the 9 related undergrade rail bridges), the Havre de Grace Historic District, the Rodgers Tavern, and the Perryville Railroad Station (see **Table 4**).

Table 4
Adverse Effects on Historic Architectural Resources

Known Architectural Resources in the APE	Adverse Effect?	Action	Actions Under Consideration to avoid or minimize adverse effects
Susquehanna River Rail Bridge	Yes	Demolition	Avoidance of demolition not feasible
			Minimize through use of traditional design features in the two new bridges
9 overpass rail bridges	Yes (all except MP 60.85)	Bridge replacement or concrete extensions	Avoidance of replacing or extending bridges not feasible
			Minimize or avoid through use of stone not feasible
			Minimize by using a form liner that emulates stone and is stained to be compatible with the color of the existing stone
	Possible	Construction of adjacent retaining walls	Avoid additional adverse effect by ensuring design of the new walls is in accordance with the <i>Secretary of the Interior's Standards for the Treatment of Historic Properties</i>
Havre de Grace Historic District	Yes	Demolition of Susquehanna River Rail Bridge, a contributing feature to the historic district	Avoidance of demolition not feasible (see above for steps to partially mitigate)
	Yes	Visual adverse effects from widening of bridge approaches	Minimize visual adverse effects by locating bridge abutment further south, constructing retaining walls, and ensuring retaining walls are developed in accordance with the <i>Secretary of the Interior's Standards for the Treatment of Historic Properties</i>

Table 4 (cont'd)
Adverse Effects on Historic Architectural Resources

Known Architectural Resources in the APE	Adverse Effect?	Action	Actions Under Consideration to avoid or minimize adverse effects
Havre de Grace Historic District (continued)	Yes	Extensions to four undergrade bridges, contributing features to the historic district	Avoidance of replacing or extending bridges not feasible
			Minimize or avoid through use of stone not feasible
			Minimize by using a form liner that emulates stone and is stained to be compatible with the color of the existing stone
	Possible	Construction of retaining walls adjacent to the four undergrade bridges	Avoid additional adverse effect by ensuring design of the new walls is in accordance with the <i>Secretary of the Interior's Standards for the Treatment of Historic Properties</i>
Possible	Construction-related damage to contributing structures	Avoid adverse effect through development and implementation of a Construction Protection Plan (CPP)	
Rodgers Tavern	Yes	Visual adverse effect from the widening of the bridge approach	Minimize visual adverse effect through development of an aesthetic treatment for the retaining wall and landscaping in front of wall, if possible
	Possible	Construction-related damage	Avoid adverse effect through development and implementation of a Construction Protection Plan (CPP)
Perryville Railroad Station	Possible	Demolition of Perry Interlocking Tower	Avoid adverse effect by shifting the Interlocking Tower slightly within Amtrak ROW
	Yes	Extension to undergrade bridge at MP 59.39, a contributing feature to the station complex	Minimize or avoid through use of stone not feasible
			Minimize by using a form liner that emulates stone and is stained to be compatible with the color of the existing stone
Yes	Construction of retaining walls adjacent to station complex	Avoid additional adverse effect by ensuring design of the new walls should be in accordance with the <i>Secretary of the Interior's Standards for the Treatment of Historic Properties</i>	

Because certain adverse effects cannot be totally avoided, FRA/MDOT has sought suggestions from the consulting parties and the public on potential ways to mitigate the adverse effects. As part of that process, the City of Havre de Grace Advisory Board has suggested several ideas for historic mitigation (see the Board's Advisory Bulletin #15, dated March 18, 2015 in Appendix F). Based on a review of the Project plans and comments received from the public and the Section 106 consulting parties, FRA/MDOT propose the following mitigation measures:

- Continued review by MHT of design plans to ensure that to the extent possible the plans are compatible with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. Of particular

concern is the design of the new bridge, the alterations to eight of nine undergrade bridges associated with the Susquehanna River Rail Bridge, and the new retaining walls.

- Preparation of Historic American Engineering Record (HAER) documentation of the Susquehanna River Rail Bridge and the nine associated undergrade bridges on the NEC.
 - HAER documentation would include narratives that (1) interpret its history, focusing on its construction by the Pennsylvania Railroad; and (2) describe in detail the physical characteristics of the bridge (including its engineering and functional aspects). Primary and secondary resources would be used in the research effort, including historic engineering literature, railroad company archives, newspapers and periodicals, and the collections of libraries, historical societies, and other repositories. The compiled information, which could include historic plans, photographs, and other documents, will be duplicated to appropriate archival standards as part of the recordation document.
 - The HAER recordation would also include photographic documentation of the Susquehanna River Rail Bridge that would meet appropriate HAER archival standards.
 - In addition, it may be appropriate to produce detailed measured drawings of the existing conditions of Susquehanna River Rail Bridge. Typically, detailed measured drawings of large engineered structures such as the Susquehanna River Rail Bridge are achieved through the use of three-dimensional laser scanning technology.
- Preparation of HAER documentation of the Perry Interlocking Tower, including any interior features.
- Development of an interpretive exhibit in a park, greenway, or public space that would present the history of the Susquehanna River Rail Bridge with a focus on the history of the bridge as an early twentieth century product of the Pennsylvania Railroad and the engineering aspects of the bridge, such as its swing span mechanism. To the extent possible and practical, key features of the 1906 Pennsylvania Railroad bridge should be incorporated into the display, with the overall goal of conveying the advancement of this type of bridge engineering by the beginning of the twentieth century and to explain how certain rail ridge components functioned in that era. The location, format, and specific content of the exhibit would be identified by the Project sponsor in consultation with MHT and consulting parties.
- Development of an educational document such as a lesson plan that could be incorporated into an engineering course curriculum. This lesson plan could focus on the specific engineering aspects of the Susquehanna River Rail Bridge and/or movable bridge types constructed in the early twentieth century by the Pennsylvania Railroad. In addition, it should utilize research knowledge obtained from the archaeological investigations and incorporate the history of all of the area's transportation related historic resources, including the Susquehanna River Rail Bridge and the affiliated nine undergrade bridges; the piers from the 1866 railroad bridge; the eighteenth century ferry crossing; the Southern Terminus, Susquehanna and Tidewater Canal - South Lock #1 and Toll House; the Havre de Grace Historic District; Rodgers Tavern; and Perryville Railroad Station.
- Production of a short film that documents the character-defining historical and engineering aspects of the Susquehanna River Rail Bridge. The film could include footage of the bridge in operation and address the engineering and design of the swing-span bridge, and its historical context as a twentieth century Pennsylvania Railroad bridge. The film could be made available online and/or be provided to railroad organizations and local libraries and historical societies.
- Salvage of elements of the Susquehanna River Rail Bridge, such as truss components, pier materials, tracks, etc. The Project sponsor would develop a list of potentially salvageable items for review and

Susquehanna River Rail Bridge Project

comment by MHT. The Project sponsor would also develop a marketing plan for review by MHT and consulting parties.

- Completion of all archaeological investigations as recommended in the Phase IA Archaeological Assessment.
- Preservation of the abutments from the original (1866) bridge, with consideration given to restoring them to their original appearance and function.
- Development of an interpretative exhibit to be incorporated into the town of Perryville's Railroad Museum located at the Perryville Station.
- Development of a Construction Protection Plan (CPP) to set forth the specific measures to protect from construction-related damage any historic structures in close proximity to the Project. The CPP, which will be prepared in consultation with the MHT, ACHP (as appropriate), consulting parties, and the property owners, will identify all architectural resources to be included in the plan.

7. REFERENCES

- AKRF, Inc.
2014-2015 Historic architectural sites survey documentation submitted to the Maryland Historical Trust for project initiation, reconnaissance level survey, and Determination of Eligibility Report for the Susquehanna River Rail Bridge Project.
- Bates, B.
2006 *Havre de Grace*. Arcadia Publishing, Charleston, South Carolina.
- Bilicki, S.R.
2003 *Phase I Underwater Survey on the Susquehanna River in Cecil and Harford Counties, Maryland*. Report on file at the Maryland Historical Trust, Crownsville, MD.
- Catts, W. P., J. F. Custer, and A. Hawley
1994 *A Cultural Resources Reconnaissance Planning Study of the Proposed Beach Access Corridors, Sussex County, Delaware*. Delaware Department of Transportation Archeology Series No. 94. Dover, Delaware.
- Fiedel, S. J.
1999 *US 50 from MD 18 to MD 404, Queen Anne's County, Maryland*. Manuscript on file at the Maryland Historical Trust. Crownsville, Maryland.
- Gerstell, R.
1998 *American Shad in the Susquehanna River Basin: A Three-hundred Year History*. The Pennsylvania State University Press. University Park, Pennsylvania.
- Kingsley, R. G., T. L. Benedict, and G. Katz
2006 *Phase I Archeological Identification Survey: US 301 at MD 304 Intersection Improvements, Queen Anne's County, Maryland*. Manuscript on file at the Maryland Historical Trust. Crownsville, Maryland.
- Low, Paula, Wayne L. Nield II, and Darlene Shultz
1980 *Havre de Grace Historic District National Register of Historic Places Inventory Nomination Form*.
- McCormick Taylor
August 2014 *Phase IA Archaeological Assessment for the Susquehanna River Rail Bridge Project, Harford and Cecil Counties, Maryland*. Prepared by McCormick Taylor for AKRF, Inc.
- Millis, H and R.D. Wall
2006 *Phase I Archeological Survey for Proposed Improvements to the Intersection of US 301 and MD 304, Queen Anne's County, Maryland*. Manuscript on file at the Maryland Historical Trust. Crownsville, Maryland.
- Noll, L.
2011 *Havre de Grace*. Arcadia Publishing. Charleston, South Carolina.

Susquehanna River Rail Bridge Project

- Preston, D. J.
1983 *Talbot County: a History*. Tidewater Publishers. Centreville, Maryland. Sanborn fire insurance maps of Havre de Grace, Maryland, 1885, 1894, 1899, 1904, 1910, 1921, 1923, 1930, 1943, and 1962.
- Still, W.
1872 *The Underground Railroad: A Record of Facts, Authentic Narratives, Letters, &c.* Porter and Coates. Philadelphia, Pennsylvania.
- Virta, A.
1998 *Prince George's County, A Pictorial History*. The Donning Company. Virginia Beach, Virginia.
- Weeks, C.
1996 *An Architectural History of Harford County, Maryland*. The Johns Hopkins University Press. Baltimore, Maryland.
- Weslager, C. A.
1983 *The Nanticoke Indians: Past and Present*. University of Delaware Press, Newark, Delaware.

7.1. INTERNET RESOURCES

www.roads.maryland.gov/OPPEN/II-E_RDS.pdf

Appendix A
Resume of Principal Investigator



ARCH², Inc. - Cultural Resources Consultants
Archaeology and Architectural History

Nancy L. Zerbe, President

Ms. Nancy L. Zerbe has thirty-six years of experience in historic preservation, including 8 years as the Governor-designated New Jersey Deputy State Historic Preservation Officer and Administrator of the New Jersey Historic Preservation Office (NJ HPO). Ms. Zerbe previously served for five years as a NJ HPO technical reviewer and National Register Supervisor and has worked as an architectural historian for two private firms. Ms. Zerbe's experience in historic preservation covers all aspects from environmental reviews to preservation planning.

**ARCH², Inc., Metuchen, NJ
January 1995 – Present (President)**

Provides project management and architectural history services for the firm's cultural resources projects, including historic preservation planning, historic sites management, historic designations and recordations, and regulatory reviews in accordance with federal, state, and municipal laws.

Planning

Ms. Zerbe drafted the *New Jersey Certified Local Government Guidelines*; edited *Preservation New Jersey's Handbook for Local Preservation Planning*; and has authored multiple National Register nominations, HABS/HAER reports, and public education documents.

Regulatory

Ms. Zerbe has successfully coordinated historic preservation regulatory reviews for a full range of public and private agencies, ensuring that projects are designed to minimize adverse effects and that projects are approved in accordance with federal, state, and municipal regulations.

**Edison Memorial Tower Corporation, Edison, NJ
December 2006 – July 2012 (President/CEO)**

Administered the non-profit organization responsible for the Menlo Park museum and historic site. Successfully led the non-profit in a \$3 million capital campaign for the restoration of the Edison Tower; oversaw museum renovations and development of new interpretive exhibits; organized public outreach activities; and strengthened board development efforts.

**New Jersey Historic Preservation Office, Trenton, NJ
October 1986 - April 1994 (Administrator)
December 1980 - January 1986 (Technical
Reviewer/National Register Supervisor)**

As Administrator of the NJ HPO, Ms. Zerbe was responsible for the operations of ten state and federal historic preservation programs, twenty staff, and a \$1 million annual budget. Prior to becoming Administrator, Ms. Zerbe served as a technical reviewer, evaluating public projects submitted to the NJ HPO, and supervised all National Register nominations and Certified Local Government grants.

PROFESSIONAL AFFILIATIONS

- Metuchen Historic Preservation Committee – Mayoral Appointee 2008-; Chair 2016-
- Metuchen Main Street New Jersey Stakeholders Committee – Mayoral Appointee 2015-
- Woodwild Park Association – Fundraising Chair 2015-
- Association of Fundraising Professionals 2015-
- Middlesex County Cultural and Heritage Commission (Vice-Chairman) – Freeholders Appointee 2013-2016
- New Jersey Heritage Tourism Task Force – Governor Appointee 2007-2010
- Edison Memorial Tower Corporation – Chair 2006-2007; President 2007-2012
- Metuchen-Edison Historical Society – President 2003-06
- Peer Review Committee for NJ Architectural Survey Guidelines – member 1997
- Preservation NJ – Board member 1995-97
- Proprietary House Association – Trustee 1995-97
- NJ Old House Resource Fair – Chairperson 1996-97
- National Conference of State Historic Preservation Officers – Board member 1991-94
- New Jersey Historical Commission – ex-officio member 1986-94

EDUCATION

- M.S. - Historic Preservation, Columbia University, 1980
- B.A. - History, University of Delaware, 1976

Appendix B
List of Consulting Parties

**SUSQUEHANNA RIVER RAIL BRIDGE PROJECT
SECTION 106 CONSULTING PARTIES**

Accohannock Indian Tribe, Inc.	Perry Point VA Medical Center
Advisory Council on Historic Preservation	Piscataway Conoy Confederacy and Sub-Tribes, Inc.
Assateague Peoples Tribe	Piscataway Indian Nation
Cecil County Government*	Pocomoke Indian Tribe, Inc.
Chesapeake Heritage Conservancy, Inc.	Post 47/American Legion
City of Havre De Grace*	Preservation Maryland
Friends of Concord Point Lighthouse, Inc.*	Principio Furnace Foundation, Inc.
Harford County Government*	Susquehanna Museum of Havre De Grace at the Lock House
Havre De Grace Decoy Museum*	Susquehanna State Park
Havre De Grace Maritime Museum	Town of Perryville*
The Historical Society of Cecil County	Youghiogheny River Band of Shawnee Indians, Inc.
The Historical Society of Harford County, Inc.	Washington-Rochambeau Revolutionary Route-National Historic Trail Office
Lower Susquehanna Heritage Greenway*	Federally-Recognized Indian Tribes, if applicable
Maryland Commission on Indian Affairs	
Maryland Historical Society	
Maryland Historical Trust*	
National Park Service, Chesapeake Bay Office*	
National Railway Historical Society, Perryville Chapter*	
Nause-Waiwash Band of Indians, Inc.	

***ACCEPTED INVITATION TO SERVE AS A CONSULTING PARTY**

Appendix C

June 16, 2014 Section 106 Consultation Letter from Beth Cole, Maryland
Historical Trust, to David Valenstein, Federal Railroad Administration



Sustainable — Attainable

Maryland Department of Planning
Maryland Historical Trust

June 16, 2014

David Valenstein
Division Chief, Environmental and Systems Planning
Federal Railroad Administration
1200 New Jersey Avenue, SE
Washington, DC 20590

Re: Susquehanna River Rail Bridge Project
Cecil and Harford Counties, Maryland
Initiation of Section 106 Consultation

Dear Mr. Valenstein:

Thank you for your recent letter, received by the Maryland Historical Trust (Trust) on April 14, 2014, regarding the above-referenced project. Your submittal formally initiated consultation with the Trust, Maryland's State Historic Preservation Office, pursuant to Section 106 of the National Historic Preservation Act, for this federally assisted undertaking. Based on our review of the submitted materials, we offer the following comments and concurrence.

Project Description: The Federal Railroad Administration (FRA) and Maryland Department of Transportation (MDOT) are proposing to improve the existing Susquehanna River Rail Bridge between Havre de Grace in Harford County and Perryville in Cecil County. The bridge is the longest bridge with a moveable span on the Northeast Corridor. Constructed in 1906, the Amtrak Bridge over the Susquehanna River (MIHP No. 1712) was determined eligible for listing in the National Register of Historic Places in 1998. A range of alternatives are under consideration by FRA, including replacement, rehabilitation and the addition of a new parallel structure to increase capacity of the river crossing to four tracks. The Trust has been invited to comment and concur with the project's Purpose and Need Statement. We are ~~including our concurrence as an attachment to this letter.~~

Area of Potential Effects: The Trust concurs with FRA/MDOT's defined Area of Potential Effects (APE) for historic architectural and archeological resources, illustrated in Figure 2 of FRA's submittal. We recognize that FRA/MDOT may make further refinements to its APEs as planning proceeds based on alignment changes, the addition of ancillary actions, or other modifications.

Identification and Evaluation of Historic Properties: We concur with the overall approach for conducting and completing the cultural resources investigations, as outlined in your submittal. We encourage frequent coordination with our office to ensure that the investigations are commensurate with the scale of the undertaking and consistent with our standards and guidelines. As you are aware, considerable information already exists regarding identified historic and archeological resources in the project vicinity, as a result of multiple prior investigations for various projects. The Phase IA archival investigations should also address the APE's potential for containing submerged cultural resources and provide relevant recommendations, if warranted. Please feel free to consult with the Trust prior to the initiation of any detailed investigations to ensure a reasonable and appropriate level of effort is performed for the project. We look forward to receiving the results of the architectural resources survey and a copy of the draft Phase IA report for review and comment, when available.

Martin O'Malley, Governor
Anthony G. Brown, Lt. Governor

Richard Eberhart Hall, AICP, Secretary
Amanda Stakem Conn, Esq., Deputy Secretary

David Valenstein
Susquehanna River Bridge Project
Initiation of Section 106 Consultation
June 16, 2014
Page 2 of 2

Consulting Parties: We agree with the list of potential consulting parties for this undertaking as presented in FRA's submittal. We also suggest that FRA include the Perry Point VA Medical Center and the Maryland Commission on Indian Affairs as potential consulting parties. As the Section 106 coordination and public outreach efforts progress, additional relevant parties may be identified and invited to participate in the consultation.

We look forward to ongoing consultation with FRA, MDOT, and other involved parties to successfully complete the Section 106 consultation for this undertaking as project planning proceeds. If you have questions or need further assistance, please contact Tim Tamburrino (for historic structures) at tim.tamburrino@maryland.gov / 410-514-7637 or me (for archeology) at beth.cole@maryland.gov / 410-514-7631. Thank you for providing us this opportunity to comment.

Sincerely,



Beth Cole
Administrator, Project Review and Compliance

BC/TJT/201401913

Attachment: Purpose and Need Concurrence Sheet
cc: Michelle Fishburne (FRA)
Angela Willis (MTA)

RECEIVED
APR 18 2014

BY: _____

PURPOSE AND NEED

Project Name & Limits: Susquehanna River Rail Bridge Project (MP 57.3 to MP 63.5)		
Having reviewed the attached Purpose and Need concurrence/comment package and the summary presented above, the following agency (by signing this document):		
<input type="checkbox"/> Corps of Engineers	<input type="checkbox"/> Coast Guard	<input type="checkbox"/> Federal Transit Administration
<input type="checkbox"/> Concur (without comments)	<input type="checkbox"/> Concur (w/ <u>minor</u> comments)	<input type="checkbox"/> Does Not Concur
Comments / Reasons for Non-Concurrence:		
<i>Note: Please do <u>not</u> provide "conditional" concurrence. You should either concur with the information as provided (without comments or with <u>minor</u> comments) or not concur until revisions are made or additional information is provided.</i>		
<input type="checkbox"/> Environmental Protection Agency	<input type="checkbox"/> MD Dept. of Natural Resources	<input checked="" type="checkbox"/> MD Historical Trust
<input type="checkbox"/> Fish and Wildlife Service	<input type="checkbox"/> MD Dept. of the Environment	<input type="checkbox"/> Metropolitan Planning Org.
<input type="checkbox"/> National Marine Fisheries Service	<input type="checkbox"/> MD Department of Planning	
<input type="checkbox"/> Provides Comments (below or attached)	<input checked="" type="checkbox"/> Has No Comments	
Comments:		
Additional Information Needed:		
Signature: <u>Beth Cole</u>	Date: <u>4/16/2014</u>	

Appendix D

November 12, 2014 Section 106 Consultation Letter from Tim Tamburrino,
Maryland Historical Trust, to Angela Willis, Maryland Transit Administration



Maryland Department of Planning
Maryland Historical Trust

Sustainable Attainable

November 12, 2014

Angela Willis
Maryland Transit Administration
6 Saint Paul Street
Baltimore, MD 21202-1614

Re: Susquehanna River Rail Bridge Project
Cecil and Harford Counties, Maryland

Dear Ms. Willis:

Thank you for your recent letter regarding the above-referenced project. Your submittal requests the Maryland Historical Trust's (Trust's) input on potential historic properties within the undertaking's area of potential effects (APE) and also seeks guidance on the development of a survey methodology. We offer the following comments and suggestions in accordance with Section 106 of the National Historic Preservation Act, as amended.

As noted in our previous correspondence, the Federal Railroad Administration (FRA) and Maryland Department of Transportation (MDOT) are proposing to improve the existing Susquehanna River Rail Bridge between Havre de Grace in Harford County and Perryville in Cecil County. The project team has conducted a reconnaissance survey of the undertaking's APE and identified existing and potential historic resources associated with the built environment in the Perryville area. The Trust conducted a site visit on October 21, 2014 to examine these potentially National Register-eligible resources. Based on our site visit, we agree that the Perryville Methodist Church and the Perryville Presbyterian Church may be eligible for listing in the National Register.

We recommend the preparation of the following survey documentation to evaluate potential historic properties in the Perryville area. Please prepare a Determination of Eligibility (DOE) form for the following properties:

1. Western portion of the Town of Perryville, as illustrated on the attached map. Based on a brief visual examination, we do not believe that this area possesses sufficient material integrity for listing in the National Register. Background research may reveal other important areas of significance. The preparation of a DOE form is the most efficient method for evaluating this large area.
2. Perryville Methodist Church, 374 Broad Street; and
3. Perryville Presbyterian Church, 710 Broad Street.

Considerable information already exists regarding identified historic and archeological resources in the project vicinity, as a result of multiple prior investigations for various projects. However, there remain sections of the APE that have not been previously studied. For those areas outside of existing historic districts (and the survey district identified above), the project team must survey and evaluate the remaining properties that are fifty years old or older within the undertaking's APE. The Short Form for Ineligible Properties (Short Form) may be utilized to document any property that is *clearly* ineligible due to major loss of historic integrity or due to an obvious lack of architectural significance. Buildings that possess some level of architectural significance and integrity and which may represent a significant trend or contextual theme should be documented on a DOE form.

Martin O Malley Governor
Anthony G. Brown, Lt. Governor

Richard Eberhart Hall, AICP Secretary
Amanda Stakem Conn, Esq., Deputy Secretary

Ms. Angela Willis
Susquehanna River Bridge Project
Page 2 of 2

We look forward to receiving the results of the historic structures investigations for our review and comment, when available. If you have questions or need further assistance, please contact Tim Tamburrino (for historic structures) at tim.tamburrino@maryland.gov / 410-514-7637 or me (for archeology) at beth.cole@maryland.gov / 410-514-7631. Thank you for providing us this opportunity to comment.

Sincerely,



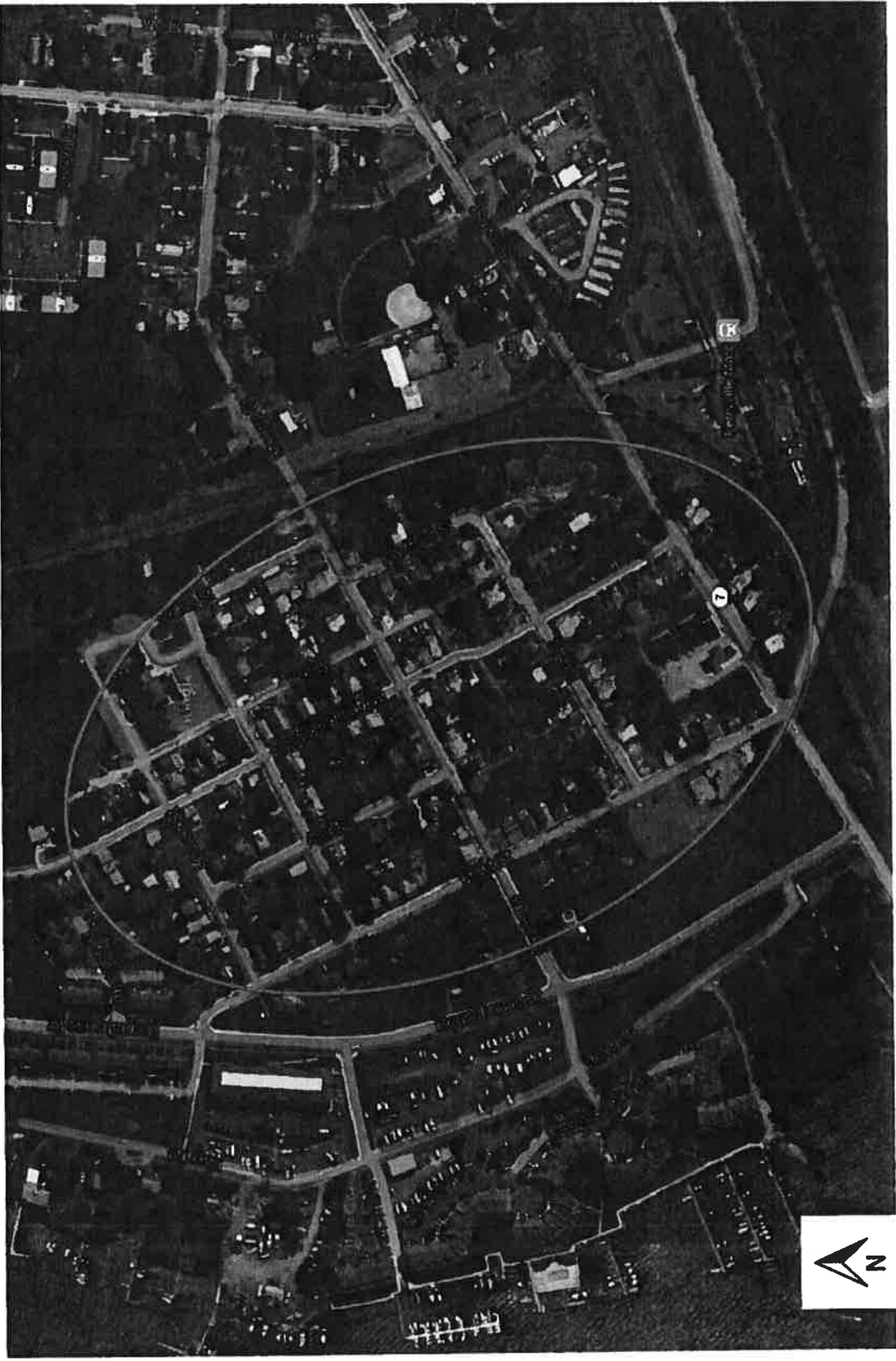
Tim Tamburrino
Preservation Officer

TJT/201405073

Attachment: Map of the Perryville Survey District
cc: Michelle Fishburne (FRA)

ATTACHMENT 1

Recommended Perryville (Western Section) Survey District



Appendix E

April 22, 2015 Section 106 Consultation Letter from Elizabeth Hughes, Maryland
Historical Trust, to Angela Willis, Maryland Transit Administration



Larry Hogan, Governor
Boyd Rutherford Lt. Governor

David R. Craig, Secretary
Wend W. Peters, Deputy Secretary

Maryland Department of Planning
Maryland Historical Trust

April 22, 2015

Angela Willis
Maryland Transit Administration
6 Saint Paul Street
Baltimore, MD 21202-6806

Re: Susquehanna River Rail Bridge Project
Historic Structures Investigations – Determination of Eligibility Forms
Harford and Cecil Counties, Maryland

Dear Ms. Willis:

Thank you for providing the Maryland Historical Trust (Trust) with Determination of Eligibility (DOE) Forms produced for the above-referenced undertaking. The Trust has reviewed the materials as part of our ongoing consultation for this undertaking, pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended. We offer the following comments and recommendations regarding the historic structures investigations.

Trust staff reviewed the Determination of Eligibility (DOE) Forms prepared by AKRF, Inc. on behalf of the Maryland Transit Administration (MTA). MTA's submittal comprised 76 DOE forms; including 71 resources documented using the 'DOE Short Form for Ineligible Resources'. Our comments regarding the eligibility of historic properties for listing in the National Register of Historic Places (National Register) are provided below.

The following properties are **eligible** for listing in the National Register:

- Susquehanna River Rail Bridge & Bridge Overpasses (MIHP No. HA-1712)
- Perryville United Methodist Church (MIHP No. CE-1573)
- Perryville Presbyterian Church (MIHP No. CE-1574)

The following properties are **not eligible** for listing in the National Register:

- Perryville Historic District (MIHP No. CE-1572)
- 400-413 Webb Lane, Havre de Grace (MIHP No. HA-2250)
- We concur that all 71 resources documented with the 'Short Form for Ineligible Properties' are not eligible for listing in the National Register.

We look forward to continuing consultation with MTA, the Federal Railroad Administration and the other involved parties to successfully complete the Section 106 review of the Susquehanna River Rail Bridge project as planning progresses. If you have questions or require additional information, please contact Beth Cole (for archeology) at beth.cole@maryland.gov / 410-514-7631 or Tim Tamburrino (for historic built environment) at tim.tamburrino@maryland.gov / 410-514-7637.

Sincerely,

Elizabeth Hughes
Acting Director/State Historic Preservation Officer

EH/TJT 201500546

cc: Michelle Fishburne (FRA)
Jacqueline Thorne (MDOT)
Craig Rolwood (Amtrak)
Bradley F. Killian (Harford County)
Anthony DiGiacomo (Cecil County)
Dianne Klair (Havre de Grace)
Bethany Baker (Concord Point Lighthouse)
Norris C. Howard Sr. (Pocomoke Indian Nation)
Leslie Mesnick (AKRF)

Appendix F

Comments Relating to Historic Resources from Consulting Parties and the Public

RESOLUTION NO. 2015-02

A RESOLUTION OF THE MAYOR AND COMMISSIONERS OF THE TOWN OF PERRYVILLE AUTHORIZING THE MAYOR TO PURSUE CERTAIN RECOMMENDATIONS OF THE SUSQUEHANNA RIVER RAIL BRIDGE PROJECT ADVISORY BOARD.

WHEREAS, the Mayor and City Council of Havre de Grace on September 15, 2014, created the Susquehanna River Rail Bridge Project Advisory Board by Resolution 2014-07 (“Board”); and

WHEREAS, Commissioner Raymond A. Ryan, III, was appointed as the Town of Perryville representative to the Board created by the City of Havre de Grace; and

WHEREAS, the Board has created a number of advisory bulletins that the City of Havre de Grace has, by Resolution, authorized the Mayor of Havre de Grace to pursue; and

WHEREAS, the Board has created Advisory Bulletins Nos. 7 and 9 with specific recommendations directed to the Mayor and Commissioners of Perryville; and

WHEREAS, Advisory Bulletins Nos. 7 and 9 are attached to this Resolution and marked Exhibit A; and

WHEREAS, the Mayor and Commissioners of Perryville have determined that Advisory Bulletins Nos. 7 and 9 should be made available to the public for review and comment; and

WHEREAS, the Mayor and Commissioners of Perryville have determined that it is in the best interest of the Town that the Mayor be authorized to pursue the recommendations that appear in the Advisory Bulletins attached to this Resolution.

NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND COMMISSIONERS OF PERRYVILLE as follows:

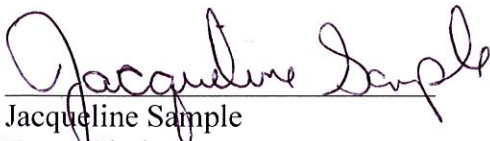
- A. The Board’s Advisory Bulletins applicable to the Town of Perryville shall be made available on the Town’s website for public review and comment. They are:
 1. Advisory Bulletin No. 7, November 28, 2014, “Bridge Architecture.”
 2. Advisory Bulletin No. 9, December 9, 2014, “River Navigation.”

- B. The Mayor and Commissioners endorse and support in concept the Recommendations set forth in Advisory Bulletin No. 7 and Advisory Bulletin No. 9.
- C. The Mayor is authorized to work collaboratively with the City of Havre de Grace to pursue the recommendations that appear in the Advisory Bulletins with Amtrak, the Maryland Department of Transportation and other affected parties.
- D. The Town Administrator shall send copies of this Resolution to the Mayor and City Council of Havre de Grace, the Maryland Department of Transportation and Amtrak.

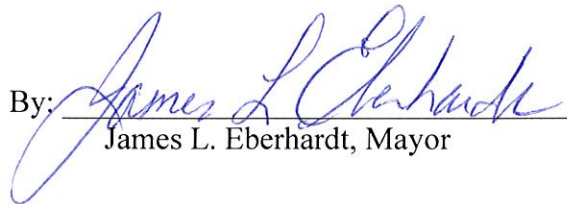
READ AND PASSED THIS 6TH day of January, 2015.

ATTEST:

MAYOR AND COMMISSIONERS OF
THE TOWN OF PERRYVILLE



Jacqueline Sample
Town Clerk

By: 

James L. Eberhardt, Mayor

RESOLUTION NO. 2015-09

A RESOLUTION OF THE MAYOR AND COMMISSIONERS OF THE TOWN OF PERRYVILLE AUTHORIZING THE MAYOR TO PURSUE CERTAIN RECOMMENDATIONS OF THE SUSQUEHANNA RIVER RAIL BRIDGE PROJECT ADVISORY BOARD.

WHEREAS, the Mayor and City Council of Havre de Grace on September 15, 2014, created the Susquehanna River Rail Bridge Project Advisory Board by Resolution 2014-07 (“Board”); and

WHEREAS, Commissioner Raymond A. Ryan, III, was appointed as the Town of Perryville representative to the Board created by the City of Havre de Grace; and

WHEREAS, the Board has created a number of advisory bulletins that the City of Havre de Grace has, by Resolution, authorized the Mayor of Havre de Grace to pursue; and

WHEREAS, the Board has created Advisory Bulletins Nos. 17, 18 and 19 with specific recommendations directed to the Mayor and Commissioners of Perryville; and

WHEREAS, Advisory Bulletins Nos. 17 and 18, and 19 are attached to this Resolution and marked Exhibit A; and

WHEREAS, the Mayor and Commissioners of Perryville have determined that Advisory Bulletins Nos. 17, 18 and 19 should be made available to the public for review and comment; and

WHEREAS, the Mayor and Commissioners of Perryville have determined that it is in the best interest of the Town that the Mayor be authorized to pursue the recommendations that appear in the Advisory Bulletins attached to this Resolution.

NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND COMMISSIONERS OF PERRYVILLE as follows:

- A. The Board’s Advisory Bulletins applicable to the Town of Perryville shall be made available on the Town’s website for public review and comment. They are:
 1. Advisory Bulletin No. 17, March 20, 2015 “Easterly Right-of-Way and Alignments in Perryville.”
 2. Advisory Bulletin No. 18, March 20, 2015, “Street Underpasses in Perryville.”

3. Advisory Bulletin No. 19, March 23, 2015, "Rail Operation Noise Control in Perryville."

B. The Mayor and Commissioners endorse and support in concept the Recommendations set forth in Advisory Bulletin No. 17, Advisory Bulletin No. 18, and Advisory Board No. 19.

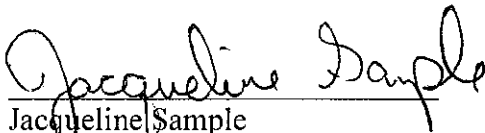
C. The Mayor is authorized to work collaboratively with the City of Havre de Grace to pursue the recommendations that appear in the Advisory Bulletins with Amtrak, the Maryland Department of Transportation and other affected parties.

D. The Town Administrator shall send copies of this Resolution to the Mayor and City Council of Havre de Grace, the Maryland Department of Transportation and Amtrak.


READ AND PASSED THIS 3rd day of November, 2015.

ATTEST:

MAYOR AND COMMISSIONERS OF
THE TOWN OF PERRYVILLE



Jacqueline Sample
Town Clerk

By: 

James L. Eberhardt, Mayor



Town Commissioners of Perryville

515 Broad Street, P.O. Box 773
Perryville, Maryland 21903-0773
(410) 642-6066
(410) 642-6391 (Fax)
Email: townhall@perryvillemd.org

Mayor
James L. Eberhardt

Commissioners
Barbara A. Brown
Alan Fox
Michelle Linkey
Raymond A. Ryan III

Town Administrator
Denise Breder

November 4, 2015

Ms. Angela Willis, Environmental Planner
Maryland Transit Administration, Environmental Planning
6 Saint Paul Street, 9th Floor
Baltimore, MD 21202

Re: Susquehanna River Rail Bridge Project
Section 106 Comments

Dear Ms. Willis:

This letter is written in follow up to the August 18, 2015 Section 106 Consulting Party Meeting for the Susquehanna River Rail Bridge Project. At the August meeting, the Committee requested feedback from the Town of Perryville on two issues.

First, the Committee wanted to know what the Town of Perryville would consider to be acceptable mitigation for intrusion into the historic character of the area if a retaining wall must be built directly across the road from historic Rodgers Tavern. At the November 3, 2015 Town Meeting, the Commissioners voted, should construction of the wall be necessary, that it be built out of architecturally pleasing materials and be painted with a mural.

Second, the Committee asked if the switch tower should or could be moved to town-owned property located across Broad Street from the train station. At the November 3, 2015 Town Meeting, the Commissioners voted to recommend that the switch tower be left in place if possible, and should it be necessary to demolish the switch tower, then they requested that it be fully documented before demolition, for historic purposes.

I request that this information be shared with the Committee at the next Section 106 meeting to be held on November 10, 2015. I will be unable to attend the meeting; however, Commissioner Alan Fox and Assistant Town Administrator, Cathy McCardell plan to attend in my absence. They will bring the town comments with them as well. Thank you for the opportunity to participate in the Section 106 process.

Sincerely,

Denise Breder

Town Administrator

CC: Mayor and Commissioners of Perryville
Ms. Catherine McCardell, Assistant Town Administrator
Ms. Jacqueline Thorne, Project Manager, MD Dept. of Transportation
Mr. Paul DeSignore, Amtrak
Mr. Jeffrey Konrad, HNTB



Town Commissioners of Perryville

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(410) 642-6391 (Fax)
Email: townhall@perryvillemd.org

Mayor
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Alan Fox
Michelle Linkey
Raymond A. Ryan III

Town Administrator
Denise Breder

April 14, 2016

Ms. Jacqueline Thorne
Project Manager
The Secretary's Office
Office of Freight and Multimodalism
Maryland Department of Transportation
7201 Corporate Center Drive
Hanover, Maryland 21076

Re: Susquehanna River Rail Bridge Project

Dear Ms. Thorne:

It is my understanding that the Susquehanna River Rail Bridge Committee has narrowed down the design options for the Amtrak bridge(s) over the Susquehanna River to two options, 9A and 9B. Both of the options are west of the existing bridge, bringing the bridge closer to historic Rodgers Tavern and Lower Ferry Pier, and both options have the potential to change traffic patterns in Perryville, primarily the Broad Street access to the Perry Point Veterans Administration Hospital. Please provide Perryville with details and renderings of the proposed landing of the bridge on the Perryville side.

Protection of Rodgers Tavern and Lower Ferry Pier, particularly during the construction phase, is very important to Perryville. It is also important that a Broad Street entrance to Perry Point be retained. Further, if possible, it would be our preference that the design allow for a more natural view from Rodgers Tavern while retaining the entrance to Perry Point.

If you have any questions, please contact me at 410-642-6066. Otherwise, I look forward to receiving the information on the proposed landing as requested.

Sincerely,


Denise Breder, Town Administrator

CC: Mayor and Commissioners of Perryville
Paul DeSignore, Amtrak
Michelle Fishburne, FRA
Volney Ford, Chairman, SRRBP Advisory Board
Amrita Hill, Amtrak
Cathy McCardell, Perryville Assistant Town Administrator
Dan Reagle, MTA Environmental Planning
Mary Ann Skilling, Town Planning Director



City of Havre de Grace

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Susquehanna River Rail Bridge Project
Advisory Board
of the Mayor and City Council

Advisory Bulletin #1
Introduction of the Advisory Board to SRRBP Agencies
Request for a Special Briefing
October 21, 2014

Background

The Advisory Board held its first meeting on October 6, 2014. It recognized that the most pressing task was to become fully on-board and aware of all developments to date with regard to the SRRBP preliminary engineering and environmental studies that are underway at this time. Board members have studied many of the correspondences between the SRRBP project team and our local jurisdictions, and the Board chairman attended both public presentations recently held in Havre de Grace and Perryville.

Recommended Action

The Advisory Board requests that the Mayor send a formal communication to all parties involved with the SRRBP project team, announcing the appointment of this board and including the following information:

1. The purpose, authorization, and specific limitations of this board.
2. The membership and qualifications of this board.
3. A request for the Advisory Board to henceforth be included in all general correspondences, given "Consulting Party" status with the participating agencies, and specially invited to all briefings delivered to local and county jurisdictions.

The Advisory Board further requests that the City arrange, as quickly as possible, a special briefing to members of the Advisory Board, to be delivered by representatives of the SRRBP project team at City Hall, preferably at the Board's scheduled meeting on Thursday, November

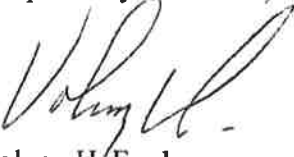
Advisory Bulletin #1

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6, 2014, at 5 PM, or at a date and time to be coordinated soon thereafter. This briefing should be confined to discussions of preliminary engineering progress to date, and more specifically concerning right-of way and track alignments, bridge engineering and architecture, a commuter rail station, street underpasses, and bridge abutment location.

This briefing should only require the presence of 2-3 engineering representatives of the SRRBP Project Team, and will be followed by an exchange of ideas between the Team and the Advisory Board. Advisories addressing each of these specific issues will be issued to the Mayor of Havre de Grace prior to this briefing and exchange of ideas.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Volney H. Ford". The signature is fluid and cursive, with a horizontal line at the end.

Volney H. Ford
Chairman



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Susquehanna River Rail Bridge Project Advisory Board of the Mayor and City Council

Advisory Bulletin #2
Bridge Architecture
October 21, 2014

Background

The Advisory Board, during its first meeting on October 6, 2014, determined that the overall appearance of the proposed Susquehanna River Rail Bridge is of the highest priority of importance to the City of Havre de Grace, surrounding communities, and the State of Maryland. This discussion was preceded by the strong opinion of many citizens and elected officials that bridge architecture is their most pressing concern.

The new bridge complex will dominate the downtown and waterfront vista for the next century or more, and will become iconic of Havre de Grace as a tourist and entertainment center. It will also become the gateway to the Lower Susquehanna Heritage Greenway, being positioned at the mouth of the greatest eastern river in our nation as it flows into the world's largest estuarial bay. This new bridge should also symbolize the future of Amtrak and of rail transportation as a national asset and environmental ally, given its unique location, intense rail activity, and imposing dominance.

Architectural Recommendations

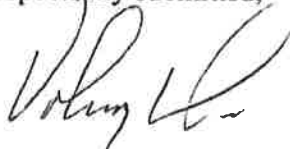
1. In the likely event that new twin bridges of two tracks each are constructed, both bridges should be of identical height and architecture, and should be aligned as closely to each other as possible, to give the appearance of one bridge.
2. The bridges should be entirely open-decked, with each span having graceful shallow-arched symmetry using massive closed-webbed steel beams that present an overall solid appearance. Emphasis should be placed on pleasing lines of curvature, with properly balanced span and arch dimensions.

3. Bridge support piers should be taller, more slender, and spaced farther apart than the existing piers to improve navigation and open up the viewscape.
4. Both bridges should be carried on the same elongated pier structures to emphasize the appearance of "one bridge" and to better resist river-borne collisions.
5. The catenary system should be suspended from a series of single, architecturally graceful solid-form towers, mounted directly on the piers between the bridges, with high-line arms at the very top and wide catenary arms extending in cantilever over the double-track bridge decks along both sides. This will do much to reduce the visual effect of catenary "clutter" while emphasizing the towers as central architectural features of the bridge complex.
6. The bridges and towers should be painted in a light metallic color, such as a golden platinum, to produce a distinctive daytime natural glow from great distances.
7. The entire bridge span, as viewed from upriver and downriver, should be provided with night-time accent lighting to create a warm glow along the outer face of each of its arches, in such a way that subtle arches of light are always visible at night.
8. All existing piers and abutments, whether supporting the current bridge or the previously removed rail/automobile bridge, should be removed down to the river bed, to eliminate clutter, enhance the viewscape, and greatly improve barge and boat navigation.

Recommended Action

The Advisory Board requests that the Mayor send a formal communication to the SRRBP project team, offering these recommendations as a typical example of the style of architecture the City and surrounding communities would expect and want to embrace.

Respectfully submitted,



Volney H. Ford
Chairman



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Susquehanna River Rail Bridge Project Advisory Board of the Mayor and City Council

Advisory Bulletin #3
Bridge Abutment Area
October 24, 2014

Background

The Advisory Board met on October 21, 2014, to examine the immediate area around the westerly landing of the proposed rail bridge complex in order to determine the most favorable placement of the new bridge abutment. Factors taken into consideration were a greater height and width of the proposed bridge complex, longer spans between piers, a probable shifting of track alignment southward, the need for a more impressive gateway entrance to the downtown area, safer traffic flow and intersection alignments under the bridge, and sufficient space to install a permanent outdoor historical display dedicated to the history and architecture of previous bridges located at this site.

Site Recommendations

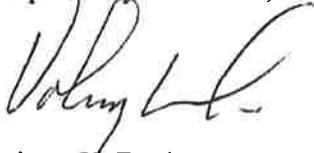
1. The new bridge abutment should be retracted westward, almost to the Freedom Lane tunnel underpass (eliminating that underpass) to allow for each of the following recommendations and to prevent further abutment crowding of the current street intersection area that would be caused by much wider bridge and trackage requirements.
2. The sharply curving, semi-blind intersection of Otsego Street and Union Avenue should be improved to a much wider radius of turn that would align directly with Saint John Street. This would allow longer and more generous turn lanes and greatly improved sight lines.
3. The Water Street intersection should be relocated farther west along Otsego Street, in conjunction with that of Pearl Street.
4. Both David Craig Park and Jean Roberts Park should be enlarged westward to the proposed Otsego/Union street curvature.

5. Railroad property under the bridge complex and situated between the two city parks should, by special agreement, be made available for public use and maintained by the City of Havre de Grace to appear as part of the park complex. This area should contain landscaping and walkways, but should have no structures, to allow full access for bridge maintenance.
6. Railroad property under the bridge complex, and situated between the proposed Otsego/Union street curvature and the relocated bridge abutment, should likewise be made available for public use and maintained by the City of Havre de Grace as open space with landscaping and walkways, but no structures.
7. The monumental gateway signage that exists under the current bridge should be relocated northwestward toward the proposed intersection of Water and Otsego Streets, and should include a beautiful and enlarged landscaping feature.
8. The much higher new bridge understructure would result a brighter and more open streetscape, which should be enhanced with ornamental tree plantings wherever possible without blocking sight lines or interfering with bridge maintenance operations.
9. A significant portion of an enlarged David Craig Park should be reserved for a strategically placed permanent outdoor historical display dedicated to the history and architecture of the previous bridges at this site.

Recommended Action

The Advisory Board requests that the Mayor and City Council take necessary steps to consolidate these or similar recommendations into a formal communication to the SRRBP project team as soon as possible. The abutment location is an engineering and track alignment issue that must be resolved by the SRRBP project team very soon.

Respectfully submitted,



Volney H. Ford
Chairman



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Susquehanna River Rail Bridge Project Advisory Board of the Mayor and City Council

Advisory Bulletin #4 Westerly Right-of-Way and Alignments October 31, 2014

Background

The Advisory Board met on October 28, 2014, to examine the current and proposed railroad right-of-way corridor, extending from the bridge abutment area in downtown Havre de Grace to the Lewis Lane overpass. The recommendations provided below are based on several current assumptions that would appear to be likely outcomes as the SRRBP Project Team moves forward with its preliminary design analysis. These are also based on other closely-related recommendations of the Advisory Board that have been issued or are soon to be issued.

More specifically, it is assumed that a new river bridge abutment would be located westward to the Freedom Lane tunnel-style underpass (Advisory #3), an additional pair of high-speed rail lines would need to be located significantly southeastward of the existing rail lines to achieve a more favorable curve radius, and all four new rail lines would shift accordingly to align with both new bridges (assuming the two-bridge concept). Expansion and repositioning of the new rail corridor would therefore require repositioning and reconstruction of up to three sets of street underpass bridges and two sets of lane underpass bridges or tunnel-like passages.

Right-of-Way Recommendations

1. In situations where the outermost high-speed rail line will be required to pass very close to City streets, private property structures, public facilities, and high/middle school facilities, especially in the case of the new James Harris Stadium, a vertical or nearly vertical retaining wall system should be installed to reduce the broad footprint required of earthen embankments.
2. All new street underpass construction should provide enough open span to ensure room for a public sidewalk along both sides of each street passage and one side of each lane passage, with each walkway a minimum of six feet in width and elevated to curb height.

3. As rail alignments are relocated southeastward, the existing northwestward embankments should be retracted southeastward and reduced to natural grade where no future need for trackage or trackside facilities are envisioned. The purpose of this is to increase open space at natural grade and to reduce the overall visual impact of a wider and higher earthwork.

Architectural Recommendations

1. All railroad overpass abutments should be of a consistent architectural design and appearance, using the same materials.
2. All railroad overpass spans should be of a consistent architectural design and appearance, allowing for depth variations that may be required for differing span lengths.
3. Retaining walls and abutments should incorporate a natural texture and color that suggests stone, and should be designed to emphasize horizontal lines while de-emphasizing height.
4. Retaining wall and abutment architecture and materials should discourage noxious weed growth as much as possible.
5. Earthen embankments should be densely planted with a variety of landscaping species that resist erosion and noxious weed growth wherever they are exposed to developed property or unforested areas.
6. Security fencing should be minimized as much as possible in appearance, placed far enough from the toe of embankments to allow weed control, and coated black to blend with the landscape.
7. Underpass abutments should be designed with wing walls that provide a natural and architecturally pleasing connection with security fencing by terminating them at fence height.
8. Guard railings that may be required along the tops of retaining walls and railroad overpass bridges should be painted black and be designed for minimal appearance.

Noise Reduction

1. Retaining walls, track beds, and embankment landscaping should be designed to mitigate noise reflection as much as possible, whether generated by railroad operations or deflected from other sources within the community.
2. Sounding of locomotive horns at the northbound approach to the Susquehanna River Bridge, which always occurs at about the James Harris Stadium, is highly disruptive to activities in all the nearby public facilities, and is detrimental to sleeping residents. It is understood that this grade-crossing warning is not a normal requirement when approaching bridges, and was once implemented by special request of the City of Havre de Grace in response to a bridge fatality. The subsequent installations of bridge safety catwalks, guard railings, and approach security fencing should reasonably justify elimination of the horn warning.

General Comments

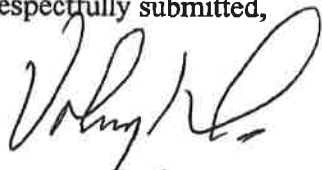
The current right-of-way passes through the heart of what is known as the historic "old town" Havre de Grace, dividing neighborhoods, impacting traffic flow, detracting from normal residential viewsapes, and producing a very significant amount of noise. In the years since its creation, the elevated earthen right-of-way has produced unsightly weed and tree growth, unattractive security fencing, heavily stained stonework, overpass bridges that are functional but lack form, and tunnel-like passages that appear dirty and unsafe.

The recommendations provided herein would appear to significantly exceed the traditional appearance standards and practices of railroad rights-of-way in towns and cities throughout our nation. This corridor is a notable exception. It will pass in closer proximity to, and in full view of, almost all modern and about-to-be-built public institutions in this city: City Hall, Police Station, Post Office, James Harris Stadium, High School, Middle School, and Senior Activities Center. It will also pass immediately adjacent to residences, offices, retail business establishments and tourism attractions. We should ensure that the increased impact of this massive railroad realignment and enlargement project is mitigated by quieter operation, more impressive architecture and more attractive landscaping.

Recommended Action

The Advisory Board requests that the Mayor and City Council take necessary steps to consolidate these or similar recommendations into a formal communication to the SRRBP Project Team as soon as possible. The extensive use of retaining walls, along with underpass requirements, are engineering issues that affect overall track alignment, and must be resolved by the SRRBP project team very soon. The Board also recommends that the Mayor submit a formal inquiry to Amtrak officials regarding the bridge warning horn issue.

Respectfully submitted,



Volney H. Ford
Chairman



City of Havre de Grace

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Susquehanna River Rail Bridge Project
Advisory Board
Of the Mayor and City Council

Advisory Bulletin #5
Street and Lane Underpasses
November 3, 2014

Background

The Advisory Board met on October 28, 2014 to study all street and lane underpasses along the Amtrak rail corridor from Freedom Lane to Juniata Street, and to determine whether it would be in the best interests of the City to abandon any one of these to facilitate proposed changes in the elevated right-of-way alignment. The three rail bridge overpasses in question are located at Stokes, Adams, and Juniata Streets. The two narrow and tunnel-like rail overpasses in question are located at Freedom and Centennial Lanes.

The Board has carefully considered a range of concerns with regard to abandonment of any street or lane underpass. These include traffic impact, access to private property, neighborhood vehicular and pedestrian inconveniences, dead-end turnaround conditions, emergency response routes, and large truck maneuvering. The Board also recognizes the enormous cost savings to the rail project of eliminating one or more of the existing rail overpass structures. Such savings could make feasible a number of design and facility concessions that the City may wish to seek in connection with the overall SRRBP.

This advisory is put forth under the assumption that the river bridge abutment would be retracted westward almost to Freedom Lane, as detailed in Advisory Bulletin #3. It also refers to elements of the forthcoming Advisory Bulletin #6 - Rail Commuter Station, which would be dependent upon certain underpass eliminations and street alterations.

Advisory Bulletin #5

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Freedom Lane Underpass

The tunnel-like street underpass at Freedom Lane is a very short and seldom-used vehicular passage from Otsego to Warren Streets. It does not provide a notably shorter driving route from any point to any other point in the City, and does not appear to be a clean and safe pedestrian route for most citizens and visitors. If the recommendations of Advisory Bulletin #3 are incorporated, the repositioned rail bridge abutment would lie so close to this underpass that it would no longer have purpose. If a new Otsego/Union intersection radius is relocated westward accordingly, its accompanying pedestrian sidewalk would become a more convenient shortcut from the Otsego Street neighborhoods to the downtown area than the "tunnel". The Advisory Board recommends permanent closure and elimination of this lane underpass.

Stokes Street Underpass

Stokes Street is an important cross-town secondary route that extends the entire north/south length of the Historic District, without interruption or right-of-way reduction. It is regularly used as a means of reaching the residential areas between Union Avenue and Adams Street, and is designated one-way from Otsego Street, with very few stop signs, to facilitate travel time.

Closure of this street at the rail overpass would defeat its purpose as a convenient cross-town route and cause residential traffic to thread its way in from boundary arterials, putting more pressure on the two-way crossing streets. In addition, the very short dead-end section of Stokes Street that would be created between Otsego Street and the railroad embankment would leave no room for a proper cul-de-sac or turnaround area for the few residences that utilize this street section. The Advisory Board strongly recommends that this street underpass be retained and provided with improved lighting. A concession could be made to shorten the rail overpass span here, provided that current street width is maintained and that public sidewalks of at least six feet in width are installed along both sides of the street (see Advisory Bulletin #4).

Centennial Lane Underpass

The tunnel-like underpass at Centennial Lane is also a seldom-used vehicular passage from Otsego to Warren Streets. It likewise does not provide a notably shorter driving route from any point to any other point in the City, and does not appear to be a clean and safe pedestrian route for most citizens and visitors. Centennial Lane does appear to provide sole access to at least one property and several buildings south of Otsego Street, however, which would require adequate means of U-turning or otherwise discharging vehicles if this street underpass were closed.

Advisory Bulletin #5

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The Advisory Board recommends permanent closure and elimination of this lane underpass, and extension of Centennial Lane west-southwestward to Adams Street. This extension should become a new segment of Morrison Lane, and should be located on current railroad property along its northwestern boundary. The installation of a rail commuter station (see Advisory Bulletin #6) would require the elimination of this lane underpass. In that circumstance, the stub end of Centennial Lane should discharge through the station's northwest main parking area to Stokes or Adams Street without the need for a dedicated Morrison Lane extension.

Adams Street Underpass

Adams Street is also an important cross-town secondary route; however, it becomes more narrow at City Hall and is interrupted between Pennington and Congress Avenues. In comparison to Stokes Street, fewer vehicular movements occur along Adams Street, as it is close to the Juniata Street arterial and has only ten dwelling units between the railroad and Pennington Avenue. There are more than thirty dwelling units along the same stretch of Stokes Street. Although closure of this underpass would isolate one full block of Adams Street between Otsego Street and the railroad, its intersection with the currently isolated northwestern segment of Warren Street would provide easy flow-through ingress and egress connecting with Juniata Street.

There are two good reasons to consider closure of the Adams Street underpass. First, elimination of this complete set of four or five new rail bridges and both new abutment structures would represent an enormous cost savings to the rail project. This could easily be the single largest concession that Havre de Grace has to offer in negotiating for other special requests, especially when combined with lane underpass eliminations. Second, the street-level space gained in the process would be very advantageous to rail commuter station parking areas, station traffic patterns, emergency access to a trackside station platform, and pedestrian safety.

The Advisory Board recommends permanent closure and elimination of this street underpass provided that a rail commuter station is installed and put into service as part of the overall rail bridge project. The Advisory Board recommends that this street underpass be retained, under the same conditions recommended for the Stokes Street underpass, if a rail commuter station is not put into service at this location.

Juniata Street Underpass

Juniata Street is perhaps the most heavily traveled north/south arterial east of Route 40 in Havre de Grace, and serves as a "second gateway" into the city proper. It is the primary gateway to City Hall, the post office, police station, stadium, public library and several churches. It is also

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the most convenient route to the hospital, J M Huber industrial area, and Revolution Street. The current rail overpass span accommodates the width of Juniata Street with enough room for sidewalks but has the appearance of a constricted opening that seems to crowd the right-of-way, blocking view until the last moment of modern public facilities that lay just beyond.

The Advisory Board recommends that this underpass be retained under all circumstances, and that its abutments be spread at least twenty feet farther apart to compensate for the visual effects of a broader 4-5 track rail bridge complex. This underpass should also be well-lighted for safety and security.

Recommended Action

The Advisory Board requests that the Mayor and City Council take necessary steps to consolidate these or similar recommendations into a formal communication to the SRRBP Project Team as soon as possible. The Board wishes to stress the importance of recommended underpass closings in connection with the desired outcomes of several other advisories, and rapid resolution of related engineering issues.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Volney H. Ford". The signature is fluid and cursive, with a large initial "V" and "H".

Volney H. Ford
Chairman



City of Havre de Grace

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Susquehanna River Rail Bridge Project Advisory Board Of the Mayor and City Council

Advisory Bulletin #6 Rail Commuter Station November 5, 2014

Background

The Advisory Board met on October 28, 2014, to examine the feasibility and best location of a new rail commuter station to serve Havre de Grace. In order for this commuter station to be most successful in ridership and most beneficial to local commerce, it should be located within easy walking distance to the downtown, waterfront, retail offerings, restaurants, bed-and-breakfast establishments, and other tourism destinations. It would also require ease of access and plenty of parking for commuters.

In visiting this important issue, the Board has considered a wide range of concerns with regard to available parking areas, station security, neighborhood safety, traffic impact, traffic routing, rail alignments and possible turnouts, distance from the river bridge, station layout, and boarding platform access. This advisory assumes that current alignment of the elevated railway is likely to be repositioned southeastward to align with the replaced bridges.

Station Location

In keeping with the objectives of positioning the station as close to the central business district as possible, while allowing enough distance from the proposed river bridges to ensure passenger safety and to install a possible fifth track turnout, The Board recommends centering the station between Stokes Street and Centennial Lane, with a shift more toward Centennial Lane if absolutely necessary. This position would also be at the epicenter of available parking opportunities and would offer the most ideal ingress and egress of vehicular traffic from Stokes, Adams, and Warren Streets.

Station Configuration

The height and relative narrowness of the elevated railway earthwork, even when repositioned and enlarged to align with the proposed bridges, is not favorable to the layout of a traditional rail commuter station at track level. The Board recommends a rather novel approach to this situation, which can offer many other benefits. The station proper, containing the ticket kiosk, restrooms, access to rail platforms above, information displays, and local tourism kiosks, should be located within a reinforced underground shell at street level, extending across the entire elevated portion of the right-of-way, with a main entrance at both ends.

The south entrance on Warren Street would provide access to parking areas on that side of the elevated railway with pedestrian access directly into downtown, only one block away. The north entrance would provide direct access the largest commuter parking lot and a potential parking area just beyond it. Both entrances should be attractively designed as retaining wall facades with wing walls and sheltered entryways. Small plazas at both entries should be well-lit, well-landscaped, and secure in appearance.

Boarding Platform Access and Layout

Public access to the boarding platforms should be restricted to interior stairways and elevators that would rise from the station interior and terminate within the shelter of boarding platform roof systems and weather screens. The advantage of such an access is that when the station is closed and locked during non-commuting hours, the boarding platform area will be completely inaccessible. Under this arrangement commuters will have less exposure to inclement weather, from station entry to rail car boarding.

The Board proposes a covered boarding platform length of 250 feet, with platforms and platform accesses along the northbound and southbound commuter/freight tracks, each having a widened shelter at the center for elevator and stairway shafts, and commuter congregation areas. Platform shelters should be carefully designed to resist exceptional wind and blowing rain conditions created by the river gorge and elevated embankment effects. The stairway shafts should be cross-connected at the highest practical level under the tracks to permit rapid commuter movement from one platform to the other and to discourage track-crossing.

Track Alignment

The northwesterly pair of tracks normally designated for freight and commuter trains, and expected to extend across the north bridge span to align with the Perryville freight wye and commuter station, should remain on tangent from the bridge as far as possible toward the

station. This is intended to provide significant separation from the high-speed pair of tracks that are expected to utilize the south bridge span, and which will likely begin a path of radius at the immediate end of the bridge.

Emergency and Maintenance Access

The boarding platform area will require vehicular access for emergency response, periodic maintenance, and routine custodial service. The Board recommends a securely gated vehicular ramp beginning at Adams Street and rising along the northwesterly side of the embankment to boarding platform level. The access ramp can rise from Stokes Street as an alternative plan, if the station is positioned farther southwestward.

Station and Restroom Maintenance

The Board recommends that the City of Havre de Grace enter into an agreement with MARC to provide daily custodial maintenance and service within the station and restrooms, but not including the boarding platform area, as part of its city-wide public restroom and public facility custodial program. The station restrooms and tourism kiosks would provide a convenient location at the north end of town for non-rail visitor access, and could be kept open beyond commuting hours and on weekends by City personnel if boarding platform access is otherwise locked within the station. The station and its entrances should be video-monitored at the City Police Department to ensure public security and rapid response to incidences.

Commuter Parking

The railroad owns a significant amount of vacant land along its current right-of-way that lies beyond the toe line of the elevated embankments, forming triangles of flat ground between the embankments and public streets or private property. Some of this street-level vacant land will likely be absorbed along the southeast side of the right-of-way by realignment of the trackage in that direction, but land at ground level along the northwest side may be expanded if the embankment toe-line along that side is retracted accordingly. It appears to the Advisory Board, when taking into account the likely repositioning of elevated portions of the railroad right-of-way, and assuming that appropriate railroad property and City property will be made available for commuter parking, the following opportunities exist:

1. The large open area of railroad property between Stokes and Adams Street, which lies behind dwellings fronting on Otsego Street, should become the principal station-entry parking area, with access from both Stokes and Adams Street. The Adams Street point of

entry and exit should occur at its intersection with Warren Street, assuming elimination of the Adams Street underpass, and would thus be accessed straight in from Juniata Street. This parking lot can be made significantly larger by the installation of a vertical retaining wall extending from the station entrance to both street entrances, thus eliminating the space required for a sloped embankment.

2. The Susquehanna Hose Company owns a sizable triangle of vacant and unused land behind its fire station on Juniata Street. This land fronts Warren Street along the northwest side of the railway embankment, and offers a direct and safe pedestrian connection to the proposed main station parking lot without a street crossing, provided that the Adams Street underpass is eliminated. It is also directly accessed from Juniata Street.
3. The railroad owns a large square-shaped area of vacant land fronting Warren Street between Freedom Lane and Stokes Street. The apartment building at the east side of Freedom Lane leases from the railroad a small strip of parking spaces just across the lane. These spaces, necessary to the apartment off-street parking requirement, can be relocated into the Freedom Lane right-of-way proposed for closure to the public, and then leased from the City. This vacant land is positioned very close to the proposed south station entrance, and would be accessed easily from Union Avenue or Stokes Street.
4. Warren Street is not fronted by any dwellings or businesses between Stokes and Adams Streets. There may be enough available space between its northwest edge and the toe line of a relocated railway embankment to allow diagonal on-street parking or a narrow on-site parking lot. A parking lot at this location can be enlarged significantly by the installation of a vertical retaining wall instead of a sloped embankment, which can also be designed as an extension of the station entrance.
5. A large area of vacant private property exists directly across from the proposed station entrance, bordered by Warren and Stokes Streets and Centennial Lane, which could become available in the future.
6. The large apartment building at the corner of Warren Street and Freedom Lane lies very close to the railroad right-of-way and could be in conflict with alignment of the south river bridge and the path of high-speed rail radius. If this property must be taken, additional parking area would thus become available.

Street Modifications

1. Under the assumption that the Adams Street underpass would be eliminated, Warren Street should be reduced to a single lane of travel in both directions and realigned closer to the southeast edge of its right-of-way between Adams and Stokes Streets, to allow more room for a narrow parking lot or for head-in parking along its northwest side, while retaining good flow of truck traffic serving commercial enterprises along Adams Street. There are no dwellings or businesses along this block of Warren Street that would require on-street parking.

2. Stokes Street should be reverted to two-way traffic operation between Otsego and Warren Streets, to facilitate traffic flow to and from the south parking areas of the proposed station.
3. Stokes Street should be widened along this same block, with larger corner radiuses at Otsego Street, to allow ample two-way traffic flow and to retain on-street parking for the few dwellings that face it.
4. Centennial Lane should extend into the proposed north parking lot of the station to eliminate the need for a dead-end turnaround; however, it should be made one-way only, in the southward direction.

Recommended Action

The Advisory Board requests that the Mayor and City Council take necessary steps to consolidate these or similar recommendations into a formal communication to the SRRBP Project Team as soon as possible. The need of a rail commuter station has been an important component in the Havre de Grace Comprehensive Plan for at least two decades, and should be vigorously pursued.

Respectfully submitted,



Volney H. Ford
Chairman



City of Havre de Grace

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Susquehanna River Rail Bridge Project
Advisory Board
of the
Mayor and City Council of Havre de Grace
for the
Mayor and Town Commission of Perryville

Advisory Bulletin #7
Bridge Architecture
November 18, 2014

Background

The Advisory Board, during its first meeting on October 6, 2014, determined that the overall appearance of the proposed Susquehanna River Rail Bridge is of the highest priority of importance to the Town of Perryville, City of Havre de Grace, surrounding communities, both counties, and the State of Maryland. This discussion was preceded by the strong opinion of many citizens and elected officials that bridge architecture is their most pressing concern. Advisory Bulletin #2, containing the same recommendations provided in this bulletin, was issued to the Mayor and City Council of Havre de Grace on October 21, 2014, and endorsed by formal Council resolution on November 17, 2014.

The new bridge complex will be a major feature of the downtown and waterfront areas of Perryville for the next century or more. It will also become the gateway to the Lower Susquehanna Heritage Greenway, being positioned at the mouth of the greatest eastern river in our nation as it flows into the world's largest estuarial bay. This new bridge should also symbolize the future of Amtrak and of rail transportation as a national asset and environmental ally, given its unique location, intense rail activity, and imposing dominance.

Architectural Recommendations

1. In the likely event that new twin bridges with two tracks each are constructed, both bridges should be identical in height and architecture, and should be aligned as closely to each other as possible to give the appearance of one bridge.

2. The bridges should be entirely open-decked, with each span having graceful shallow-arched symmetry using massive closed-webbed steel beams that present an overall solid appearance. Emphasis should be placed on pleasing lines of curvature, with properly balanced span and arch dimensions.
3. Bridge support piers should be taller, more slender, and spaced farther apart than the existing piers to improve navigation and open up the viewscape.
4. Both bridges should be carried on the same elongated pier structures to emphasize the appearance of "one bridge" and to better resist river-borne collisions.
5. The catenary system should be suspended from a series of single, architecturally graceful solid-form towers mounted directly on the piers between the bridges, with high-line arms at the very top and wide catenary arms extending in cantilever over the double-track bridge decks along both sides. This will do much to reduce the visual effect of catenary "clutter" while emphasizing the towers as central architectural features of the bridge complex.
6. The bridges and towers should be painted in a light metallic color, such as a golden platinum, to produce a distinctive daytime natural glow from great distances.
7. The entire bridge span, as viewed from upriver and downriver, should be provided with night-time accent lighting to create a warm glow along the outer face of each of its arches, in such a way that subtle arches of light are always visible at night.
8. All existing piers and abutments, whether supporting the current bridge or the previously removed rail/automobile bridge, should be removed down to the river bed to eliminate clutter, enhance the viewscape, and greatly improve barge and boat navigation.

Recommended Action

The Advisory Board proposes that the Mayor and Town Commission of Perryville consider these recommendations under a formal resolution, communicating the same to the SRRBP project team, as typical of the style of architecture the Town of Perryville and surrounding communities would expect and want to embrace. The recommendations of this advisory, having been submitted previously as Advisory Bulletin #2 and tailored to the perspective of Havre de Grace, should require no additional action on its part at this time.

Respectfully submitted,



Volney H. Ford
Chairman



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Susquehanna River Rail Bridge Project Advisory Board Of the Mayor and City Council

Advisory Bulletin #8
River Navigation
December 4, 2014

Background

The Advisory Board met on November 25, 2014 to develop recommendations for the accommodation of large vessel navigation and safe passage under the proposed new rail bridge system, at the main channel location. The principal concerns were vertical clearance, horizontal clearance, and a protective fender system. This advisory assumes removal of all existing piers that support the current Amtrak bridge and the adjacent abandoned piers from the long-ago demolished rail/highway bridge, as recommended in Advisory Bulletin #2.

The Board relied heavily on advice and recommendations from representatives of Vulcan Materials Corporation, which operates a large stone quarry just upstream of the bridge site, from which stone is barged out on a near daily schedule. These concerns and recommendations were expressed by Vulcan's Marine Operations Manager and its local tugboat captain at the recent joint meeting between the Advisory Board and the SRRBP Project Team on November 6, 2014.

Design Recommendations

Vertical clearance at the main channel under-passage should reach sixty-five (65) feet if at all possible, to be consistent with inland waterway standards and sailing vessels that are now designed to those standards and berth at upstream marinas. The absolute minimum clearance should be no less than sixty (60) feet.

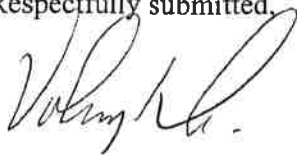
Horizontal clearance at the main channel under-passage should be no less than two hundred (200) feet net width between fenders, which may require a pier spacing of up to 240 feet center-to-center. Such a clearance will safely accommodate a single barge with opposing traffic and can safely accommodate a double-wide barge movement without opposing traffic.

Three types of fender systems were considered for protecting piers and large vessels at the main channel under-passage: Concrete, wood and composite plastic. Concrete fenders are the least resilient and can cause considerable damage to barges and other vessels. Wood pile and wale fenders are more resilient and less damaging to vessels, but are themselves easily damaged, more costly to maintain, and can become ragged eyesores long before replacement becomes necessary. The Board strongly recommends a composite plastic pile and wale fender installation as the most resilient, least damaging, longest lasting, easiest to maintain, and most attractive system for this unique and important gateway location.

Recommended Action

The Advisory Board requests that the Mayor and City Council take necessary steps to consolidate these or similar recommendations into a formal communication to the SRRBP Project Team as soon as possible.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Volney H. Ford". The signature is fluid and cursive, with a large initial "V" and a long, sweeping underline.

Volney H. Ford
Chairman



City of Havre de Grace

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Susquehanna River Rail Bridge Project
Advisory Board
of the
Mayor and City Council of Havre de Grace
for the
Mayor and Town Commission of Perryville

Advisory Bulletin #9
River Navigation
December 9, 2014

Background

The Advisory Board met on November 25, 2014 to develop recommendations for the accommodation of large vessel navigation and safe passage under the proposed new rail bridge system, at the main channel location. The principal concerns were vertical clearance, horizontal clearance, and a protective fender system. This advisory assumes removal of all existing piers that support the current Amtrak bridge and the adjacent abandoned piers from the long-ago demolished rail/highway bridge, as recommended in Advisory Bulletins #2 for the City of Havre de Grace and #7 for the Town of Perryville.

The Board relied heavily on advice and recommendations from representatives of Vulcan Materials Corporation, which operates a large stone quarry just upstream of the bridge site, from which stone is barged out on a near daily schedule. These concerns and recommendations were expressed by Vulcan's Marine Operations Manager and its local tugboat captain at the recent joint meeting between the Advisory Board and the SRRBP Project Team held on November 6, 2014. Advisory Bulletin #8, containing the same recommendations provided in this bulletin, was issued to the Mayor and City Council of Havre de Grace on December 4, 2014.

Design Recommendations

Vertical clearance at the main channel under-passage should reach sixty-five (65) feet if at all possible, to be consistent with inland waterway standards and sailing vessels that are now designed to those standards and berth at upstream marinas. The absolute minimum clearance should be no less than sixty (60) feet.

Horizontal clearance at the main channel under-passage should be no less than two hundred (200) feet net width between fenders, which may require a pier spacing of up to 240 feet center-to-center. Such a clearance will safely accommodate a single barge with opposing traffic and can safely accommodate a double-wide barge movement without opposing traffic.

Three types of fender systems were considered for protecting piers and large vessels at the main channel under-passage: Concrete, wood and composite plastic. Concrete fenders are the least resilient and can cause considerable damage to barges and other vessels. Wood pile and wale fenders are more resilient and less damaging to vessels, but are themselves easily damaged, more costly to maintain, and can become ragged eyesores long before replacement becomes necessary. The Board strongly recommends a composite plastic pile and wale fender installation as the most resilient, least damaging, longest lasting, easiest to maintain, and most attractive system for this unique and important gateway location.

Recommended Action

The Advisory Board proposes that the Mayor and Town Commission of Perryville, and surrounding communities, take necessary steps to consolidate these or similar recommendations into a formal communication to the SRRBP Project Team as soon as possible. The recommendations of this advisory, having been submitted previously as Advisory Bulletin #8 to the City of Havre de Grace, should require no additional action on its part at this time.

Respectfully submitted,



Volney H. Ford
Chairman



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Susquehanna River Rail Bridge Project Advisory Board Of the Mayor and City Council

Advisory Bulletin #10 Safe Harbor Jetty Proposal January 23, 2015

Background

The Advisory Board met on December 4, 2014 to develop recommendations for the construction of a long jetty system extending more or less parallel to the Havre de Grace waterfront, from the Susquehanna Lockhouse Museum to the Concord Point Lighthouse. Known for more than fifteen years as the Jetty Project, a waterfront task force was formed in 2000 by the Downtown Focus Group, and an official Jetty Committee was appointed soon thereafter to study the proposal, identify consultants, and provide recommendations to the Mayor and City Council for implementation.

As jetty consultants were identified and invited to submit detailed proposals for a feasibility study, it became clear that such a project would not only provide much-needed property protection from periodic storm-raged waters and water-borne debris, but would also create a safe and calm destination harbor at the top of the bay for Chesapeake Bay boaters. Other benefits would include the creation of a sheltered area for wildlife, resurgence of sub-aquatic vegetation, significant reduction of harbor siltation, elimination of shoreline debris, and protection against upriver barge or rail accidents.

The Jetty Project initiative came to a halt sometime during or shortly after 2002, for reasons that were never made clear to most of those who were involved. It did not reach the stage of initial funding, and as a result no feasibility studies were ever contracted. There is little doubt that project construction cost was a major source of concern at the time, even if the feasibility study would have been jointly funded by the City, County and State governments.

The Advisory Board considers the original riverfront jetty concept to be much more valid today than in the past, as a result of major hurricane and floodgate release damage, and a runaway barge event, all having occurred since the 2002 initiative. Crude oil unit trains, in more recent daily operation along the river edge are also a source of potential danger from oil pollution, fire, and floating rail cars in the event of a major derailment.

Very great concern has developed in recent years regarding the rapid and continuous buildup of sediment along the shoreline and in the marinas of Havre de Grace, requiring frequent and very expensive dredging operations. This problem and its underlying causes have been well-documented by the Lower Susquehanna River Watershed Assessment partnership in its executive summary of a report issued in October, 2014. The Advisory Board has carefully studied other material contained in the original consultant proposals and recommendations of the Jetty Committee, and is in general support of this project as proposed at that time.

Association with the Rail Bridge Replacement Project

The proposed Susquehanna River Rail Bridge replacement project offers an opportunity for very significant cost savings in both old bridge demolition and new jetty construction. The Board has recommended in its earlier advisories that all existing bridge piers and abutments, including the line of abandoned piers beyond Craig Park, be removed down to the river bed and below grade on dry land. Some street crossing abutments within the City may also require total replacement due to significant realignment of track curvature.

At least 50,000 cubic yards of massive granite blocks will need to be removed and disposed of in the demolition process, requiring the expense of loading, transporting and unloading elsewhere, by rail or barge. This material would be ideal for armoring the jetty along the sides facing strong current, saving the purchase, loading and transport of very large quarry stones. When all available granite blocks are put in place, the remainder of the jetty would be armored with more conventional sizes of quarry stone, dependent on exposure to natural forces. Under this proposal, the bridge contractor would simply hoist the cut stone blocks onto the jetty contractor's barges for direct placement back in the water.

An even more significant cost saving opportunity for jetty construction has developed since the previous jetty proposal. Vulcan Materials, owner of the nearby granite quarry, has informed the Board that it has approximately 778,000 cubic yards of overburden stored on site that it must somehow remove in order to gain access to future beds of granite within its property. This material is ideal for the jetty core structure, there is more than enough available to build the entire jetty, and the cost of acquiring and moving it would be a fraction of that for typical jetty core construction.

The key to this proposal is the timing of its feasibility study, design phase, funding, and letting of contracts to coincide with that of the rail bridge project, to realize maximum cost savings and construction efficiency, and to allow the rail bridge project to also realize costs savings and efficiency in the granite removal and disposal process. The Board believes that this would be a unique opportunity to benefit both projects.

Design Recommendations

Several concepts were put forth in the 2000-2002 feasibility study proposals, which included a full-length jetty, a partial waterfront jetty, and a floating breakwater system. The Advisory Board has concluded that a full-length river jetty system, constructed as a linear series of armored berms, will offer the strongest, most permanent, and lowest maintenance solution to protecting the entire City waterfront against the greatest variety of mechanical hazards and weather events, and against rapid siltation of its harbor facilities.

The proposed jetty should begin upriver at the south corner of the mouth of Lilly Run, tapering gradually outward in the downstream direction to a maximum distance of 500 feet offshore of the most protruding points of land along the waterfront, beginning at the south property line of the Havre de Grace Marina and terminating below Concord Point, in line with the City Yacht Basin entrance.

At least three navigable entrances, and preferably four, should be provided as gaps in the jetty line, with their throats oriented downriver to divert the river current outward and keep the harbor area calm. A special groin should be designed at the upriver end of the jetty to keep strong current and debris out, but allow some fresh water in, to prevent stagnation. The downriver end of the jetty system should terminate well away from shore and designed to prevent eddy currents from affecting the City Yacht Basin and its back channel.

By carefully designing the jetty system from a hydrologic perspective, an important objective should be the creation of a much healthier ecosystem for wildlife and subaquatic vegetation to thrive in shallow areas along the waterfront, including a very large natural area within the upriver end of the jetty. A very important objective should be major reduction or near-elimination of rapid sediment build-up that seriously affects all the marinas, the back channel and the preserved lock at the Lockhouse Museum. This serious sedimentation problem also has a detrimental impact on the subaquatic ecosystem along the shoreline. Another important objective should be the reduction or near elimination of water-borne debris and trash accumulation along the entire waterfront, particularly in cove areas and boat slip passageways.

Although all segments of jetty system should be boat-accessible and walkable as an outlying public facility, only the northernmost segment would be suitable for direct pedestrian access from land, via the Lockhouse Museum grounds. A footbridge for this purpose should be installed over its non-navigable groin opening. With greatly expanded opportunities for boat slips and safe off-shore anchorages, shallow inshore areas should be preserved and expanded wherever possible to encourage a greater number and variety of breeding wildlife common to this area a century ago, and to create a more natural riverscape setting for the enjoyment of all.

Recommended Action

The Advisory Board requests that the Mayor and City Council take necessary steps to consolidate these recommendations into a formal communication to the SRRBP Project Team as soon as possible, and to begin the formal process of funding a comprehensive feasibility study for jetty design, funding and construction. The Board concludes that there is sufficient time to accomplish all the necessary study, funding, design and construction phases of this project if initiated very soon and in concert with the bridge replacement project.

Respectfully submitted

A handwritten signature in black ink, appearing to read "Volney H. Ford", written over the typed name below.

Volney H. Ford
Chairman



City of Havre de Grace

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Susquehanna River Rail Bridge Project Advisory Board Of the Mayor and City Council

Advisory Bulletin #11 Bridge Abutment Area – First Update January 26, 2015

Background

The Advisory Board met on October 21, 2014, to examine the immediate area around the westerly landing of the proposed rail bridge complex in order to determine the most favorable placement of the new bridge abutment. Advisory Bulletin #3 was issued by the Board on October 24, 2014, based on the assumption that the new high-speed bridge of the proposed twin bridges would be installed on the downriver (south) side of the existing bridge, with the lower-speed bridge taking the place of the existing bridge. It was also assumed that the new bridges would be elevated significantly at the landing abutment.

As feasibility studies and preliminary design with regard to track elevation and alignment have been developed further by the SRRBP study team since October, it appears that the most favorable track alignments would now place the lower-speed bridge of the proposed twin bridges along the upriver (north) side of the existing bridge, with the other bridge taking its place. It also appears now that little or no raising of the track elevation will be necessary at the landing abutment. This information was obtained at the special meeting between the Board and the Project Team in November, and at the public outreach session in December.

Revised Site Recommendations

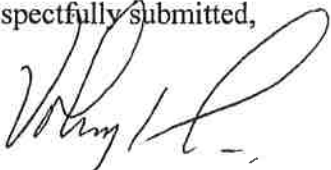
1. The new bridge abutment should be retracted westward toward the Freedom Lane tunnel underpass, to prevent further crowding of the immediate street intersection area, and more particularly the direct conflict with Otsego Street that would be caused by a new bridge landing at the north edge of the existing one.

2. Under the current assumption that new bridge spans will increase from the current 200 feet to about 240 feet, center to center, retracting the new landing abutment too far westward would cause the first pier to conflict with the new intersection alignment. Therefore, the new abutment should be retracted only far enough to avoid conflict with Otsego Street and to allow for the following street intersection improvements.
3. The sharply curving, semi-blind intersection of Otsego Street and Union Avenue should be improved to a much wider radius of turn that would align directly with Saint John Street. This would allow longer and more generous turn lanes and greatly improved sight lines.
4. The Water Street intersection should be sufficiently relocated to meet the new Union/Otsego street alignment and to avoid the first new bridge pier.
5. Railroad property under the bridge complex and situated between the two city parks should, by special agreement, be made available for public use and maintained by the City of Havre de Grace to appear as part of the park complex. This area should contain landscaping and walkways, but should have no structures, to allow full access for bridge maintenance.
6. Railroad property under the bridge complex, situated between the proposed Otsego/Union street curvature and the relocated bridge abutment, should likewise be made available for public use and maintained by the City of Havre de Grace as open space with landscaping and walkways, but should include no permanent structures that would interfere with bridge maintenance.
7. The monumental gateway signage that exists under the current bridge should be relocated to a more favorable gateway vantage point, and should include a beautiful and enlarged landscaping feature.
8. The much higher new bridge understructure would result a brighter and more open streetscape, which should be enhanced with ornamental tree plantings wherever possible without blocking sight lines or interfering with bridge maintenance operations.

Recommended Action

The Advisory Board requests that the Mayor and City Council take necessary steps to consolidate these recommendations into a formal communication to the SRRBP project team as soon as possible. The abutment location is an engineering and track alignment issue that must be resolved by the SRRBP team very soon.

Respectfully submitted,



Volney H. Ford



City of Havre de Grace

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Susquehanna River Rail Bridge Project Advisory Board Of the Mayor and City Council

Advisory Bulletin #12 Rail Commuter Station – First Update January 26, 2015

Background

The Advisory Board met on October 28, 2014, to examine the feasibility and best location of a new rail commuter station to serve Havre de Grace, and issued Advisory Bulletin #6 on November 6, 2014, based on all the information it had at that time. This advisory was based on an assumption that the southeasterly pair of new high-speed tracks would be aligned more in that direction, leaving enough space between that track pair and a northwesterly pair of lower-speed commuter/freight tracks to make room for a northbound station platform.

As feasibility studies and preliminary design with regard to track alignment have been developed further by the SRRBP study team since last October, it appears that the most favorable high-speed track curvature and alignment with the new bridges will not leave sufficient room for a northbound station platform unless the lower-speed pair of freight/commuter tracks are aligned significantly northwestward.

The most recent track alignment information was obtained by the Board at its special meeting with the Project Team in November, and at the public outreach session in December. The recommendations provided herein pertain only to the latest development of track and bridge alignments by the Project Team. The Advisory Board continues to vigorously support all other rail commuter station recommendations provided in Advisory Bulletin #3.

Track Alignment

The most current plan resulting from the Project Team feasibility study favors positioning the new two-track north bridge for freight and commuter operations along the north side of the existing bridge, and the new two-track south bridge for high-speed operations in about the same location as the existing bridge. This alignment will require a northwesterly shift of the present elevated embankment to align with the new north bridge, and will likewise shift the proposed commuter platforms and their emergency/maintenance access ramp more northwesterly.

In order to gain enough separation from the southeasterly pair of high-speed tracks to install a safe northbound boarding platform, the freight/commuter track pair should remain on tangent (straight ahead) from the bridge track alignment for some distance before curving gradually. The high-speed track pair would begin curving southwesterly immediately after landing at the new south bridge. This alignment would require a significant widening of the existing embankment toward the northwest until track curvature can return to the existing roadbed some distance southwest of the station.

Number of Boarding Platforms

The Advisory Board has considered the idea of providing only a single boarding platform at the most northwesterly track, normally used by a southbound commuter train, to eliminate the problem of separating a northbound boarding platform from adjacent high-speed traffic. It would appear feasible to have northbound commuter trains cross over onto the southbound track just before the Havre de Grace station, and remain on that track until entering the Perryville station siding. Northbound commuter trains currently execute a crossing of the same southbound track before they enter the Perryville station siding.

The disadvantage of this scheme is that other southbound traffic would be delayed for a much longer period of time waiting for the northbound commuter train to cross over, enter the Havre de Grace station, board riders, clear the station, and cross the river at a lower speed. It could also prevent freight traffic departing the Susquehanna River line from heading southbound until the commuter train arrives in the Perryville station, assuming additional crossovers are installed in Perryville to facilitate such movements.

The Board has also considered the idea of installing only one southbound boarding platform, bypassing Havre de Grace altogether northbound, and boarding/deboarding riders on the return run from the Perryville terminus of the MARC line. This would be very inconvenient to northbound Havre de Grace riders, and would become unworkable if MARC moves its overnight train parking to a new Perryville facility, or extends commuter service to Elkton and beyond.

The Board has concluded that the installation of standard northbound and southbound boarding platforms in Havre de Grace offers the greatest advantages in rider convenience, destination ridership numbers, movement of other trains, and avoidance of crossover delays.

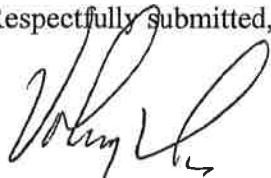
Safe Separation

Safe separation distance between the high-speed track pair and the proposed northbound commuter boarding platform could be reduced by installation of a very strong concrete barrier, similar to a highway Jersey barrier in the platform area. This would also eliminate the effects of high-speed wind blast. Such a barrier could also be incorporated into the design of the northbound boarding platform shelter and means of access from the station below.

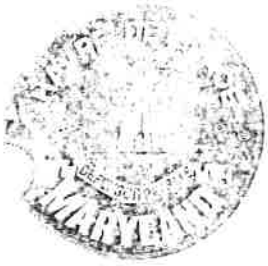
Recommended Action

The Advisory Board requests that the Mayor and City Council take necessary steps to consolidate these recommendations into a formal communication to the SRRBP Project Team as soon as possible, and to emphasize the need to adequately align the lower-speed tracks for a commuter station sometime in the future, if not in conjunction with bridge replacement. Failure to do so can permanently put a future station out of consideration, due to the added cost of elevated roadbed and rail realignment beyond that incurred during the bridge construction and its rail realignment process.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Volney H. Ford', written over a light blue horizontal line.

Volney H. Ford
Chairman



City of Havre de Grace

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Freight Logistics

Susquehanna River Rail Bridge Project
Advisory Board
Of the Mayor and City Council

Advisory Bulletin #13
Safe Pedestrian and Bicycle River Crossing
January 28, 2015

Background

The Advisory Board met on December 4, 2014 and again on January 15 and 27, 2015 to engage in a comprehensive study of the various ways to effect a safe pedestrian and bicycle crossing of the Susquehanna River. This study was undertaken at the request of the Mayor and City Council of Havre de Grace as a result of recent proposals and other efforts to incorporate such a crossing into the design of the proposed Amtrak rail bridge replacement.

The Board expanded this study to include eleven potential ways of conducting pedestrians and bicyclists across the river in a timely, dependable and reliable manner, with special emphasis on closing the Susquehanna River "gap" in existing regional and East Coast Greenway trail systems, as well as connecting components of the Lower Susquehanna Heritage Greenway trail system. The eleven crossing options that were studied all include bicyclists and are captioned:

1. Convert the Existing Amtrak Rail Bridge to Pedestrian Use
2. Incorporate a Pedestrian Walkway into the Proposed Amtrak Rail Bridge
3. Install an Independent Pedestrian Bridge alongside the Proposed Amtrak Rail Bridge
4. Install an Independent Pedestrian Bridge on the Line of Abandoned Piers beyond Craig Park
5. Attach a Pedestrian Bridge to the Route 40 Hatem Bridge
6. Install an Independent Pedestrian Bridge across Garrett Island
7. Attach a Pedestrian Bridge to the CSX Rail Bridge
8. Attach a Pedestrian Bridge to the I-95 Tydings Bridge
9. Install an Independent Bridge at Susquehanna State Park
10. Establish a Regularly Scheduled Water Taxi System
11. Establish a Land-Based Shuttle System

The Board identified a wide range of issues and concerns that would likely be associated with this collective list of crossing options, and examined each issue in great detail. These issues were then applied to each crossing option to determine advantages, disadvantages, fatal flaws and other practical effects that should reasonably be expected. Each of these issues and concerns are explained in detail in Attachment A. The Board did not attempt to estimate project costs or to give weight to its recommendations based on actual cost comparisons.

Although several pedestrian crossing studies have been produced within the past decade or two by several interests, the Board found them to be lacking in detail as to why a particular option was not feasible or not possible, other than to mention existing statutes and public policy statements or to declare overall structure to be unsuitable for the purpose. These may be valid conclusions in the broad sense, but the Board sensed that the general public, special interest groups, and local officials would need to know in much greater detail why one option is truly feasible and the other is not. A detailed analysis of every crossing option under consideration in this advisory bulletin is provided in Attachment B.

Past crossing studies did not include as many crossing options as provided here, and were not timed to foresee the impact and potential opportunities associated with the Amtrak rail bridge replacement project. It is hoped that this study and analysis will be of great value in reducing future discussions and initiatives to practical and feasible river crossings.

River Crossing Recommendations

The Advisory Board has determined that "Option #9 – Install an Independent Bridge at Susquehanna State Park" best meets the primary purpose of a pedestrian and bicycle crossing, while preserving public safety and security, providing an excellent crossing experience, and efficiently connecting with the existing lower Susquehanna River trail systems. There appear to be no significant physical barriers or other difficult circumstances to overcome with regard to this option.

The Board prefers "Option #3 – Install an Independent Pedestrian Bridge alongside the Proposed Amtrak Rail Bridge" as its second choice, provided that the enormous cost issue can be overcome. This option may be more convenient to current routing of the East Coast Greenway, could offer greater use and enjoyment opportunities by the general public, is safer than all remaining bridge options, and would be an economic and tourism driver for Havre de Grace and Perryville.

The Board sees "Option #10 – Establish a Regularly Scheduled Water Taxi System" as the third best option. Even though it provides a very different crossing experience and would involve delays for hikers and bicyclists, this very safe option would offer tourism opportunities and local cruise services not available under any other option. Capital and operational costs are the main drawback, and would require a large public subsidy to remain viable.

The fourth best option would be “Option #6 – Install an Independent Pedestrian Bridge across Garrett Island”. As with the other two independent bridge options, this provides a good crossing experience without exposure to transportation dangers or homeland security issues. The location would be nearly as favorable as Option #2, and the bridge would have a significant impact on tourism in Havre de Grace and Perryville. Its very long bridge and approach length, along with personal security concerns, make this somewhat less feasible than the first three options listed above.

The fifth choice of the Board, “Option #7 – Attach a Pedestrian Bridge to the CSX Rail Bridge”, is much less feasible and practical than the first four choices, due to the significant public safety, homeland security, and liability issues associated with it. If these issues could be mitigated to every possible extent this would be a very efficient crossing in terms of capital cost, overall accessibility and long-term maintenance. It would also offer a fairly impressive and occasionally very exciting crossing experience.

Five of the remaining six options were found to be entirely impractical or unfeasible, with several having fatal flaws that render them nearly impossible. Those are not recommended for further consideration. The last option, “Option #11 – Establish a Land-Based Shuttle System”, is entirely feasible and much less expensive than a water taxi operation, but would be little more than an inter-community public bus service. This option could serve as an interim solution to the need for a crossing.

Recommended Action

The Advisory Board requests that the Mayor and City Council take necessary steps to consolidate these or similar recommendations into a formal communication to the SRRBP Project Team and to all parties, agencies, and stakeholders associated with a pedestrian/bicycle trail crossing as soon as possible.

Respectfully submitted,



Volney H. Ford
Chairman

Attachment A In-depth Presentation of Safe Crossing Issues
Attachment B In-depth Analysis of Safe Crossing Options

Susquehanna River Rail Bridge Crossing Advisory Board
Advisory Bulletin #13
Safe Pedestrian and Bicycle River Crossing

Attachment A
In-depth Presentation of Safe Crossing Issues

Overview

An in-depth study and analysis of a safe, practical, and feasible means of conducting pedestrians and bicyclists across the lower Susquehanna River requires an examination of all contributing factors from two parallel points of view. First, one must consider the public safety, public accessibility, and general maintenance issues associated with any particular crossing option. Second, each crossing option must be considered as having unique physical characteristics and constraints that may be significantly or profoundly affected by these same safety, accessibility and maintenance issues.

The following specific issues and concerns were found to impact most of the crossing options, and have formed the basis of opinions and conclusions developed by the Advisory Board with regard to each crossing option discussed in Attachment B. It is hoped that the foregoing discussion of issues will further educate and enlighten the public, elected officials, and the trail-using communities with regard to all issues relating to a safe and practical pedestrian crossing of the Susquehanna River.

Crossing Design

The design of a fixed pedestrian bridge, whether attached to an existing or proposed rail/highway bridge or constructed independently, should be at least twelve feet wide and ideally up to twenty feet in width, to safely accommodate pedestrians, bicyclists, three-wheeled bicycles, kayaks in tow, and lightweight service and emergency vehicles. There should also be enough room for a lightweight service or emergency vehicle to safely pass pedestrians and bicyclists on the bridge.

The design live-load rating of the bridge should be sufficient to support a dense congregation of users, such as a walk-a-thon event, a large standing assembly of people observing an event beyond the bridge, a close pack of marathon runners, or even a large crowd of people fleeing in panic. The minimum height of any type of overhead enclosure system that may be required for safety should be at least ten feet, and preferably twelve feet or more in proportion to walkway width.

ADA Accessibility Requirements

A fixed pedestrian bridge across the Susquehanna River will surely be classified as a public facility and as a pedestrian way, under the Americans with Disabilities Act, with no allowance for special waivers. The current law provides that the entire pedestrian bridge, along with its access points and approaches, must comply with maximum allowable grade requirements and barrier-free conditions, all the way to

ground-level handicap parking spaces at each end. No slope along the entire path of travel can exceed twelve inches of rise in twelve feet of run, and no slope can run more than twenty-five feet in length without a five-foot insertion of level walkway. Putting this into perspective, an ADA-compliant path of travel rising ten feet would require a combination of ramp and level sections extending one-hundred forty feet in length.

Each end of the pedestrian bridge and its ADA-compliant approach walkways would require a public parking lot having paved handicap parking spaces that are located closer to the walkway entry points than other parking spaces serving the bridge. This requirement could become problematic where persons without disability would be able to exit an elevated bridge landing by going immediately down a stairway to a non-ADA-accessible parking area at the base of the abutment, while the handicapped would be obliged to travel a far greater distance to a different accessible parking area.

While ADA accessibility would not be an issue along a nearly level bridge deck and landing area, it would become a significant to severe design challenge at many existing bridge landings, and along potential walkway routes within existing bridge structure that encounter sudden vertical misalignments. Specific accessibility issues will be discussed under crossing options provided in Attachment B.

Bridge Landing Access

The pedestrian bridge, whether attached to another bridge or constructed independently, will require a public parking lot at each end, located as close as practical to the bridge entry point for public safety, emergency response, handicap accessibility, and custodial service. The required number of parking spaces will be determined by the code enforcement authorities having jurisdiction, based on their interpretation of bridge use and occupancy. Parking lots and access lanes or roads will be subject to the usual regulations on paving, landscaping, stormwater management, critical area, and other site requirements.

Each parking lot will require access by a two-way paved road or driveway leading to existing public roads or streets. Some existing bridge landing locations are convenient to nearby public streets and some have no access at all within hundreds of yards or much farther. Many landing locations are severely encumbered with private property, steep slopes and cliffs, railroad/highway operations, and elevated abutments. These conditions will be specifically examined under crossing options provided in Attachment B.

Bridge Carriage

A new pedestrian/bicycle bridge must either be carried independently, or in conjunction with an existing or proposed rail/highway bridge. As recommended above, such a bridge or incorporated walkway should be twelve to twenty feet in width, and would require a very significant live load rating. With the potential of large numbers of people and light emergency vehicles on the bridge, its loading could easily approach that of a two-lane vehicular bridge serving all but heavy trucks.

If incorporated with an existing or proposed rail/highway bridge, there are essentially three ways the pedestrian bridge can be carried: a) extended in cantilever alongside the host bridge, b) on the deck of the host bridge, or c) within or below the understructure of the host bridge. In rare cases it could be carried as an elevated bridge over the existing road/railway, which is not considered feasible with regard to the bridges of this study.

A cantilevered pedestrian bridge causes the host bridge to be eccentrically loaded (much more weight on one side) and greatly leverages that load by virtue of its being extended so far outward from the central structure. Conversely, structural flexure and vibration of the host bridge caused by passage of heavy traffic is greatly magnified at the outer edges of the cantilever. Such conditions could only be mitigated by strengthening the entire cross-structure and counterweighting the opposite side of the host bridge, which in turn would require major upgrading of the entire bridge span structure. In addition, a cantilevered pedestrian deck with its safety enclosure would greatly impede routine bridge inspection and repair, as truck-mounted inspection booms would need to reach over, around, and under the walkway enclosure to get at the host bridge understructure.

A pedestrian bridge located on the existing deck or bearing structure of a host bridge is ideal from a structural perspective, and would unquestionably be the least expensive to construct and maintain, provided such a deckway were available and currently not in use. The primary concerns would be proximity to existing rail/vehicular traffic and the elimination or preemption of an active vehicular lane or railroad track.

Carriage of a pedestrian bridge through or within the existing structure of a host bridge immediately raises concerns about river navigation clearance, structural capacity, conflict with existing structural members, and interference with host bridge maintenance. Even though a central axis of loading could be more or less maintained, individual components of the host bridge structure, including cross-structure and bracing, would require major strengthening and redesign to accept a radically different directional loading imposed by the pedestrian bridge.

A cursory examination of all four existing rail/highway bridges reveals that the primary structure, cross-structure, bracing, and pier configurations have such exceptional variation or are so congested with cross-structure and bracing from one end to the other that it is very difficult, if not impossible, to pass a pedestrian bridge deck cleanly through without abrupt changes in elevation or sudden offsets in the path of travel. Arched-truss spans in particular result in cross-structures that climb and descend at rates that well-exceed ADA ramp limitations.

A pedestrian bridge can be carried under a host bridge by means of suspension cables from the primary structure, provided that sufficient river navigation clearance is maintained, the host bridge structure is upgraded and modified to carry the load, and the pedestrian bridge is strengthened or braced to resist sway. Host bridge modifications to accept this configuration would be extensive and very costly, if at all practical or even possible.

A pedestrian bridge can be carried directly on the host bridge piers without imposing any loads on the host bridge structure, provided that sufficient river navigation clearance can be maintained. The

overriding difficulties with this option are available pier-top bearing area, conflict with host bridge cross-structure at the piers, and uneven pier elevations. Pier-to-pier spans of the pedestrian bridge would in most cases be very long, requiring huge span beams and robust sway-bracing that would be greatly out of proportion to the pedestrian bridge architecture.

Navigational Clearances

The SRRBP Project Team, with U. S. Coast Guard concurrence, is recommending a sixty-foot minimum bridge clearance above mean high tide for the proposed Susquehanna River Rail (Amtrak) Bridge. The Board prefers a sixty-five-foot clearance here, and recommends a minimum twenty-foot clearance above normal river level beyond navigable waters, in the vicinity of Rock Run Mill. This upriver clearance would allow for a maximum flood-stage river level with large debris floating on the surface.

When considering any pier-to-pier, cable-suspended, or host-structure-attached pedestrian bridge option, or an independent pedestrian bridge, the underside must maintain sufficient clearance above water, whether over the main channel of navigation or elsewhere. All bridges upriver of the existing Amtrak bridge currently have higher clearances over the main channels than it does, either due to very high natural landings or by use of through-truss spans. Although some of these span clearances would be reduced by installing a pedestrian bridge directly underneath, in no case should they be lower than the USCG inland waterway standard of sixty-five feet, even though the proposed new Amtrak bridge may be approved for a sixty-foot clearance.

Safety Enclosures

If a new pedestrian/bicycle bridge is constructed as part of a host bridge, or as an independent bridge above navigable waters, public policy and regulations will surely require that the entire elevated walkway be provided with a continuous guard system sufficient to prevent rail/highway objects from striking pedestrians, prevent cyclists from pitching over the side, prevent bridge users from dropping or throwing objects off the bridge, and deter suicide attempts. If the pedestrian pathway is aligned under an existing bridge deck, protection from falling objects and hazardous liquids must also be ensured.

Safety enclosures will vary in design depending on the nature of danger threats and height above ground or water. Any high-elevation walkway can be expected to require guards at least eight feet in height if not enclosed completely over the top. Enclosures may also require very small diameter openings in the guard matrix or fabric to prevent dropping of stones on boaters or extending objects toward adjacent vehicles or trains. It should be noted that the more effective a safety enclosure design is, the more unsightly and tunnel-like it will appear, and the more disappointing the crossing experience will become, especially with regard to panoramic view and photography.

Bridge Movement

Steel bridge structures tend to be very flexible in conditions of high wind and under rapid movement of heavy trucks and trains. With freight traffic, a railroad bridge span is subjected to individual carloads and locomotives of less than one-hundred feet each, passing at speeds of up to sixty miles-per-hour, and weighing between 80,000 and 450,000 pounds each. A typical six-lane highway bridge can routinely experience as many as twelve tractor-trailers and dump trucks at once per span, weighing 50,000 to 80,000 pounds each and moving seventy miles-per-hour.

Depending on where and how a pedestrian bridge is carried by a host bridge, sudden and intense movements of the steel structure can be quite disconcerting and often terrifying to the user. A side-cantilever pedestrian bridge would significantly magnify this problem, being similar to a person sitting at the end of a diving board as another person jumps on it farther back. Steel bridge structure is said to be a “very living thing”, with intentionally designed flexibility and movement that can be quite shocking to the lay person.

Normal expansion and contraction of bridge components, especially at isolation joints between spans, can be a serious danger to unaware bridge users, especially children and bicyclists. We think of such movement as gradual with temperature change, and therefore non-threatening. In reality, some joints and connections can remain “stuck” in one position until tension and compression forces build enough to overcome static friction, then release suddenly and unexpectedly. Movement issues will be further discussed under crossing options provided in Attachment B.

Vehicular Traffic Dangers

Locating a pedestrian and bicycle pathway directly alongside a lane of highway traffic traveling at speeds of 65 to 80 miles-per-hour, even with a concrete Jersey wall barrier in between, offers little protection from road spray, high-speed accidents, break-away loads from truck crashes, and truck flip-overs from high wind. There is also danger to a bridge user who would cross the barrier into a lane of traffic for any reason, even if responding to a vehicular accident. High-speed snow plowing operations can create pathway blockages and can seriously injure a pedestrian on the bridge, even with a strong chain link barrier in place.

Placing a pedestrian bridge in cantilever offers a bit more protection if the walkway elevation is lower than the main bridge deck and if it is heavily protected with an enclosed guard system. There remains little protection from road spray and plow-thrown snow, however. Snow plowing accumulation can overload the cantilevered walkway, block its use for weeks, and damage its guard enclosure system.

Rail Traffic Dangers

A pedestrian walkway system that is located on a railway deck, cantilevered alongside it, or even cantilevered several feet below it is subject to a wide assortment of dangers, particularly at higher speed freight operations and very high speed passenger operations. Train operators seldom have the ability to

react to fast-developing equipment or load failures as they occur, and often do not know they are happening until much damage is done or the train has ground to an emergency stop.

A pedestrian or bicyclist on a host railroad bridge is essentially a person who is much too close to a moving train under any circumstances, whether on land or bridge. Aside from derailment, the greatest dangers to a person standing close to a moving train at significant speed are dragging equipment or shifted carload. A good example of dragging equipment is a broken load chain or load strap, which can whip by unseen, many feet beyond the train car, with fatal results. Chains and shifted loads have been known to tear out several hundred feet of barrier fencing without the train operator being aware of it while happening.

Other proximity dangers include pressure-thrown ballast stones, leaking hazardous materials, thrown snow and ice (most locomotives have plows at the front), car-top breakaways of sheet ice, unsecured or falling train car equipment, and so forth. Most of these dangers cannot be resisted with any certainty by the most robust chain link enclosures, due to the overwhelming dynamic forces of a train in motion. The pedestrian would not be in a reasonably safe environment unless train speeds were drastically limited and sophisticated dragging equipment detectors were installed at both bridge approaches.

Although derailments are significantly controlled (kept within rail alignment) on bridges by a pair of guard rails within the track rails, cars can separate and tip over at speed, sometimes causing open loads to break loose, tank cars to be punctured, and open hopper cars to spill hundreds of tons. Such accidents occur quickly and dramatically, with so much noise and confusion, and with so many transferred impacts that a bridge pedestrian often cannot decide which way to flee until it is too late. Hazardous cargo poses a special danger in these situations, as wind direction, deadly chemicals, and intense fire or explosions become factors, and the pedestrian is left with only two long and narrow directions in which to flee the scene.

Very high speed trains and electrified railways present an additional set of dangers. Trains passing close by at speeds of 120-150 miles-per-hour create a "bow wave" and a terminal suction that can throw a pedestrian or bicyclist to the ground. Airborne objects, such as ballast stones and simple debris can produce serious injuries unless a nearly solid barrier fence is installed. Overhead electrification, which includes catenary and high transmission lines, carry very high voltages that can "leap" a significant distance to a grounding source without direct contact. Live catenary has been known to break and dangle without shutting down the system. A full metal grounded enclosure, extending well above the head of a bicyclist, would be necessary to protect bridge users from potential electrocution.

Personal Security

In addition to the many traffic dangers described above, the bridge user is exposed to personal dangers associated with two features of a pedestrian crossing of the Susquehanna River. First and foremost is the sheer length of the crossing which, taking into account landing distance to a parking area at each

end, would be about a mile. Second, a high or fully-enclosed safety guard system, even if made with open-weave chain link fabric, is nearly impossible to see through at a shallow angle, such as from the shoreline.

In the event a user is accosted or attacked by another person some distance out on the span, the victim simply cannot be seen or heard from shore, especially when vehicular or rail traffic is nearby. The adage "safety in numbers" would certainly apply during periods of significant bridge use; however, there would be many times when only one or two users are present, and the bridge will often be vacant. When accosted, the unfortunate user can only flee to the closest landing, and the perpetrator can safely exit the other end, particularly on a bicycle, before the situation is known to others and/or authorities can respond.

Proximity of a pedestrian/bicycle bridge to urban areas offers convenience of access and increases the number of potential users, but it also tends to increase temptation, convenience and opportunity for unlawful persons, especially when a troubled neighborhood area is within easy walking distance. Personal security and fear of attack have become major issues in urban settings where much shorter pedestrian overpasses and tunnels exist. Well-placed and concealed security cameras with full-time monitoring should be installed and will help in many ways, but time and distance remains a critical disadvantage.

Personal Emergencies

Emergencies resulting from foul play, accidents or illness present the same problems of plea for aid and awareness by others, again due to bridge length and sight restriction. A person in real distress is usually incapable of moving off the bridge, and often incapable of shouting for help, having no other option but to hope for another person to appear on the scene. Factors that help mitigate such situations on a mile-long bridge are frequency and numbers of users, openness of the guard system, cell phones, security cameras, and perhaps a system of emergency telephones.

Emergency response measures would need to be specially tailored and well-practiced for the unusual characteristics of a mile-long pedestrian bridge, especially if it is not readily accessible from an adjacent vehicular lane of travel. Emergency response teams serving both ends of the bridge would require the ability to quickly bring in a narrow and lightweight treatment/transport vehicle, as well as other service vehicles to handle multiple emergencies. Protocols would need to be established as to first responder procedures in advance of special vehicle arrivals, when time and distance factors are taken into account. It should be noted that bridge superstructures, overhead electrification, pedestrian guard enclosures and tricky wind conditions will normally rule out helicopter rescue directly from a bridge.

Emergency and Panic Egress

All modern structures subject to human use and occupancy are designed to provide for emergency and panic egress (escape) as safely as possible. The goal is to move persons to an area of refuge, usually the unrestricted outdoors, in an orderly manner with as little panic as possible. A mile-long pedestrian

bridge, mostly or fully enclosed with an unbreakable guard system, and with only two narrow paths of travel as much as a half-mile each in length, can be a disaster in the making and grossly exceeds current life safety standards for safe and efficient egress.

Although highly mobile persons can usually escape a dangerous scene created at any one point along the bridge such as a stationary rail car on fire, serious problems can suddenly develop with an increase of occupancy or a more imminent danger. Typical worst-case scenarios may begin with a throng of runners in a marathon event, or a large and long crowd of people watching a fireworks display. In the face of an actual or perceived calamity, such as a cargo fire, a sudden train derailment, a terrorist bomb, or even a loaded barge striking a pier, the crowd may panic and trample many to death or individually fail to escape quickly enough, resulting in a much greater disaster than from the underlying cause.

It is the very length, narrowness, strong enclosure system, and proximity of transportation dangers inherent with most Susquehanna River crossing options that exponentially increases the chances of a panic egress. Conversely, by lowering and widening a pedestrian bridge, moving it well away from transportation bridges, decreasing bridge length or dividing it into two or more bridges, avoiding full enclosure systems, and locating it beyond sight of spectator events, the chances of a panic egress are virtually eliminated.

Vandalism and Graffiti

Anyone who has had the opportunity to walk across a short pedestrian bridge or through a pedestrian tunnel that is not closely supervised by remote cameras or facility staff will see plenty of graffiti, vandalism and general abuse, especially in urban areas. Such disfigurement seems to be much more pronounced where the perpetrator can work largely unseen, where locations tend to be more dramatic, and where surfaces are more suitable for spray art. Decking and solid guard panels would be most prone to such disfigurement. Widespread graffiti and vandalism increases concern for public safety and can have a significant negative impact on bridge use.

Vista Quality

The greatest benefit of a pedestrian/bicycle bridge across the lower Susquehanna River, besides being a way to cross the river, is the beautiful vista and dramatic viewing platform that it would provide. Unfortunately, the vista quality and viewing or photographic opportunities would be compromised to a disappointing degree by higher safety guards and barriers usually required along any bridge that is at a high elevation. Where pedestrian bridge is attached to a host bridge, the view would be further blocked by the host bridge itself, or its understructure. In many cases there would be no point in using the bridge except to get across. Vista quality should therefore be a major factor in selecting an appropriate crossing and in designing a guard system.

Homeland Security

Since the tragic events of September 11, 2001, both rail bridges and both highway bridges below the Conowingo Dam have been identified as strategic assets by the Department of Homeland Security and have been placed under continuous observation due to their vulnerability to potential sabotage. The partial or total loss of any one of these bridges would have a profound impact on regional transportation, as well as our local economy.

All four existing bridges, as well as the proposed new Amtrak bridge, are steel structures having critical structural members and structural connections that become the "Achilles heel" of the entire structure. This is the nature of all trussed steel bridges and most steel beam spans, which are the types represented by our local bridges. Bridge and demolition experts have long known that placement of a very small amount of powerful explosive in the right place, with the right shaping of the charge, can result in immediate and catastrophic structural failure, especially if the bridge is heavily loaded.

The best measures to prevent such a disastrous occurrence are good surveillance and the prevention of persons from getting anywhere near bridge structure at any time, except when within a fast-moving vehicle. Both of these measures become seriously degraded when a pedestrian bridge is positioned next to, or within critical structure of a host bridge. Not only is the critical structure of the host bridge made much more accessible, but the mere presence of people next to or within the structure renders surveillance identification and reaction time nearly useless.

For instance, the understructure of an open-deck bridge such as the Tydings Bridge is inaccessible from its deck, even to persons on foot outside of their automobiles. The understructure can only be reached by scaling the high piers from the river. Such activity would immediately be deemed suspicious through surveillance, and enough reaction time would be available to initiate a direct response and to stop traffic. Unauthorized persons seen on rail bridges can also trigger an alert long before they reach superstructure or are able to rappel into the substructure.

A bridge trespasser is one who is not supposed to be on or within the bridge under any circumstances and can usually be seen in plenty of time for authorities to take appropriate action. A bridge walkway user is not a trespasser, and would not be assumed to be a threat to the host bridge until he or she were to take some suspicious action at the very last moment, when it would be too late to respond in any meaningful way. Enough high explosive to destroy most or part of a steel bridge can be easily carried in a hiker's backpack. Tool-like objects attached to a hiker could often appear as trail gear. The difference between a typical trail hiker and a similarly equipped saboteur or terrorist is very difficult to determine from any distance, even with the best of surveillance cameras.

Screening guards and panels along the walkway would further disrupt surveillance and conceal sudden sabotage activity, which could include quickly cutting through a chain link guard for direct access to the host bridge structure. The entire pedestrian bridge profile could, in many cases, block the view of a significant portion of host bridge structure from distant camera positions. In summary, good bridge security is all about non-accessibility, surveillance, and sufficient reaction time.

Ownership and Liability Issues

All pedestrian options must operate under some form of ownership, whether exclusively or in association with a host bridge entity. Likewise, general liability must be assumed exclusively, or in association with a host bridge entity and its users. These issues are less complex when the pedestrian bridge itself is owned and maintained by a government agency, even though there will always be some exposure to claims of liability for harm. Liability exposure increases somewhat under ownership by a public corporation, and somewhat further under the ownership of a quasi-public not-for-profit corporation.

Ownership, liability and maintenance issues become more complex under joint use agreements. In such arrangements, liability and maintenance issues are less problematic where the host and parasitic bridges are both owned by agencies at the same level of government. They become more complex when the parasitic bridge is owned by a quasi-governmental entity or by a lower level government agency.

Liability and maintenance issues incur further complexities when the host rail bridge owner/operator is a public corporation with transportation "tenants" that include a private for-profit corporation and a public agency, all having very different modes of operation. The most difficult relationship, with the most amount of potential liability, could occur between a private for-profit host bridge owner/operator and a public or quasi-public owner of the parasitic pedestrian structure.

These various relationships have an impact on determination of liability, quality of maintenance, limitations of maintenance, provisions for public safety, and operational priorities in many different ways, and can be a significant determining factor in the final choice of the most favorable means of crossing the Susquehanna River on foot or bicycle.

Risk of Closure

As demonstrated above, public safety and security can be compromised by any number of adverse circumstances or events, regardless of the most prudent designs and measures put into place. A combination of serious accidents and/or felonious assaults, a terrorist attack, or a single disaster can force public officials to temporarily or permanently close the pedestrian bridge to public use, resulting in a great waste of public funds and loss of the crossing. Choice of the most favorable crossing location should therefore be influenced by its having the lowest risk of long-term closure.

(end)

Susquehanna River Rail Bridge Crossing Advisory Board
Advisory Bulletin #13
Safe Pedestrian and Bicycle River Crossing

Attachment B
In-depth Analysis of Safe Crossing Options

Overview

This analysis was performed by members of the Advisory Board without reliance upon professional engineering or comparative cost studies, and was not particularly influenced by earlier conclusions and recommendations of railroad operators or Maryland Department of Transportation agencies. Each crossing option was considered as having unique physical characteristics and constraints that could be significantly or profoundly affected by safety, ADA accessibility, homeland security, and maintenance issues, as presented and explained in Attachment A.

The Board readily concedes that all crossing options discussed herein are theoretically possible, given enough funding, waiver of statutory requirements, re-engineering of existing structures, and compromise of public safety. The purpose of this analysis is to show which options are grossly impractical (not possible in any reasonable sense), which are possible with significant compromise if issues, and which can be considered more or less practical.

Two crossing options were ruled out of this analysis due to their fundamental impracticality in serving the needs of hikers and bicyclists on a reliable basis. These were commuter train service between the Perryville and (proposed) Havre de Grace stations, and an elevated cable car system stretching across the river.

Option #1 – Convert the Existing Amtrak Rail Bridge to Pedestrian Use

The existing two-track deck truss steel bridge with a through-truss swing section, completed in 1905, is planned for replacement in the near future due to its limited traffic capacity, speed restrictions, high cost of maintenance, and impediment to river navigation, among other reasons. With the replacement study phase nearing completion, it has become clear that this bridge must be removed entirely to allow room for new twin bridges having four-tracks and high-speed rail capacity. The proposed new bridges will be raised about thirteen feet at railhead above the main channel to provide for unobstructed river navigation without the need for a movable bridge section.

Although the very strong and nearly level deck surface of the existing bridge, with landings in downtown Perryville and Havre de Grace, would seem ideal for a generous pedestrian crossing with a high load rating, other conditions and constraints render this structure entirely unsuitable, even if it were not directly in the path of the new bridges. Its closer pier spacing and very narrow swing span opening at the main channel would not only remain in place, but would cause greater navigational conflicts with the adjacent new bridge piers having a longer spacing.

The swing span, if left in place for pedestrians, would require operation by the owning authority (not necessarily the railroad) every time a tall boat needs to pass through, which is a difficult and expensive process, and which would defeat the purpose of elevating the new bridges. In addition, the swing span could not swing open unless the new rail bridges were located far enough away from it to allow horizontal clearance. If the swing span was replaced with an elevated fixed-span connection to accommodate the main channel clearance requirement, such an elevation would require a very long and unattractive ADA-compliant approach ramp from each direction.

In addition, this bridge would continue to be extraordinarily expensive to own and maintain with its advanced age and labor-intensive structural system. Its architecture and dense structural assembly would detract from the architectural grace of the new bridges and seriously clutter the riverscape. Lastly, there is simply not enough space to accommodate three double-track bridge landings in Perryville or Havre de Grace without massive property takings and street disruptions. The Advisory Board believes this option is wholly impractical, if not impossible, under all circumstances surrounding the rail bridge replacement project, and should not be pursued further.

Option #2 – Incorporate a Pedestrian Walkway into the Proposed Amtrak Rail Bridge

Incorporating a pedestrian/bicycle walkway with the necessary twelve to twenty foot width under, between, or alongside the proposed new rail bridges presents numerous design, safety and clearance challenges. The new bridges are severely constrained in height by the need to maintain at least a sixty-foot river clearance and descend to original track grade to align with the Perryville station and the Harrisburg freight line intersection. With every inch of elevation being critical to this calculation, there is certainly no room to attach a pedestrian crossing underneath either bridge.

Installing a pedestrian bridge between the two new rail bridges, especially if its deck is lowered as much as possible below track level to offer some safety protection and to conceal, or eliminate the need for, an unsightly guard system visible from shore, would seem to offer an excellent and relatively inexpensive structural solution. The two bridges could carry the platform nestled between them, with their side beams acting as solid guards, and a heavy-duty cage “roof” offering some protection from falling objects as well as preventing pedestrians from climbing onto the tracks.

The disadvantages of the center-nestled scheme are the inability to see anything beyond the interior of the walkway and to seek help from or to be seen by people not on the bridge in situations of distress. It would amount to little more than a mile-long tunnel with daylight at the top, and would invite the greatest opportunities for felonious attack, vandalism and graffiti, and would create the least feeling of personal security of any other crossing option. A further concern is the need for the railroad to provide a safe, open catwalk for its workers on the bridge while traffic is running which would ordinarily occupy the center space and allow the bridges to be much closer together.

The fatal flaw in a center-nestled scheme is that it would require spreading the two rail bridges farther apart, which would create an unworkable bridge alignment with regard to the protection of Otsego

Street in Havre de Grace and Rogers Tavern in Perryville, while maintaining proper high-speed rail arc in Havre de Grace and track alignment in Perryville.

Installing a pedestrian bridge along outside edge of either new rail bridge creates a full cantilever situation with all of its attendant motion and vibration problems discussed in Attachment A, and would require some type of an unsightly full-guard system that would destroy the architectural appeal of the new bridge, along with any opportunity for accent lighting along the one side. The user would only be able to see out from, and be seen, along one side of the host bridge.

All three host bridge attachment methods discussed here would require some means of ADA compliant discharge at both ends, which is complicated by the high abutments and close street underpasses. Ramping these discharges to street grade would require an enormous amount of space and distance, and would be a major eyesore at the gateway to downtown Havre de Grace.

Homeland security would not be as much of a concern along this bridge in comparison to the other bridges, due to its proposed solid-beam design (no vulnerable truss connections). All of the other safety concerns and exposures to danger from being very close to freight and high-speed rail operations, discussed in much detail in Appendix A, would apply to each of these bridge attachment methods, leaving the pedestrian at considerable risk of physical harm, no matter how many protective measures are taken.

This crossing option would be the most complex in terms of liability, maintenance issues, and number of parties involved (Amtrak, Norfolk Southern and MARC, as well as the walkway owner). The Advisory Board concludes that this crossing option is untenable for all the reasons provided above and discussed in Appendix A, and therefore should not be pursued further.

Option #3 – Install an Independent Pedestrian Bridge alongside the Proposed Amtrak Rail Bridge

This option, while similar in some respects to Option #2, offers a number of advantages and eliminates a number of safety issues attendant with actual attachment to the new Amtrak bridges. Under this scheme, a third and independent bridge would be constructed alongside the new rail bridges, preferably at the downriver side, incorporating architecture and spans that exactly match the rail bridges to preserve bridge appearance, accent lighting and river clearance.

By isolating this bridge from the other two, homeland security concerns would become significantly reduced issue. There would be no effect on rail and bridge alignments, and all the dangers of proximity to rail operations would also be significantly reduced. There would be fewer joint liability and maintenance issues, as this bridge could be wholly owned and maintained by an entity other than the railroad, even though encroaching on railroad right-of-way and landing on its property. This bridge could also be fitted with side guards as low as four feet to greatly enhance the crossing experience and to allow for spectator events, even though its deck would be some seventy feet above the river. Lowering the side guards would, however, require a compromise of public policy due to bridge height.

Having spans and beam profiles with both rail bridges (although with fewer and thinner beams and a narrower deck), this would be the strongest independent pedestrian bridge among all the options, capable of supporting normal emergency vehicles and light maintenance trucks, and perhaps even heavy firefighting equipment. The feeling of openness and low guards would help to discourage felonious activity and vandalism. There is no question that this option would provide the most spectacular crossing experience with its unobstructed view of the Chesapeake Bay, and would directly connect the Perryville and Havre de Grace downtown areas in the interest of tourism.

To prevent conflict with Rogers tavern in Perryville and Otsego Street in Havre de Grace on the upriver side, the downriver side location is also deemed best for bridge landing opportunities. By being a separate bridge, it can discharge directly at the top of both railroad abutments and gradually slope downward to street level parking areas alongside the railroad embankments. The Havre de Grace landing should only require public property already available and railroad property used by agreement; however, the Perryville landing would require significant use of the Perry Point VA Hospital property as well as railroad property for its slope and parking area.

The overwhelming issue associated with this bridge option is its enormous cost. Although lighter and somewhat narrower than either rail bridge, the long spans and architecturally matching beams would make it at least two-thirds as costly as one of the rail bridges. The Advisory Board concludes that this option provides the greatest overall number of river crossing advantages and a low number of public safety disadvantages, but concedes that cost alone could be its fatal flaw.

Option #4 – Install an Independent Pedestrian Bridge on the Line of Abandoned Piers beyond Craig Park

This option has been in the realm of public discussion for several decades, and on the whole would seem to be a reasonable proposal. All but one or two piers from the bridge that was once there remain in place, and appear to be large enough and spaced closely enough together to carry a pedestrian/ bicycle bridge with structural span efficiency. Unfortunately, those piers are no longer in any condition to support new structure, and would require such a degree of repair and rebuilding as to be economically unfeasible and historically unrecognizable.

The original bridge was carried as a compression load directly on those piers, which were low enough that a movable (swing) span had to be installed at the main channel. A modern fixed-span bridge on the same piers would require vertical columns or pier extensions, reacting in cantilever to resist wind forces, to clear both the main channel and off-channel water, for which the old piers were never designed. Leaving the old piers in place would seriously impede river navigation through the new rail bridge piers located close by. In addition, this bridge would block the view of the imposing new rail bridges and their proposed accent lighting from the most dramatic downriver vantage point.

The Advisory Board considers that this option is entirely unfeasible and should not be pursued further, based on unsuitable piers, river navigation issues, cluttering of the riverscape and cost of pier modification.

Option #5 – Attach a Pedestrian Bridge to the Route 40 Hatem Bridge

The Advisory Board has photographed and studied the existing structure of this bridge from end to end, in the attempt to find some practical way to insert or attach a pedestrian/bicycle bridge of sufficient width to it. There are major physical obstacles to either carriage method, which become the fatal flaws in this scheme, all other concerns of safety, homeland security and maintenance of the host bridge notwithstanding. The one favorable condition is ease of discharge to parking areas at both landings.

It would seem that the most advantageous method would be to pass a pedestrian bridge through the central understructure, keeping it high enough to maintain river clearance (both channels of this bridge now have an eighty-seven foot clearance). Unfortunately, this is nearly impossible because the cross-structure of this bridge and most of its piers change elevation rapidly and block the path of travel due to its inconsistent support and bracing configurations. The abrupt vertical changes in the pathway would prevent bicycle use and ADA accessibility, even requiring stairways in some places.

A side cantilever arrangement would result in eccentric (unbalanced) structural loading of the host bridge, shaking from traffic, and overloading beyond its current structural capacity, all of which are explained in detail in Attachment A. Since its original construction in 1939, the bridge has been upgraded many times to its practical loading limits, including the addition of concrete Jersey walls which are themselves extended in cantilever beyond the main structure. The side cantilever walkway would also meet a major barrier at each main “camelback truss” support pier of the superstructure, which extends out about eight feet beyond the bridge deck.

Both methods of attachment would result in additional loading of the entire bridge system that would require extensive reinforcement of most very complex structure above and below the roadway, at an expense that would easily exceed the cost of an independent pedestrian bridge. Every one of the safety, homeland security, and bridge maintenance issues related to a vehicular bridge attachment, as described in Attachment A, would apply in this case. The Advisory Board concludes that this crossing option is not practical or feasible in any configuration, and should not be pursued further.

Option #6 – Install an Independent Pedestrian Bridge across Garrett Island

Garrett Island is an interesting location for a pedestrian/bicycle bridge due to its proximity to both municipalities and its changing scenery from river to dense woodland and back to river. A fairly high ancient volcanic mount exists near the west side of the island, about halfway between the Hatem and CSX bridges, which would provide a very convenient and handicap-accessible way to descend from bridge height to nature trails on the island if the bridge touched upon peak.

An independent bridge at this location, with an approach ramp climbing the hillside to the west of the North Park lagoon to a river clearance height of sixty-five feet, crossing to the Garrett Island mount, then running northeast to a landing in Perryville, would become the longest pedestrian crossing among all the options. A different route, crossing Garrett Island near its downriver tip just south of the Hatem

Bridge would offer a significantly shorter crossing and an open viewscape downriver, but would leave the island inaccessible and would require very large and unsightly ramp structures at both landings.

As with the option of an independent pedestrian bridge next to the new Amtrak bridge, the deck could be left open and unobstructed by high guards or caging even though it is also a high bridge and would require a compromise of public policy with regard to safety. Both landings of a bridge at this location would be very close to the trail system and relatively convenient to visitors of both municipalities. Most of the public safety and personal security concerns provided in Attachment A would apply at this location, however, since it is close to urban areas and since much of its crossing would be concealed by woodlands.

It must also be noted that Garrett Island is now part of a National Wildlife Refuge, and public access and use are currently prohibited without special permit. The Advisory Board considers this crossing option to be feasible, but relatively costly due to its length. The most significant concern would be personal safety and security along its overland hidden section, which would be longer than either of its river crossings, particularly if it is connected to an unsupervised and well-concealed natural area on the island.

Option #7 – Attach a Pedestrian Bridge to the CSX Rail Bridge

The CSX rail bridge, more than one hundred years old, has such a crowded and ever-changing understructure that carriage of a pedestrian bridge through the structure is not physically possible. On the other hand, bridge deck conditions are structurally ideal for a narrower (twelve foot width) pedestrian/bicycle pathway, because the railroad has long used only the upriver side of the original two-track bridge for single-train operation. The downriver side has no tracks or decking crossbeams, but the necessary longitudinal structure remains in place.

Both ends of this bridge land within the municipalities and are fairly close to streets and to the trail system, with opportunity for public parking. Its Garrett Island crossing offers potential long-ramp access to the island, via the volcanic mount, for hikers. A shared use arrangement similar to this exists in downtown Harpers Ferry, West Virginia, where a pedestrian/bicycle path utilizes one side of a much shorter and lower CSX bridge with single-track railroad operation, with trains passing through under a speed restriction.

Although this crossing option is quite feasible and would by far be the least expensive to implement and maintain, many of the safety, homeland security, and personal security issues discussed in Attachment A would definitely apply here. The user would be very closely exposed to freight trains operating more frequently and at much higher speeds than those on the Amtrak bridge. This bridge is also very old (1907) and may require replacement in the not-too-distant future.

The east channel section of this bridge, having a through-truss superstructure, would be much more accessible and vulnerable to sabotage. The entire bridge would be subjected to heavy vibration and shaking as trains rumble past, giving much pause to potential users. And finally, ownership,

maintenance and liability issues could be quite difficult to resolve. The Advisory Board concludes that this crossing option is technically viable with much compromise of public safety and homeland security concerns, and a successful negotiation with the CSX Corporation.

Option #8 – Attach a Pedestrian Bridge to the I-95 Tydings Bridge

The structure of this bridge has also been photographed and studied from end to end by the Advisory Board, and found to be more consistent and efficient in its use of steel structure and bracing techniques than that of the Hatem Bridge, built 24 years earlier. In other words, the understructure of the Tydings Bridge maintains the same design configuration across the entire river gorge, which would allow a pedestrian bridge to more easily follow a straight and uniform path through it, if other constraints and impediments did not exist.

The design efficiency of the understructure of this bridge is the primary reason it could never support the additional load of a pedestrian bridge within its structural members. Every main chord, web, brace and cross-beam of the truss system is designed only for a particular directional load. The top chords alone, acting in intricate concert with all other members of the truss system, are the only members designed for the direct or indirect loading of a bridge deck.

The concrete piers of this bridge are very tall and perfectly aligned to carry a pedestrian bridge independent of the main bridge structure, leaving plenty of river navigation clearance. Unfortunately, the bottom cross-brace of the host bridge blocks the way at each pier. More significantly, a pedestrian bridge located at the pier cross-head would offer the perfect opportunity for unobservable access and sabotage at a most critical point in the host bridge structure. In addition, the very long spans between piers would require an enormous amount of new structure just to carry the pedestrian bridge over such a distance.

As with the Hatem Bridge, cantilevering the road deck presents a number of structural, maintenance and safety issues discussed in detail in Attachment A. The difference with this bridge is that both of its outer lanes of travel are already cantilevered entirely, with the additional load of tall concrete Jersey walls along the outer edges. The addition of a pedestrian bridge beyond the existing deck on one side would require longer crossbeams and counterbalancing on the opposite side, adding excessive weight to the overall structure for which it was never designed.

The Advisory Board concludes that structural issues alone are the fatal flaw of this crossing option, followed by most of the homeland security, safety and maintenance issues associated with a vehicular host bridge, and therefore recommends that it not be pursued further. This crossing option is also by far the most difficult to access at its landings, with sheer bluffs and no secondary roads in the vicinity of either landing. The trail system along both sides of the river would also be inaccessible without detouring far inland.

Option #9 – Install an Independent Bridge at Susquehanna State Park

The Susquehanna State Park area differs from that of all other bridge location options in a fundamental way. A pedestrian/bicycle bridge in this area can be lowered much closer to the water surface, being far enough upriver to avoid navigable waters. The Advisory Board recommends a minimum clearance of only twenty feet at this location, which it believes is sufficient to clear the river at maximum flood stage carrying large surface debris.

A much lower bridge has the obvious advantage of being easier and less costly to access at its landings, which would connect with the existing trail system in the State Park at its Harford County landing and beyond the north end of Port Deposit at its Cecil County landing. It would be adjacent to public roads at both landings and costly ramp systems would not be necessary. A gradual increase in grade approaching the bridge, oriented parallel to the river, should be sufficient to gain the necessary elevation to cross.

Other significant advantages include side guards that can be safely lowered to four feet, a pier system that would not be subjected to as much wind force, piers that can be spaced more closely together reducing span structural cost and span beam depth, and the opportunity to access Robert Island. This bridge should be expanded to the maximum recommended width of twenty feet, and should be designed for fishing opportunities and for crossing with dismounted horses.

Robert Island, which belongs to the utility company that owns the Conowingo Dam complex, could be an important component of this crossing option. If a pedestrian bridge crossed to the southeastern end of the island from Rock Run Mill, it could not continue directly across to Port Deposit due to the closeness of Route 222 to the river edge, leaving no available landing or parking area. The only sufficient landing area on the Cecil County side is farther up Route 222, near the Canal Road intersection and opposite the northwestern (upstream) tip of Robert Island. If two separate bridges were built to accommodate these offset crossing locations, an ADA compliant walkway would be required along most of the length of Robert Island to connect the two bridges. The terrain on this island is quite difficult and uneven, with a solid exposed granite spine and several lateral crevasses that would require bridging.

A more viable option would be to locate the Harford County bridge landing just above the mouth of Deer Creek, where the crossing to Robert Island is shortest in length, and where it would directly align with the other bridge over to Cecil County, in the location proposed above. This bridge would be accessed by first crossing the former Deer Creek railroad bridge, then advancing several hundred feet up the existing trail to the new bridgehead. A Robert Island landing, crossing only its northwestern tip, would extend only short distance, and could be eliminated by installing a continuous bridge across the island. Access from this bridge to the island could be restricted to primitive trail hiking to avoid ADA accessibility issues.

The physical disadvantages of a Deer Creek area crossing are mostly related to maintenance and ADA access. The existing trail that follows the old railroad bed is not readily accessible from the nearby road, and is in no condition to accommodate persons with mobility issues. The existing trail, from a parking lot to new bridgehead, would need to be widened and paved, with a short bridge installed to span the

old canal bed between it and the road. A sizable paved parking lot would be required close the Deer Creek trail bridge, and the bridge deck would need to be widened and reinforced to matching specifications of the river crossing bridge(s). These improvements, however, would be less costly than a connecting pathway and crevasse bridging of the same specifications up the length of Robert Island.

The upriver location of either Susquehanna State Park crossing option, being well away from walking distance of urban neighborhoods, would incur far less exposure to vandalism, graffiti, assaults and other undesirable activity. The Susquehanna State Park is host to a large number of hikers, bicyclists, fishermen, picnickers, nature lovers and wildlife observers from dawn to dusk on any given day, which would enhance the feeling of personal safety and security. Almost all categories of Park visitors would be likely to make full use of the pedestrian bridge, providing safety in numbers and immediate assistance to those in need.

A direct crossing from the Deer Creek area in Harford County to the Canal Road area in Cecil County, passing over the upriver tip of Robert Island, would be significantly shorter than any other pedestrian bridge crossing option considered by the Advisory Board. It would also be the least expensive bridge option, when taking into account such associated costs as access ramps and host bridge reinforcement, with the exception of the CSX rail bridge option. Ownership and maintenance of this bridge could logically be incorporated into the Susquehanna State Park system, including its landing area in Cecil County.

General disadvantages of this crossing option are that its remoteness from Perryville and Havre de Grace would have little positive effect there on local tourism. The bridge would not be available as an event observation platform and it would be less likely to host marathons and walk-a-thons. In addition, it would require a much longer time for emergency responders to reach the Harford County landing area.

The Advisory Board recommends this crossing option, more specifically at the Deer Creek landing, as the most practical and feasible of any that it has studied, when all factors outlined in Attachment A are taken into full consideration. The Board is convinced that this option best meets the primary purpose of a pedestrian and bicycle river crossing, whether by bridge, water taxi or land shuttle, by being available and accessible at all times for trail hikers and bicyclists. It also offers the highest degree of personal safety and security, coupled with a beautiful vista and enjoyable crossing experience.

Option #10 – Establish a Regularly Scheduled Water Taxi System

- A regularly scheduled water taxi system, operating in a circuit between Havre de Grace, Port Deposit and Perryville, has been a vision within these communities for a number of years, but has never been formally planned or implemented. The Advisory Board believes that such a system could serve hikers and bicyclists on a dependable basis if operated from dawn to dusk, seven days a week, on an arrival/departure schedule that is posted at each landing and on a dedicated internet website.

A system such as this would require at least two dedicated vessels large enough to carry at least thirty passengers, twenty bicycles, and several kayaks. It would also require direct roll-on/roll-off capability, full handicap accessibility, restrooms, an enclosed weather cabin, and seating for all passengers. On weekends and holidays, both vessels could be put into operation to meet increased demand and shorten wait times at the landings.

River crossing ridership should be free of charge; however, these vessels could be put into revenue service for summer night cruises, special events and, special destinations. One of the vessels should always be available for revenue services except when both would be required during the day on peak demand dates. The water taxi system would require a large public subsidy to be viable, whether owned and operated by a public agency or through commercial contract.

The advantages of such a system in comparison to bridge options are lower capital cost, public supervision at all times by the boat crew, alternative uses and revenue opportunities, very enjoyable boating experience, and a safe environment. Many local riders and destination tourists would use the system just to be on the water and to visit the other towns for dining and shopping. This is the only crossing option that could truly appeal to people of all ages and levels of mobility.

The disadvantages of this system are its high operating cost, wait times at the landings, inconvenience to hikers and bicyclists, and difficulty in accommodating large groups. This system would also be subject to cessation in winter and unpredictable closures due to bad weather or unsafe river conditions. This option would obviously not accommodate marathons or walk-a-thons, and would offer limited capacity for observing events from offshore.

The Advisory Board concludes that this is a safe and feasible crossing option, but is not as practical or convenient for pedestrians, hikers and bicyclists who wish to cross the river at any time of day, any day of the year, with no wait involved. The Board is also very concerned about the level of subsidy that would be required to operate and maintain the vessels, and compensate the crews, often at times or route segments with no riders aboard.

Option #11 – Establish a Land-Based Shuttle System

This option is somewhat similar to the concept of a water taxi system, the difference being that special buses would run a regularly scheduled route between the same three communities, with only one or two stops in each. These buses would be configured to quickly load bicycles and kayaks, perhaps as a combination bus/truck vehicle, or an airport-type shuttle pulling a low trailer, and would be ADA accessible.

Transit time between communities would be about the same for both options. The Board estimates that it would take about one hour for a shuttle or water taxi to complete the three-town triangular route. Twenty minutes or so would be required to complete a round trip just between Perryville and Havre de Grace, which could be offered on busier days when a second shuttle or water taxi is put into service.

The advantages of a shuttle system in comparison to a water taxi are its far lower capital and operating costs, year-round operational capability and not being affected by river conditions. In comparison to all crossing options, it offers very little exposure to the elements (if bus stop shelters are provided), the best emergency response conditions, and a high level of personal safety and security. Issues that would need further study are whether to charge a fare and how to prevent locals who have no recreational or tourism purpose from overwhelming the system.

The disadvantages of this option are wait times at the stops, inconvenience to hikers and bicyclists, limitation to small groups, and inability to accommodate marathons and walk-a-thons. Shuttle vehicles would have few alternative uses that could generate revenue and would offer no particular river crossing experience. This is the only option that would not become an attraction in its own right, beyond the primary purpose of proving a way across the river.

The Advisory Board believes that this option would incur the lowest combined capital and operating cost of all options, and would require a much lower public subsidy than the water taxi system. On the other hand, the crossing experience would not exist, and public would have no interest in using this system unless they needed to get across the river with no other means of available transportation. This system would not be particularly attractive to destination tourists who wish to shop and dine in the other two communities. For these reasons the Board concludes that this option is feasible and practical as a simple means of transportation, and could be used for interim service until one of the other crossing options becomes a reality.

(end)



City of Havre de Grace

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Susquehanna River Rail Bridge Project Advisory Board Of the Mayor and City Council

Advisory Bulletin #14 Union Avenue and Otsego Street Intersection March 16, 2015

Background

The Advisory Board met on February 12 and March 12, 2015 to study the intersection of Union Avenue and Otsego Street, and the closely impacted intersections of Warren, Water, and Saint John Streets. This study was conducted as a logical extension of Advisory Bulletins #3 and #11, Bridge Abutment Area; Advisory Bulletins #6 and #12, Rail Commuter Station; and the following Advisory Bulletin #15, Bridge Historical Preservation and Display. All are directly related to the redesign these street intersections.

Objectives

Intersection redesign and improvement is entirely predicated upon retraction of the proposed new rail bridge abutment, as far westward from the existing intersection curve as the first bridge span will allow, without constraining Water Street with its first pier location. The purposes of bridge abutment retraction are twofold: It will be necessary to allow a wider abutment for the new northerly low-speed bridge span which would otherwise land in Otsego Street. It will also permit a much safer and more gracefully curving street entrance into the historic downtown area of the City. In consideration of this, the Advisory Board has assumed a new bridge span of 240 feet, from pier to pier, which is somewhat longer than the existing 200-foot spans.

Primary objectives are to provide better and safer intersection control at the Union Avenue/Warren Street crossing, safer traffic flow in and out of Saint John Street (principal gateway to downtown), an enlarged David Craig Park with safer vehicular access, and easier access to Water Street. Improved access to and from the southerly parking areas of the proposed rail commuter station, and significantly greater opportunities for gateway beautification are also important. This advisory puts forth a concept plan that is intended to meet each of these objectives.

Specific Recommendations

The Advisory Board has developed the following specific recommendations to give substance to this plan for purposes of public thought and discussion. This concept plan will be subjected to

far more detailed study and public input, and many other viable options will surely be considered, as the bridge project enters the design and construction phases.

1. Intersection street curvature should begin about fifty feet west of Pearl Street and extend to the existing intersection of Saint John Street.
2. A primary intersection with a traffic signal should be created at the intersection of Union Avenue and Warren Street, which would be used to control all traffic entering and exiting Saint John Street and waterfront parking areas, except via a northbound yield lane.
3. Northbound traffic exiting Saint John Street and waterfront parking areas should proceed through a yield lane at the current location in front of the American Legion building.
4. Lafayette Plaza statuary and flagpoles should be relocated to a large triangular traffic island created at the northeast corner of the new Union/Warren intersection.
5. David Craig Park should be enlarged toward the southwest, and a single entry/exit point should be installed farther northwestward from the Saint John Street yield lane.
6. Water Street should intersect the Otsego/Union curve with much improved sight lines, a wider throat for trailer towing, and ample room for a left-turn lane toward Union Avenue.
7. The Havre de Grace welcome sign should be dismantled, cleaned, and relocated to a small landscaped plaza between the proposed Pearl and Water Street corners, positioned to face directly west up the center of Otsego Street. This location would be well out from under the new bridge structure, and will receive direct sunlight toward afternoon and evening.
8. A continuous left-turn lane should be incorporated throughout the Union/Otsego curve to facilitate safe turns into Water Street, David Craig Park, and the American Legion; and at the Union/Warren intersection.
9. The entire intersection area should be extensively landscaped and maintained as the principle gateway to the historic downtown and waterfront areas.

Recommended Action

The Advisory Board requests that the Mayor and City Council take necessary steps to consolidate this concept plan, along with its recommendations, into a formal communication to the SRRBP Project Team as soon as possible. This is necessary to reinforce our efforts toward relocating the bridge abutment westward and gaining a downtown rail commuter station.

Respectfully submitted,



Volney H. Ford
Chairman

Attachment: Concept Road Alignment Plan



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Susquehanna River Rail Bridge Project Advisory Board Of the Mayor and City Council

Advisory Bulletin #15 Bridge Historical Preservation and Display March 18, 2015

Background

The Advisory Board met on several occasions in November 2014, and in January, February and March of 2015, to discuss the need for historical preservation of specific components of the existing Amtrak rail bridge. It also recognized the need to consecrate the history of both rail bridges that occupied the broader site and were an integral part of the history of Havre de Grace and Perryville. The Board believes that this can best be accomplished by creating a permanent outdoor historical display on public property that is accessible at all times. The display should be presented in such a way that people of all ages can understand and appreciate the historical significance and engineering accomplishments associated with these two bridges.

Historical Artifacts

In previous advisories the Board recommended that the existing Amtrak rail bridge be removed entirely, and that all of its piers and abutments, as well as the piers of the original rail bridge, also be removed entirely. The purpose of that recommendation is to open up the river viewscape, make room for the new bridges, and provide for safer river navigation. The Board recommends that only the abutments of the earlier bridge continue to be preserved, perhaps restoring them more to their original appearance and function.

The Advisory Board believes there are several key features of the existing Amtrak rail bridge that are well worth preservation and permanent display. As a practical matter, each artifact should be kept to a size that would not overwhelm the display area or become too difficult or costly to maintain in the future. Each preserved artifact should be suitable for close public scrutiny, should have no unsafely exposed components, and should be dramatically imposing with a very special story to relate. The overall objective should be to convey the advancement of this type of bridge engineering by the beginning of the twentieth century, and to explain how certain rail bridge components functioned in that era.

A fascinating artifact with educational value would be one side of one lower connection of a deck truss, literally cut out of a span, with its moving parts secured by hidden welds. It would then be carefully cleaned and repainted, and displayed about two feet above a ground-level concrete slab using nearly-concealed support legs. The purpose of this display would be to show the bottom chord rods, tension and compression beams and connecting kingpin up close, with a description of how each part functioned and the critical importance of the entire connection. Attachment A is a photograph of the recommended artifact with cut points shown.

Another artifact that is of keen interest to the Advisory Board is the swing span pier top with its ring and pinion gear assembly, turning casters and adjacent structure. Although the entire swing span is far too massive to preserve and display, the Board thinks that its central mechanism between the rail deck and pier top would suffice to show how a rail swing span operates and how massive its working parts were required to be. If the entire core assembly should prove too large in scale for the display area, then perhaps a half or quarter segment of it could convey the same understanding and interpretation. The entire top layer of granite from the circular pier should be saved and installed at ground level, whether or not the entire circular mechanism could be fitted onto it. See the Attachment B photograph for the current location of this artifact.

A third major artifact of interest is the motor and drive assembly from the control house atop the swing span. The entire house and its contents could be relocated and preserved on land, provided with a means of visitor entry and viewing. Alternatively, the motor and drive mechanism could put on outdoor display within a clear weatherproof container. An interpretive display should describe the span swinging procedure. This artifact is shown in Attachment C.

The Board has also identified two historical plaques that should be saved and put on display. A large dedication plaque mounted into the face of the current westerly abutment should be relocated, along with a large panel of granite blocks to which it is attached, to a nearby ground-level display area. The second, a much older dedication plaque embedded in an original bridge pier near the Perryville shoreline, should likewise be removed along with its adjacent panel of granite blocks and put on ground-level display at a designated site in Perryville.

Display Area Location

The Advisory Board has concluded that David Craig Park, with its proposed expansion, be dedicated to the history of these two bridges and to the display of artifacts, historical photographs, and interpretive signage. The site should be augmented with as much railroad property as can be reserved for this purpose without interfering with future bridge access for maintenance. The beautiful park landscaping that was recently completed through efforts of City staff and workforces should be restored and expanded after completion of the new bridges. The very attractive current theme of this park should be integrated with its proposed use to every extent possible.

This location is most appropriate because it is on relatively high ground and safe from flooding. The expanded park, with some use of adjacent railroad property, should be sufficient to contain the overall display area and provide additional parking spaces. Displays would not be overshadowed by the new bridges at any time of day. This park is within close proximity to downtown pedestrian activity, and is not currently encumbered with other structures, themes or specific uses except fishing. Most importantly, this park is the perfect vantage point from which to visualize the two past bridges spanning the river as one stands at the interpretive displays and sees the historical photographs, many of which were taken from the very same spot.

Display Components

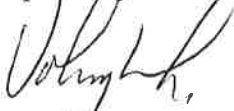
The artifacts recommended above should be placed and oriented on high ground within the park in such a way that they more directly relate to the historical bridge locations and to photographs on display taken from the same angles and perspectives. Display sites must be planned carefully and integrated with a series of current documentary photographs before the existing bridge is removed. The larger displays should also be positioned to draw attention from beyond the immediate park without cluttering the nearby streetscape or its view of the river.

The interpretive displays should be filled with written, photographic, diagrammatic, and artistic components that not only depict the historical bridges as accurately as possible, but tell their complete stories, teach their engineering fundamentals to adults and youngsters alike, and describe how they contributed to rail transportation along the entire east coast of America. This effort should be taken to such a level that the overall park display becomes a tourist destination in its own right, requiring at least two hours to fully explore.

Recommended Action

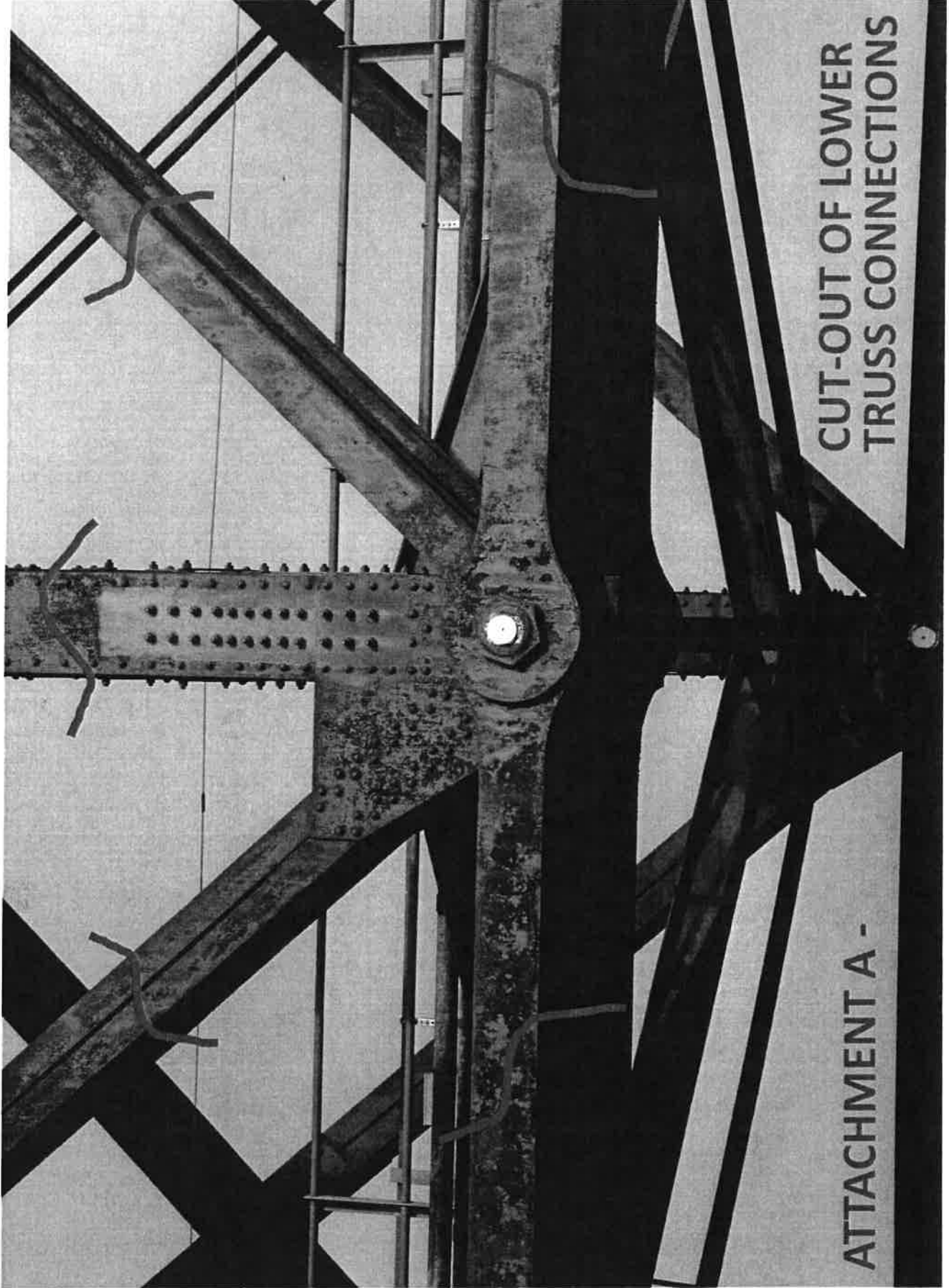
The Advisory Board requests that the Mayor and City Council take necessary steps to consolidate these recommendations into a formal communication to the SRRBP project team, and to all agencies and local organizations having interest in historical preservation related to these bridges, as soon as possible. The Board also recommends that the upper level of David Craig Park be held in reserve for this future purpose and use.

Respectfully submitted,



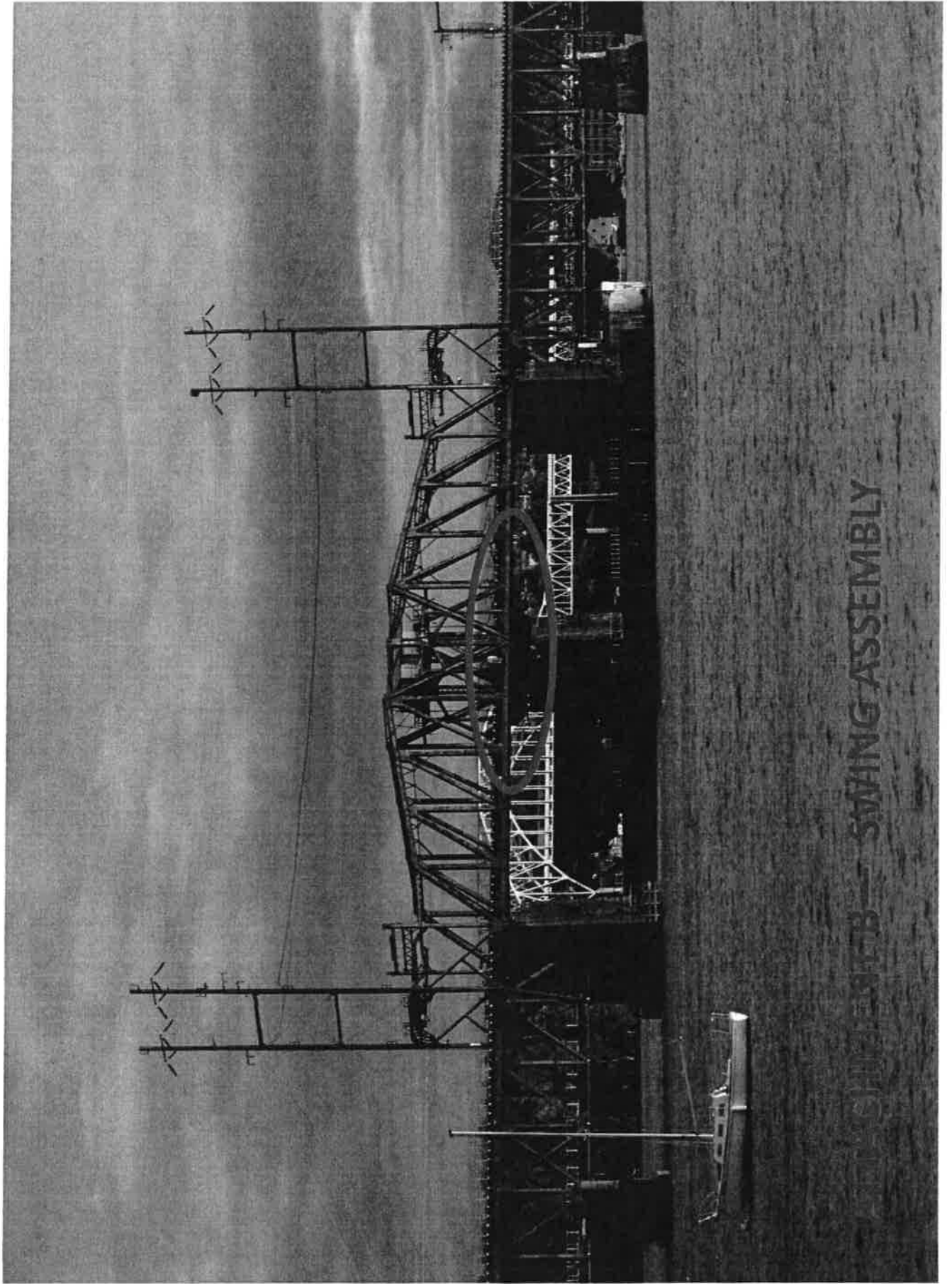
Volney H. Ford
Chairman

Attachments A, B, & C: Artifact location photographs

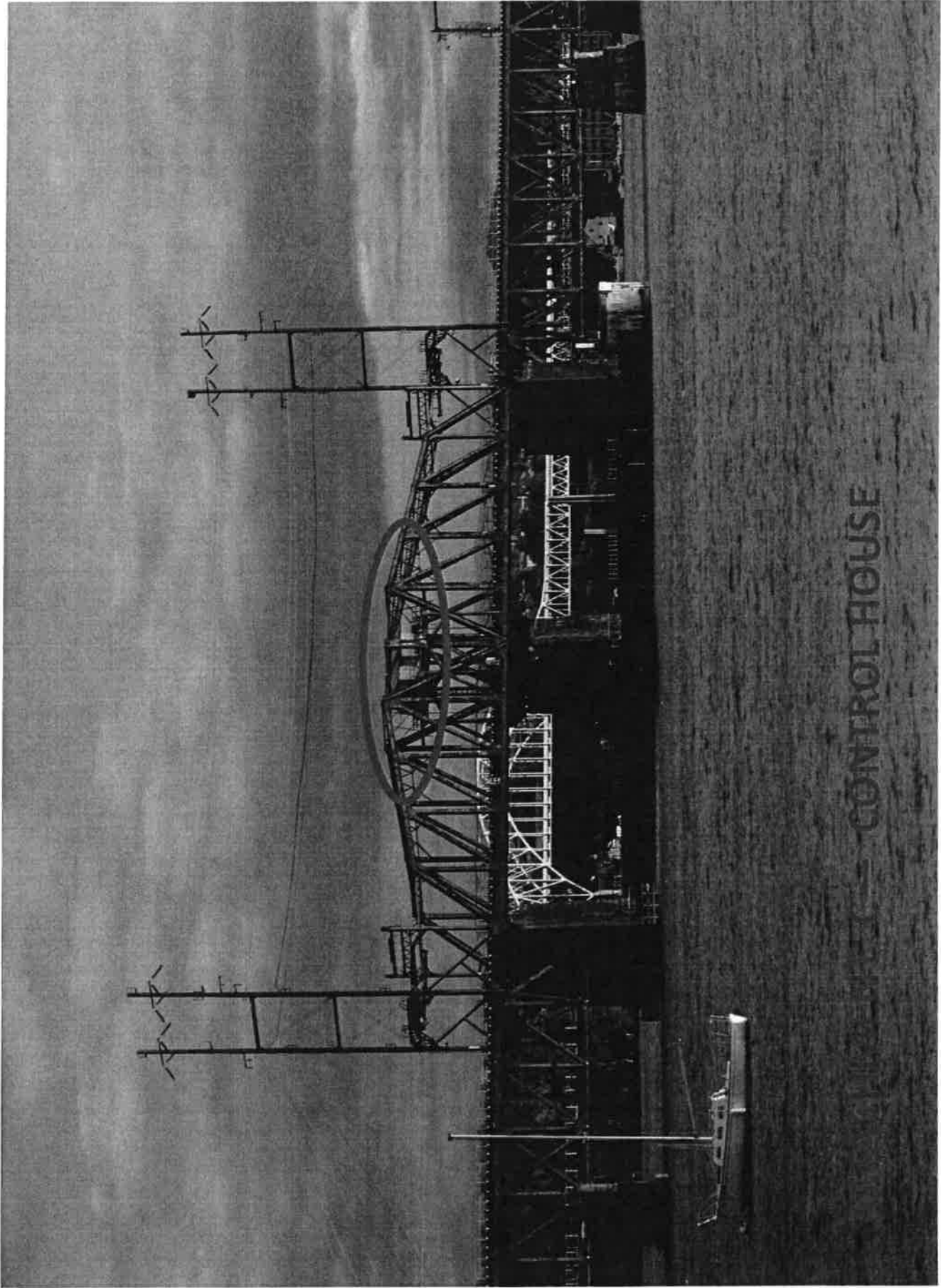


CUT-OUT OF LOWER
TRUSS CONNECTIONS

ATTACHMENT A -



SHIP SWING ASSEMBLY



CONTROL HOUSE



City of Havre de Grace

711 PENNINGTON AVENUE, HAVRE DE GRACE, MARYLAND 21078
WWW.HAVREDEGRACEMD.COM

410-939-1800

Susquehanna River Rail Bridge Project Advisory Board Of the Mayor and City Council

Advisory Bulletin #16 Westerly Right-of-Way and Alignments – First Update March 18, 2015

Background

The Advisory Board met on October 28, 2014 to examine the current and proposed railway right-of-way corridor extending from the bridge abutment area in downtown Havre de Grace to the Lewis Lane overpass. Advisory Bulletin #4 was issued by the Board on October 31, 2014 based on an assumption that the new high-speed bridge of the proposed twin bridges would be installed on the downriver (south) side of the existing bridge, with the lower-speed bridge taking the place of the existing bridge. It was also assumed that the new bridges would be elevated to an extent that would require elevation of trackage along the right-of-way, well past the bridge landing.

As feasibility studies and preliminary design with regard to track elevation and alignment have been further developed by the SRRBP Project Team since last October, it appears that the most favorable track alignments would now place the lower-speed bridge along the upriver (north) side of the existing bridge, with the other new bridge taking its place. It also now appears that little or no raising of track elevation will become necessary west of the new bridge abutment.

It is the current understanding of the Advisory Board that the long high-speed curve of the southeasterly pair of rail lines extending from the bridge to Lewis Lane will require some realignment in that direction to achieve a 150 mph design speed. The Advisory Board recently issued Advisories #6 and #12 advocating the installation of a rail commuter station along Warren Street. If implemented, this would require a significant northwesterly alignment of the lower-speed pair of rail lines to accommodate a more northerly bridge alignment and to provide adequate separation from the high-speed lines at the station platform. Both alignment changes would significantly alter the elevated embankment passing through town and would require retaining walls at certain locations.

Revised Concerns and Recommendations

In accordance with the more current alignment needs that are described above, it will become necessary to widen the southeasterly side of the railway embankment to some degree and to widen the northwesterly side to a significant degree. Both enlargements could encroach slightly upon existing property lines and could significantly reduce available public parking areas for the proposed rail commuter station unless retaining walls are installed between Freedom Lane and Juniata Street. Retaining walls would provide the additional advantages of better security against trespassing, elimination of unsightly chain-link fencing at the embankment bases, and elimination of uncontrolled growth of weeds and trees along the embankments.

It appears that significant shifts in track alignments will almost certainly require modification of the street underpass bridges that remain in place, to the extent that existing abutments would require lateral extension or total replacement. The Advisory Board emphatically recommends that no existing granite abutment, if retained, be further modified from its historical appearance. The abutments are 110 years old and have already been modified several times for bridge deck repositioning, which in turn has resulted in unsightly concrete caps and modification or removal of some granite blocks. The stone abutment and wing wall facings are continuously leaking water and forming ice, black mold, and white salts, resulting in a most unattractive appearance and promoting continual weed growth from the block joints.

Lateral realignment of the outer bridge decks would likely require lateral extension of the abutments. The use of concrete or any material other than matching granite blocks for this purpose should be entirely unacceptable to the City and its residents. As recommended in Advisory Bulletin #4, each of the abutments at retained street underpasses should be entirely rebuilt with materials that will provide an attractive appearance for the next 120 years or more. All other recommendations provided in Advisory Bulletin #4 remain valid and should be incorporated into the overall project.

Recommended Action

The Advisory Board requests that the Mayor and City Council take necessary steps to consolidate these recommendations, along with those of Advisory Bulletin #4, into a formal communication to the SRRBP Project Team as soon as possible

Respectfully submitted,



Volney H. Ford
Chairman



City of Havre de Grace

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410-939-1800

Susquehanna River Rail Bridge Project
Advisory Board
of the
Mayor and City Council of Havre de Grace
for the
Mayor and Town Commission of Perryville

Advisory Bulletin #17
Easterly Right-of-Way and Alignments in Perryville
March 20, 2015

Background

The Advisory Board met on March 12, 2015 to examine the current and proposed rail right-of-way corridor, extending from the bridge abutment area below downtown Perryville to a point just east of the MARC Station, and including the track wye connecting to the Norfolk Southern line to Harrisburg, known locally as the Port Road.

As feasibility studies and preliminary design with regard to track elevation and alignment have been further developed by the SRRBP Project Team since last October, it appears that the most favorable track alignments would now place the lower-speed bridge along the upriver (north) side of the existing bridge, with the other new bridge taking its place. It also now appears that little or no raising of track elevation will become necessary east of the new bridge abutment.

The new bridge alignments, as much as can be understood at this stage of planning, will cause little change and have almost no impact along the south (Perry Point) side of existing trackage. Installation of a lower-speed new bridge along the upriver side of the existing bridge would shift the abutment in that direction accordingly, bringing it closer to the bottom end of Broad Street, directly across from the Rogers Tavern Historical Site.

Recommendations

1. The existing bridge abutment just east of Avenue A should be entirely rebuilt to ensure a consistent architectural appearance, using modern materials that can be expected to maintain a good appearance for the next 120 years or more.

2. The new abutment should be repositioned closer to the river, as may become necessary to ensure equal bridge spans to the relocated Havre de Grace abutment, and to provide more land-based track length for crossovers to the MARC Station and the Port Road wye entrance.
3. The north sidewall of new abutment should be extended eastward to Roundhouse Drive, to better facilitate an off-street parking area along its base for visitors to Rogers Tavern and the Town Dock.
4. The south sidewall of the new abutment should extend a short distance eastward toward the transformer station to facilitate an emergency response and maintenance access ramp leading up to trackside.
5. A fenced enclosure with gates should be installed along a new paved access road and ramp from Avenue A, locating it at least fifty feet eastward of the new abutment to conceal all such fencing from the Rogers Tavern vista.
6. All security fencing and guard railing systems visible from Broad Street should be upgraded as much as possible in appearance, placed far enough from the toe of embankments to allow weed control, and coated black to blend with the landscape. Where possible, the abutment and its side walls should provide security against trespassing in lieu of fencing, with only a low fence-style guard railing system along the top.
7. Retaining wall and abutment architecture and materials should be designed to discourage growth of noxious weeds and scrub trees as much as possible.
8. Earthen embankments visible to Broad Street should be densely planted with a variety of landscaping species that resist erosion and noxious weed growth.

Recommended Action

The Advisory Board recommends that the Mayor and Town Commission of Perryville take necessary steps to consolidate these or similar recommendations into a formal communication to the SRRBP Project Team as soon as possible.

Respectfully submitted,



Volney H. Ford
Chairman



City of Havre de Grace

711 PENNINGTON AVENUE, HAVRE DE GRACE, MARYLAND 21078

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Susquehanna River Rail Bridge Project
Advisory Board
of the
Mayor and City Council of Havre de Grace
for the
Mayor and Town Commission of Perryville

Advisory Bulletin #18
Street Underpasses in Perryville
March 20, 2015

Background

The Advisory Board met on March 12, 2015 to discuss the two road underpasses along the Amtrak main line, located at Front Street and at the MARC Station. This discussion did not include the two Broad Street underpasses at the rail wye serving the Norfolk Southern line to Harrisburg, as it is not anticipated that these two bridge structures would be significantly altered in elevation or alignment.

Both roads passing under the main line are currently used by Amtrak personnel and other specially designated entities, but neither one is a public right-of-way. Both provide direct access to the same destinations, and are therefore redundant, except that the MARC Station underpass has a very low vertical clearance. The proposed high speed rail line is not likely to require local station platforms for its pair of tracks, except during emergency diversions of track usage, and therefore should not require the existing underpass for pedestrian crossover.

Recommendations

1. The existing divided-lane underpass opposite Front Street, which provides truck access to the Amtrak repair facility and portions of the Perry Point VA grounds, should be retained.
2. Whether modified to accommodate track realignment or not, the north face and wing walls of this underpass should be restored to its original architectural appearance.
3. The entire north entrance of this underpass should be thoroughly cleaned and well landscaped along the adjacent embankments and out to Broad Street.
4. The low, tunnel-like underpass that divides the two MARC Station parking lots should be abandoned by sealing it off from the north side. The south side may be left open for historical purposes, provided it is made secure from trespassers.

Advisory Bulletin #18

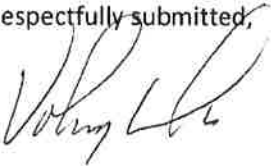
Page 2

5. The underpass access road cut leading in from Broad Street should be filled level with both MARC Station parking lots to provide a common entrance/exit at Broad Street and many more parking spaces.

Recommended Action

The Advisory Board recommends that the Mayor and Town Commission of Perryville take necessary steps to consolidate these or similar recommendations into a formal communication to the SRRBP Project Team as soon as possible.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Volney H. Ford", written over the text "Respectfully submitted,".

Volney H. Ford
Chairman



City of Havre de Grace

711 PENNINGTON AVENUE, HAVRE DE GRACE, MARYLAND 21078
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410-939-1800

Susquehanna River Rail Bridge Project
Advisory Board
of the
Mayor and City Council of Havre de Grace
for the
Mayor and Town Commission of Perryville

Advisory Bulletin #19
Rail Operation Noise Control in Perryville
March 23, 2015

Background

The Advisory Board met on March 12, 2015 to discuss noise issues in Perryville that are directly associated with freight train operations through the sharply-curved wye tracks at the MARC Station. Track alignment and curvature, particularly along the somewhat tighter northbound turn from the Norfolk Southern line onto the Amtrak main line, produces flange squeal of intense magnitude which can be heard from as far away as Havre de Grace.

The proposed rail bridge replacement project, which does not include the Perryville wye intersection with the Norfolk Southern line, may nevertheless require some modification of the wye tracks at the main line turnouts. This may be necessary to realign them with the new low-speed bridge location. The Board has identified two general measures to abate noise from flange squeal: a) adjust the curvatures more precisely with easing where possible, and b) install acoustical barriers along the curves.

Recommendations

1. Modify the wye curve entering northbound onto Amtrak so that its radius is eased as it merges with the nearest station boarding track. Flange squeal is most intense alongside the east parking lot of the station, suggesting very tight curvature at this point.
2. Modify the wye curve entering southbound onto Amtrak so that its radius is eased as it merges with the northernmost main line track aligning with the new north bridge.
3. A slight repositioning of the Broad Street rail overpass bridge decks within the existing abutment bearings may be necessary to ease curvatures without impacting the station parking lot layout.
4. Design a concrete acoustical barrier system that is just high enough to block, absorb and reflect intense flange noise emanating from rail height. The barriers should be parabolically curved inward to deflect noise downward toward track centers. It is hoped that such a barrier system would be no more than five feet in height.

5. Install the barrier system along both sides of each wye track, positioning it as close to the rails as normal operations and track maintenance will allow.
6. Install a modified version of the same system along both sides of the Broad Street rail bridges.
7. Extend the acoustical barrier system from the point of rail divergence leading from the Norfolk Southern line to the Amtrak main line turnouts.
8. Auch taller acoustical barrier may become necessary along the northeast right-of-way boundary, adjacent to the existing trailer park, if rail curvature easing cannot be achieved at this most intense noise location.
9. If flange squeal noise can be almost entirely abated by improvement of track alignment and curvature, some or all of the proposed acoustical barriers may prove to be unnecessary.

Recommended Action

The Advisory Board recommends that the Mayor and Town Commission of Perryville take necessary steps to consolidate these or similar recommendations into a formal communication to the SRRBP Project Team as soon as possible.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Volney H. Ford". The signature is fluid and cursive, with a large loop at the end.

Volney H. Ford
Chairman



City of Havre de Grace

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WWW.HAVREDEGRACEMD.COM

410-939-1800

Susquehanna River Rail Bridge Project Advisory Board Of the Mayor and City Council

Advisory Bulletin #20 Bridge Architecture – First Update July 21, 2015

Background

The Advisory Board met on March 12, 2015, and on a number of previous occasions to study the various options of bridge architecture, particularly as they relate to pier spans, type of structure, river viewscape, and impact on the intersection of Union Avenue and Otsego Street. References should be made to Advisory Bulletins #2, #3, #11, #14, and #15, which are directly related to this bulletin. The Board is deeply concerned that the SRRBP Project Team may now be focusing its work product on a simple vertical pier and deck beam type of structure with very short pier spacing (bridge spans), which the Board believes will negatively impact the intersection and overall bridge appearance.

Objectives

The Advisory Board, with much community input, has concluded that bridge architecture is the single most dominant concern of the citizens of Havre de Grace, Perryville, and both Counties, for all the reasons expressed in Advisory Bulletin #2. The same bulletin provided general design recommendations to achieve a desired effect. Primary objectives should be an increase of pier-to-pier spans as much as possible, with the use of graceful lines of arch-like curvature. To this end, the Board has embraced a “delta” type of structure, which permits much longer spans and a far more graceful appearance than a simple “deck” type structure put forth by the Project Team.

Further objectives relating directly to bridge span and pier placement include creation of an imposing gateway entrance into downtown Havre de Grace and enlargement of David Craig Park to accommodate a bridge history display area. The critical element in both objectives is location of the first pier beyond the bridge abutment in such a way to avoid blocking gateway viewscales or dividing the avenue under the bridges. The Board is convinced that this can only be achieved by a much longer-span bridge design. More detailed discussions of this very sensitive area, with specific objectives and recommendations, have been stated in Advisories #3, #11, #14, and #15.

Bridge Configurations

The Advisory Board has taken measurements of the gateway entrance area and existing truss-deck bridge, and has extrapolated measurements of four suggested bridge configurations offered by the SRRBP Design Team at its public presentations. This information was then used to develop simplistic elevation views, in scale, of the existing bridge and both basic types of new bridge design known as “deck” type and “delta” type, so that the public can gain a greater understanding of bridge appearance and its impact on the avenue intersection area.

This depiction of elevations entitled Bridge Configurations is attached, along with a previously developed aerial (plan) view of a proposed intersection alignment entitled Concept Road Alignment. It should be noted that the aerial view is consistent with Configuration C in the depiction. It should also be noted that all configurations are shown from the south (downtown) side of the bridges, just as each street section emerges from under the bridge. The street sections all curve to the left before emerging out from under the north side of the bridges, as can be plainly seen in the aerial view.

The SRRBP Project Team faces design challenges of fitting a curving street under the span(s), dealing with road clearance under delta legs, and landing the bridges clear of Otsego Street. The Advisory Board has measured minimum road clearance under the existing bridge as 14.83 feet at the lowest eye-bar connection. It believes the new design objective should be a minimum vertical clearance of 16 feet from street elevation at the curb line to any part of an overhead delta leg. All new bridge configurations shown would otherwise create no clearance issues.

Configuration A

The Project Team appears to favor a simple deck beam design supported by tall piers as being much more cost-efficient, less expensive to maintain, and easier to repair/replace major components. Although it would require more piers in the river, pier structure would be less massive. Taller and more slender piers would open up the river viewscape in one sense, but adding more pier sets will tend to have the opposite effect. Vertical piers also eliminate clearance concerns for boaters passing under the bridge outside the main channel.

This configuration is limited to 170 feet of span between pier centers, which is 30 feet less than that of the existing bridge. Architecture notwithstanding, such pier spacings would grossly impact the Otsego/Union intersection area, cluttering the streetscape and ruining the opportunity for an imposing gateway entrance to the downtown. It would also require a divided main avenue at best or a standard street corner at worst, neither of which would align smoothly with the Union/St John intersection area or with Water Street.

This type of bridge architecture is very plain and ordinary, offering little opportunity for enhancement other than some flair at the pier tops (as depicted). It is comparable to common highway bridges of recent decades and cannot be dramatically enhanced by accent lighting. Such an unremarkable structure should be seen as an insult to the riverscapes of both communities, with its unique setting as the “gateway bridge” at the confluence of this great American river and the world’s largest estuarial bay. This was also the immediate scene of colonial era crossings, more importantly traveled during the time of our nation’s founding.

Configuration B

The Project Team has presented an optional delta design based on spans of 240 feet. The term “delta” refers to the diagonal legs that form a triangle with the bridge deck. This configuration permits the deck structure to be cantilevered some distance beyond the delta, where it would connect with a simple deck beam in mid-span. This type of structure allows a much longer span between piers, by an additional 70 feet or 41%, as presented. Since a delta leg is not required at the abutment, this particular configuration would reduce the first span from 240 feet to 180 feet. The net effect of this configuration would be to constrain the intersection even more than in Configuration A, due to street clearance under the first pier delta legs.

Configuration C

In order to achieve an acceptable gateway and intersection layout, the Advisory Board is convinced that a delta leg must be included at the abutment to extend the first span out to 240 feet. The Board concedes that such a configuration will still be tight and will need to be designed very carefully to avoid street clearance issues at the delta legs. In order to ease this situation, the Board recognizes that the Otsego Street curve may need to begin at a more eastward point, perhaps centering on Pearl Street, than shown in the attached aerial view.

Configuration D

A better solution for the downtown gateway area would be to extend the first span an additional forty feet by using a significantly deeper and stronger beam section than would be used for all other spans. This beam section could be extended through the half-delta at the abutment and entire delta at the first pier, as depicted, or limited to the span between delta legs. Either design would be architecturally pleasing to the eye.

Conclusions

The Advisory Board is convinced that Configurations A and B would be entirely unsatisfactory to the downtown gateway objectives of the City of Havre de Grace, and would present a more cramped and obstructed streetscape than exists today, especially when coupled with the effects of a double-wide bridge complex. The Board is also deeply opposed to a divided thoroughfare at the confluence of so many streets, which would become necessary with much closer pier spacing.

In macro perspective, the Board is uniformly opposed to any bridge architecture that suggests simple vertical piers supporting horizontal deck beams, especially when such a design requires much shorter spans and more structural clutter at river level. This particular bridge, being in a geographically and historically unique location, and dominating an incredible panorama for miles, demands an architectural style worthy of its place and symbolic of its diverse rail transportation function.

Recommended Action

The Advisory Board urges the City of Havre de Grace, the Town of Perryville, and both County governments to vigorously oppose a simple, short-span design for these bridges, and to push hard in favor of a more graceful and stylistic architecture, regardless of the direction the Project Team now seems to be taking. The City of Havre de Grace should also insist on a more open gateway area under the bridges which would not require a divided street passage or a sharply curving intersection.

Respectfully submitted,

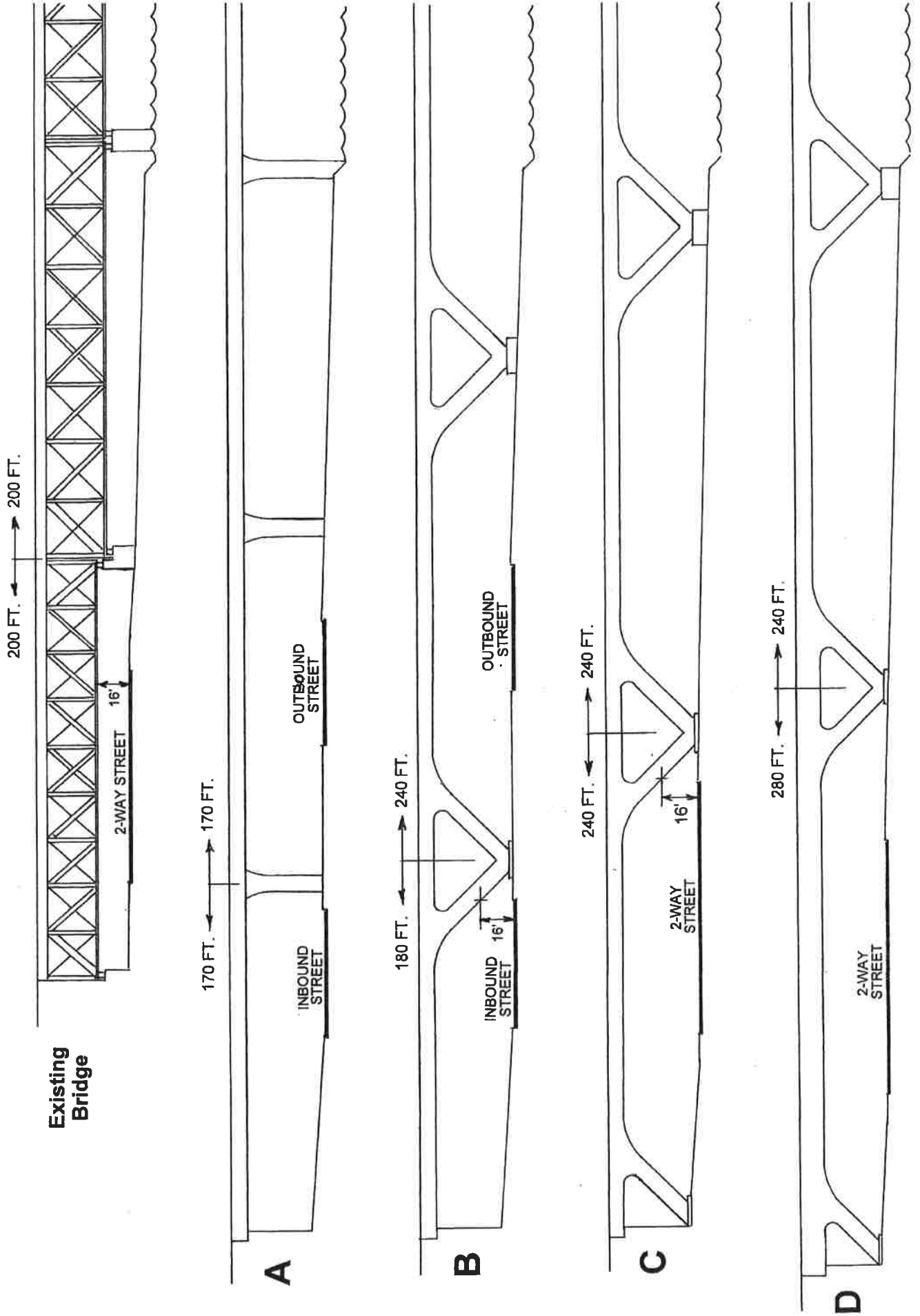


Volney H. Ford
Chairman

Attachments: Bridge Configurations
Concept Road Alignment

Advisory #20

Bridge Configurations



SUSQUEHANNA RIVER RAIL BRIDGE PROJECT

www.susrailbridge.com

COMMENT FORM

Name: CAROL ZIMMERMAN
Address: 213 B SENECA WAY, HDG, 21078
Email: ZIMMERMANC@COMCAST.NET
Telephone: _____

Comments: ① IMPERATIVE THAT THE HISTORIC BRIDGES THAT ARE TO BE RETAINED & WIDENED BE GIVEN A COMPATIBLE FACADE TREATMENT THAT PROVIDES CONSISTENT LOOK WITH EXISTING STONE.

② 160 mph train speed should be ~~the~~ selected to accommodate higher speed rail travel. Thus, Design 9A is the one.

Attach additional pages if necessary

**PLEASE PUT YOUR COMPLETED FORM IN ONE OF THE COMMENT BOXES AT THIS MEETING.
YOU CAN ALSO MAIL IT TO:**

Susquehanna River Rail Bridge Project

P.O. Box 68

Elkton, MD 21922

Comments can also be submitted via e-mail: info@susrailbridge.com



SUSQUEHANNA RIVER RAIL BRIDGE PROJECT

www.susrailbridge.com

COMMENT FORM

Name: Megan Hotchkiss

Address: 723 Warren St., HdG, MD

Email: meghotchkiss@gmail.com

Telephone: 801-726-9721

Comments: My family and I have concerns for the safety and visual aesthetics of the approaching line through downtown Havre de Grace.

Attach additional pages if necessary

**PLEASE PUT YOUR COMPLETED FORM IN ONE OF THE COMMENT BOXES AT THIS MEETING.
YOU CAN ALSO MAIL IT TO:**

Susquehanna River Rail Bridge Project
P.O. Box 68
Elkton, MD 21922
Comments can also be submitted via e-mail: info@susrailbridge.com



President Robert J. Hodge, District 5

Vice President Dr. Alan McCarthy, District 1

Councilwoman Joyce Bowsbey, District 2

Councilman Michael W. Dunn, District 3

Councilwoman Diana Broomell, District 4



James Massey
Council Manager

County Council Office
410.996.5201

County Information
410.996.5200
410.658.4041

COUNTY COUNCIL OF CECIL COUNTY

Cecil County Administration Building
200 Chesapeake Boulevard, Suite 2110, Elkton, MD 21921

May 13, 2014

Susquehanna River Rail Bridge
PO Box 68
Elkton MD 21922

RE: Susquehanna River Bridge Reconstruction and Expansion Project

Dear Sir or Madame:

The County Council of Cecil County, Maryland, agrees that the existing Susquehanna River Rail Bridges needs to be rehabilitated or replaced. Several Council Members attended the open house on April 28, 2014 in Havre de Grace.

Members of the Cecil County Council have concerns about the impact of this project on our economic, historic, cultural, social and natural environment. It is our understanding that a new bridge will be constructed to parallel the existing bridge and the path may be altered as much as one quarter mile on either side of the present tracks.

The Cecil County Council supports the concerns of the Town of Perryville for the impact on the heavily traveled Port Road: the historic Rodgers Tavern, which is on the National Register of Historic places; the Perryville Train Station, an historic station that was recently renovated and serves as the depot for MARC train and AMTRAK, the Perryville Wastewater Treatment Plant, less than 70 yards from the existing track; Broad Street, which is the main thoroughfare to downtown Perryville, and the Perry Point Veterans Hospital, which has a single entrance via Broad Street.

Additionally, the County Council has serious concerns about protecting the IKEA property because it is one of Cecil County's largest employers.

There are several plans that should be considered in relation to the bridge proposal. The Chesapeake Connector Freight and Passenger Rail Benefits Study proposes a third track for use by MARC, which could augment rail service between Perryville, Elkton and Wilmington. Also, this project should be coordinated with the Maryland Transit Administration proposal for a MARC layover facility near Perryville. The Council is hopeful that during design, consideration can be given to a bike and pedestrian crossing.

The County Council of Cecil County is supportive of rehabilitating or replacing the Susquehanna River Rail Bridge but the impact of moving the track must be of prime consideration to the citizens of Perryville and Cecil County.

Sincerely,


Robert J. Hodge
Council President

Copy: Secretary Anthony Foxx
Senator Benjamin Cardin
Senator Barbara Mikulski
Congressman Andy Harris
Governor Martin O'Malley
Secretary James Smith
Senator Nancy Jacobs
Senator Stephen Hershey
Delegate Michael Smigiel
Delegate David Rudolph
Delegate Mary-Dulany James
Delegate Glen Glass
Delegate Jay Jacobs
Delegate Steve Arentz
Executive Tari Moore
Town of Perryville

Tari Moore
County Executive

Alfred C. Wein, Jr.
Director of Administration



Office: 410.996.5202
Fax: 410.996.1014

County Information
410.996.5200
410.658.4041

CECIL COUNTY, MARYLAND

Office of the County Executive
200 Chesapeake Boulevard, Suite 2100, Elkton, MD 21921

May 16, 2014

Harry Romano
Office of Planning & Capital Programming
Maryland Department of Transportation
7201 Corporate Center Drive
P.O. Box 548
Hanover, Maryland 21076

RE: Susquehanna River Rail Bridge Project

Dear Mr. Romano:

I am writing in response to the recent public outreach information session held on April 28th regarding the above referenced Susquehanna River Rail Bridge Project (the "Project"). Please be advised that based on data presented at this information session, Cecil County Government would like to take this opportunity to provide your agency with local government feedback related to the Project.

Correspondence from the Town of Perryville (the "Town") to the National Rail Passenger Corporation (the "NRPC") dated October 10, 2012, June 4, 2013, and June 27, 2013 indicates that the Project has the potential of adversely affecting critical Town infrastructure, cultural resources, and essential community character and functionality. As such, it is imperative that the project team address the Town's comments and provide solutions that will be included in the design of the river crossing.

Additionally, as you may be aware, the Maryland Transit Administration (the "MDTA") is presently exploring the establishment of a MARC maintenance and storage facility on the northerly side of Perryville adjacent to the Northeast Corridor Railway. The materials provided at the April 28th session failed to acknowledge or address the MDTA project. This is a critical issue vis-à-vis Project design, because a new river crossing will likely necessitate longer, more gradual approaches to accommodate high speed rail approaching a higher bridge. These approaches are likely to adversely impact design of the MARC maintenance and storage facility if there is not adequate coordination between the study groups for the two projects.

We are also concerned that the Susquehanna Rail Bridge project does not adequately address the Chesapeake Connector Freight and Passenger Rail Benefits Study and the goal of the Lower Susquehanna Heritage Greenway to provide a pedestrian crossing of the river. As previously mentioned, a new bridge design, if done in a vacuum without consideration of the aforementioned matters, is likely to adversely affect plans to ease the freight rail bottleneck at the junction of Norfolk Southern's Port Road and the Northeast Corridor Railway, and preclude the establishment of a pedestrian crossing.

Harry Romano
Susquehanna River Rail Bridge Project
May 9, 2014

Page Two of Two

Accordingly, while we applaud the goals of the Susquehanna Rail Bridge Project, we are firmly resolved that all planning efforts related to the Project be considered, and that the concerns of those who will be impacted by the Project are afforded the ability to convey their observations and concerns, and to have their comments seriously considered and evaluated by your agency as the Project progresses. Such coordinated planning must be in harmony with the Cecil County Comprehensive Plan, which is one of the principal elements used to harmonize the human environment in this County. Therefore, please consider this correspondence as a formal request that you and other appropriate federal and State officials meet with County representatives to ensure that this proposed facility is harmonious with our local land use and other relevant local policies. This request for coordination is made pursuant to the National Environmental Policy Act ("NEPA"), the Counsel of Environmental Quality regulations (the "Regulations"), the Federal Land Planning and Management Act (the "Act"), and other applicable federal laws and regulations.

Thank you for this opportunity to comment.

Sincerely,



Tari Moore
County Executive

Public Comment Received on the Project Website:

I am a frequent train watcher in the Perryville Area. I enjoy going to the station and watching the trains go by. However, the newly built Perryville Pier is the best place to watch trains. It would be wonderful to have a pedestrian walk along side the tracks with lighted poles to watch the trains up close. If this isn't possible possibly consider making the current bridge built by the Pennsylvania Railroad the pedestrian and bicycle bridge. The railroad bridge is really a symbol and significant landmark to both the Community of Perryville and Community of Havre de Grace, Maryland. Like the deconstruction of Pennsylvania Station of New York, if this railroad was to be destroyed it would truly be a modern day monumental act of vandalism.

Chad Karschner
4040 Paddrick Road
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4/18/2014

Phase IA Study



**Phase IA Archeological Assessment
for the Susquehanna River Rail Bridge Project,
Harford and Cecil Counties, Maryland**



Prepared for:



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August 2014

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ABSTRACT

In March 2014, McCormick Taylor conducted a Phase IA archeological assessment on behalf of Amtrak in support of an Environmental Assessment for the proposed Susquehanna River Rail Bridge project. The existing Susquehanna River Bridge is located on Amtrak's Northeast Corridor at Milepost 60 between the City of Havre de Grace in Harford County, Maryland and the Town of Perryville in Cecil County, Maryland. The bridge itself is roughly 0.75 miles (1.2 kilometers) in length and is the longest bridge with a movable span on the Northeast Corridor.

The goal of this assessment was to evaluate the overall level of disturbance within the Area of Potential Effects (APE) as well as identify areas within the APE that have the potential to contain archeological resources. This goal was achieved through a two-fold process: 1) a thorough review of historical documentation to determine the types and locations of buildings, sites, and structures that were once present within the APE; and 2) a program of field observation and limited subsurface investigation to determine the integrity of soil deposits and evaluate whether conditions are sufficient for the potential preservation of cultural horizons. The APE for the project encompasses all of the various design alternatives for the project. The majority of the each design alternative lies within the existing disturbed Amtrak right-of-way (ROW). However, in proximity to the Susquehanna River shoreline, the width of the project APE expands outside of the current ROW to allow for the numerous design alternatives associated with the bridge rehabilitation or replacement. For the purposes of this study, the portions of the APE outside of the current ROW, were divided into five (5) discrete Study Areas. Within each of these Study Areas, a program of visual inspection and, where possible, a series of judgmentally placed soil probes were excavated in order to assess their potential to contain intact cultural deposits. These probes were conducted in order to provide a more detailed view of the condition and integrity of the stratigraphic deposits located within each Study Area.

Study Area 1, located along the athletic field complex for the Havre de Grace school system, demonstrated a heavily modified and disturbed soil profile. The encountered disturbance is associated with the reconfiguration of the natural landform for the construction of the school's ball fields. Because of this disturbance, there is little to no potential for this area to contain intact archeological deposits and no additional work is recommended.

Study Area 2 extends from North Juniata Street to North Union Avenue within the northern portion of downtown Havre de Grace. Although large portions of this area have been previously disturbed by construction activities associated with the Northeast Corridor, potentially undisturbed areas are present south of Warren Street and north of the existing rail line. Many of these areas are associated with the yard spaces of existing late nineteenth and early twentieth century houses. Phase IB survey is potentially recommended for these areas should they be impacted by the preferred alternative or any project-related activities.

Study Area 3, located on the Havre de Grace waterfront, is comprised of two city parks: Jean S. Roberts Memorial Park and David Craig Park. Based on a review of historic mapping, these areas appear to be human-constructed landforms, resulting from the placement of fill along the waterfront sometime during the mid- to late-nineteenth century. Though artificial, given the potential for these landforms to contain cultural deposits associated with waterfront-related

commercial or industrial enterprises as well as structural remnants from the nineteenth century rail line which preceded the existing Northeast Corridor, Phase IB archeological survey is recommended for Study Area 3 should it be impacted by the preferred alternative or any project-related activities.

Study Area 4 is located along the waterfront on the Perryville side of the Susquehanna River. While large portions of this area have either been disturbed through various past construction efforts or have been previously subjected to archeological survey, sections of the Study Area 4 have the potential to contain intact cultural deposits. South of the railway corridor Phase IB survey is recommended within the strip of land between the electrical substation and the Susquehanna River shoreline, in which a remnant of the earlier nineteenth century bridge abutment is present should it be impacted by the preferred alternative or any project-related activities. North of the railway corridor, Phase IB survey is recommended in the vicinity of the extant Rodgers Tavern and associated Site 18CE15, should they be impacted by the preferred alternative or any project-related activities.

Study Area 5 contains the northern extremity of the Perry Point VA Medical Center and areas surrounding the Perryville Maryland Area Regional Commuter station, located just to the north of the existing Amtrak rail corridor at its intersection with the Norfolk Southern Port Road spur line. As with the previous study area, large sections of Study Area 5 have been previously disturbed through various past construction efforts or subjected to archeological survey. Outside of these sections, Phase IB survey is recommended for the yard areas associated with a group of single and multi-family residences that line the southern edge of Broad Street in Perryville should they be impacted by the preferred alternative or any project-related activities.

Finally, previous underwater remote sensing efforts in the lower Susquehanna River have identified multiple anomalies within the current project APE. These include Maryland Historical Trust's Havre de Grace Quad Files #2, #3, #7, #10, #18 and #19. If any of these resources are impacted by the proposed project, additional underwater archeological investigations are recommended in order to determine their condition, historic integrity, and significance, as well as their eligibility for the National Register of Historic Places. Additionally, depending on the selected preferred alternative, Maryland Historical Trust's Havre de Grace Quad Files #9 and 11, historic coal wharfs, and archeological site 18HA266, identified as the wreckage of a twentieth century barge, should also be resurveyed. Due to the proximity of these resources to the APE, their locations should be confirmed.

All recommended Phase IB survey efforts should be conducted in accordance with the Maryland Historical Trust's established standards and guidelines for archeological investigations. These survey efforts should include, at minimum, a plan for the systematic shovel testing of all areas not shown to have been previously disturbed and in which proposed ground disturbance will occur. In addition, if determined necessary, due to either the specifications of the project or as a result of the data gathered during the shovel testing program, provisions should be made for the placement of a series of backhoe trenches in order to evaluate the potential for deeply buried cultural deposits.

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1.0 INTRODUCTION

In March 2014, McCormick Taylor conducted a Phase IA archeological assessment on behalf of Amtrak in support of an Environmental Assessment (EA) for the proposed Susquehanna River Rail Bridge project. The existing Susquehanna River Bridge is located on Amtrak's Northeast Corridor (NEC) at Milepost 60 between the City of Havre de Grace in Harford County, Maryland and the Town of Perryville in Cecil County, Maryland (*Figure 1*). The bridge itself is roughly 0.75 miles (1.2 kilometers) in length and is the longest bridge with a movable span on the NEC.


Currently, the two-track bridge is speed-restricted and creates a bottleneck along this segment of the NEC, resulting in conflicts between Amtrak's passenger service, Maryland Area Regional Commuter (MARC) trains, and freight trains operated by Norfolk Southern Railway (NS). It also poses a capacity constraint on planned increases in service frequency. The existing bridge allows for a 54-foot under-clearance for marine traffic. For taller marine vessels, the swing span must be opened, which disrupts rail operations. The advanced age of the bridge and its structural condition limit speeds on the bridge and conflict with Amtrak's goal to provide high-speed passenger rail service on the NEC. The bridge's obsolete design and age require major rehabilitation and repairs and has, thus far, resulted in increasing maintenance costs. The need remains for continuous electrified rail operations and vertical clearance for marine traffic. For this project, the Maryland Department of Transportation (MDOT) and Amtrak are developing a series of alternatives, including modification and/or replacement of the existing bridge along with the construction of a new high-level two-track bridge parallel to the existing bridge.

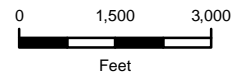
Given the Federal funding stream for this project, the Federal Railroad Administration (FRA) must comply with the Section 106 of the National Historic Preservation Act of 1966 and its implementing regulations at 36 CFR Part 800. Section 106 states that all Federal agencies must take into account the effects of their undertakings on historic properties. In order to assist the FRA in its Section 106 responsibilities, McCormick Taylor proposed a two-fold scope of work. The first goal was to collect background data relevant to the environmental setting, historic development, and cultural history of the project area. Second, this data was then utilized to assess the potential of the project Area of Potential Effects (APE) to contain archeological sites or intact cultural horizons. In order to confirm these assumptions, the background research was supplemented by a comprehensive visual inspection of the APE. While this level of investigation does not satisfy the need to identify and evaluate archeological resources that lie within the project APE, this document may be used as a planning tool to guide subsequent archeological identification efforts.



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Figure 1
Archeological Area of Potential Effects
Susquehanna River Rail Bridge Project
Harford and Cecil Counties, Maryland

 Archeological Area of Potential Effects



Source: USGS, The National Map, 2013

1.1 Project Area of Potential Effects and Survey Limits

Pursuant to Federal regulations for the “Protection of Historic Properties, 36CFR Part 800.16(d), the project’s APE is defined as the “geographical area or areas within which an undertaking may cause changes in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.” According to current plans, the project encompasses approximately a 6-mile (9.6-kilometer) long corridor extending from the “Oak” Interlocking at Milepost 63.5 in Havre de Grace to the “Prince” Interlocking at Milepost 57.3 in Perryville. By definition, the archeological, or direct, effects APE for a project is typically confined to a given area where ground disturbing activities will most likely occur. This area includes not only the construction footprint for the facility to be built but also any associated temporary use areas such as access roads or equipment storage lots. The APE for the Susquehanna Bridge project includes 178.9 acres (72.39 hectares). Although the entire project corridor measures approximately 6 miles (9.6 kilometers), an estimated 3.63 miles (5.84 kilometers) is located within existing, disturbed Amtrak right-of-way (ROW) (**Figure 1**). These areas are predominantly confined to the eastern and western extremities of the project corridor. As the corridor proceeds from Havre de Grace in an east-northeasterly direction towards the river, and ultimately crosses to the Perryville shore, the width of the project APE expands to allow for the numerous design alternatives associated with the bridge rehabilitation or replacement. As depicted in **Figure 1**, this widened corridor extends for a distance of approximately 2.37 miles (3.81 kilometers). On the Havre de Grace side of the project, the archeological APE begins to deviate from existing Amtrak ROW approximately 4,166 feet (1,270 meters) from the Susquehanna River shoreline. On the Perryville side of the project, the widened APE returns to existing Amtrak ROW approximately 4,661 feet (1,420 meters) from the eastern shore of the river. This widened APE footprint encompasses approximately 89.2 acres (36 hectares) of land on both sides of the river and includes all of the various design alternatives for the project. These 89.2 acres (36 hectares), located outside of the disturbed Amtrak ROW are where McCormick Taylor focused the majority of their fieldwork and background research efforts for this assessment.

1.2 Purpose of Report

This reconnaissance survey, with broad consideration of the entirety of the project’s APE, is designed to document existing conditions, including gathering information regarding the location of intact soils and potential locations of intact cultural deposits within or in close proximity to the various design alternatives proposed at this early stage of the project. This archeological report contains archival and field research appropriate to the general complexity of the APE and its resources. It is specifically designed to provide a general impression of the project APE’s potential to contain archeological properties as well as provide general information regarding the type and location of sites that may be found within the Amtrak project corridor.

During this project, the results of limited field reconnaissance, background research, and Geographical Information Systems (GIS) data analysis was utilized to provide the client with a current state of knowledge regarding the types and temporal affiliations of archeological resources that have been previously recorded within the project corridor, as well as identify those portions of the study area that have the potential to contain as yet undocumented resources.

The research design for this archeological assessment was informed by the following sets of data:

- Primary and secondary historical data: This data set included primary sources, such as historical maps and photographs, as well as written records, such as city directories. Secondary source data included city histories, previous cultural resources reports, and the database of previously identified archeological sites on file with the Maryland Historical Trust (MHT).
- GIS/Map Analysis: For the purposes of the project, historical maps and aerial photographs of Havre de Grace and Perryville were digitized and geo-referenced. Placement of the current project APE over the historic mapping provided a visual representation of how the APE has developed through time. These maps included the historical United States Geological Survey (USGS) quadrangle maps, current and historical aerial photographs, and Sanborn fire insurance maps spanning the years 1886 to 1930. In concert with the project design template, each of these map layers was carefully reviewed to determine areas where the current project had the potential to intersect with a formerly extant historical period residential neighborhood, commercial area, or industrial site. These maps were also utilized to verify disturbance within the current Amtrak ROW.
- Existing Conditions Assessment/Field Investigations: Following the mapping analysis, the APE was subjected to pedestrian reconnaissance by an archeologist in order to document the existing conditions. Where possible, walkover survey was conducted with the archeologist making observations regarding the existing ground surface conditions within the area, changes in topography, or evidence of prior disturbance. Photographs of the current environment were also taken to supplement the written observations.

1.3 Regulatory Background and Project Staffing

All investigations summarized within this report were conducted in compliance with applicable state and Federal guidelines by individuals meeting the Secretary of Interior's Professional Qualification Standards for archeology or history (36 CFR Part 61). State and Federal mandates that apply to the project include: the U.S. Department of Transportation Act of 1966; the National Historic Preservation Act of 1966 as amended, and its implementing regulations, 36 CFR § 800; the National Environmental Policy Act of 1969; the Archeological and Historic Preservation Act of 1974; Executive Order 11593; the Secretary of the Interior's *Archeology and Historic Preservation; Secretary of the Interior's Standards and Guidelines* (48 FR 44716-44742); the Maryland Historical Trust Act of 1985 as amended; and the Maryland Historical Trust's *Standards and Guidelines for Archeological Investigations in Maryland* (Shaffer and Cole 1994).

Since formal archeological investigations have not yet taken place within the APE, this report is intended to serve as an initial step in the survey process and a means to gather together the current state of knowledge regarding archeological resources both within and in the immediate

vicinity of the project corridor. This information will help to inform the level of effort and work plan for future archeological fieldwork as the project progresses.

The field investigations for this project were conducted during the week of February 17, 2014 by Macon Coleman. Brad McDonald, MA served as the Principal Investigator, primary report author, and oversaw the general direction of the project. Mr. McDonald and Laura Meadows, MA completed the historic background research phase of the project. Ms. Meadows authored the historic context section of this report. Technical review and revisions were provided by Allison Brewer, MA. Technical assistance was provided by Steven Barry, MA, RPA. Graphics were produced by Joe Knieriem and John Watson.

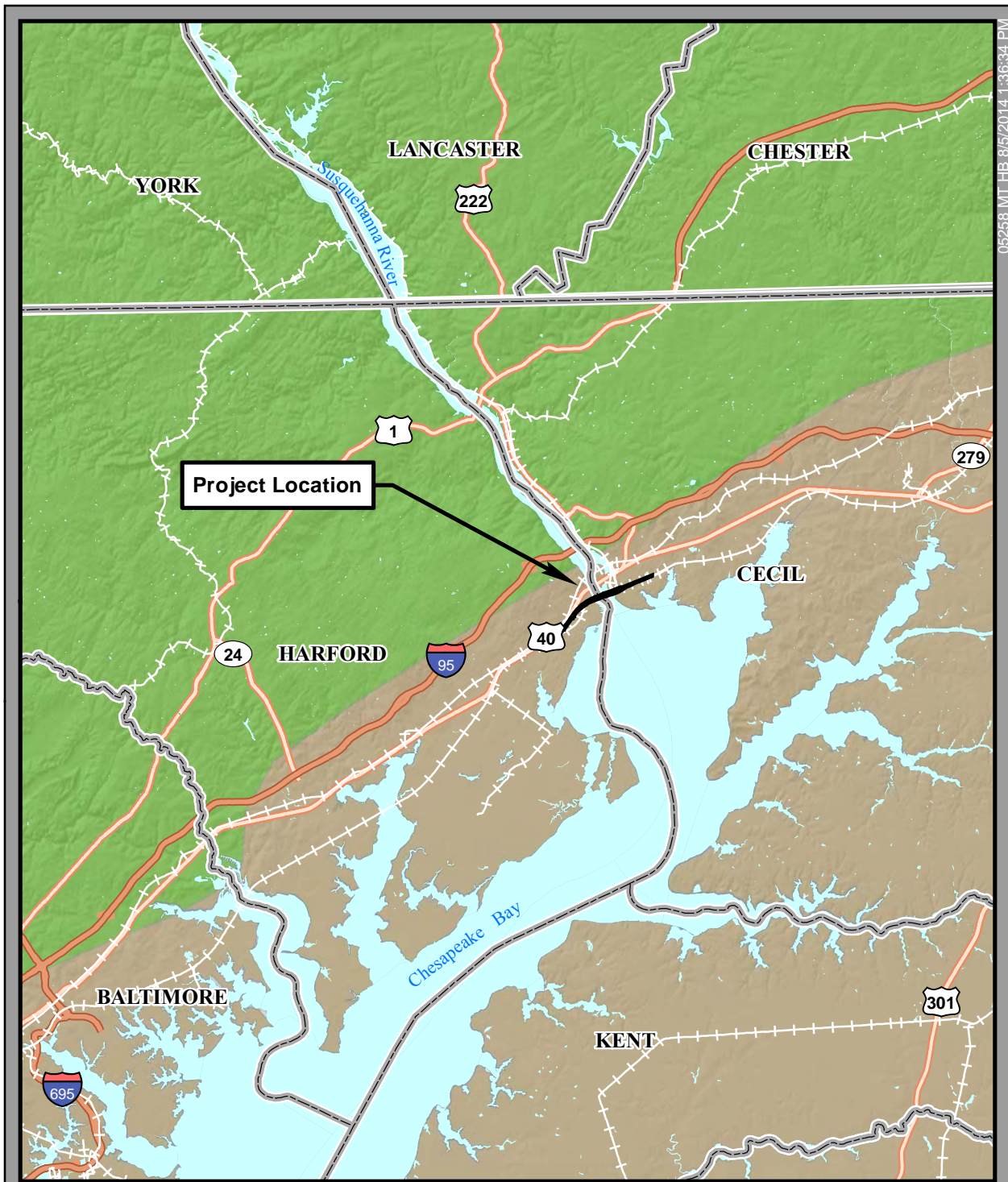
2.0 PHYSICAL DESCRIPTION AND ENVIRONMENTAL SETTING

All human societies are linked to the natural environment in an ecological relationship. This relationship entails the uses of organic and inorganic resources that are present in the natural environment, and the cultural strategies that people employ to procure and process those resources. Factors such as climate, vegetation, soils, geomorphological setting, and lithic resources limit the options for the types of settlement, subsistence, and technological patterns that may evolve. These factors may be viewed from a regional perspective as they affect broader patterns of cultural behavior; on a local level they affect considerations such as site selection and subsequent preservation.

The Susquehanna River Bridge APE is located on the northwestern boundary of the Western Shore of the Coastal Plain physiographic province in Maryland (*Figure 2*). Additionally, the APE falls within Maryland Archeological Research Unit 6: Sassafras-Elk-Northeast-Bush-Susquehanna Drainages (*Figure 3*).

2.1 Geological Setting

Bounded by the Atlantic Ocean to the east and foothills of the Appalachian Mountains that define the Piedmont physiographic province to the west, the Coastal Plain encompasses both the Eastern and Western Shores of Maryland's Chesapeake Bay. The landscape therein is characterized by a low topographic relief that ranges from gently rolling to nearly level sandy plains. Numerous interior tidal freshwater swamps that drain into saltwater marshes toward the shoreline are also present throughout the Coastal Plain. Waterways tend to be low energy and in general, drainage in the Coastal Plain is relatively poor. Soils of the Coastal Plain consist of fine sands and loams that are underlain by unconsolidated deposits of quaternary, tertiary, and cretaceous silts, sands, clays, and marls (<http://www.mgs.md.gov/>; Widmer 1964). Silty to sandy soils interspersed with large surface deposits of cobbles and gravels are common throughout the province. Although loam, clay, and marl deposits can also be found throughout the Coastal Plain, these deposits tend to be found toward more interior portions of the physiographic province. Consequently, the more inland portions of Maryland's Coastal Plain tend to more fertile. Maryland's Coastal Plain is part of a larger physiographic province, which is divided into various sections. In its entirety, the Coastal Plain spans much of the eastern seaboard of the United States.



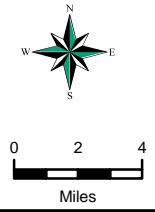
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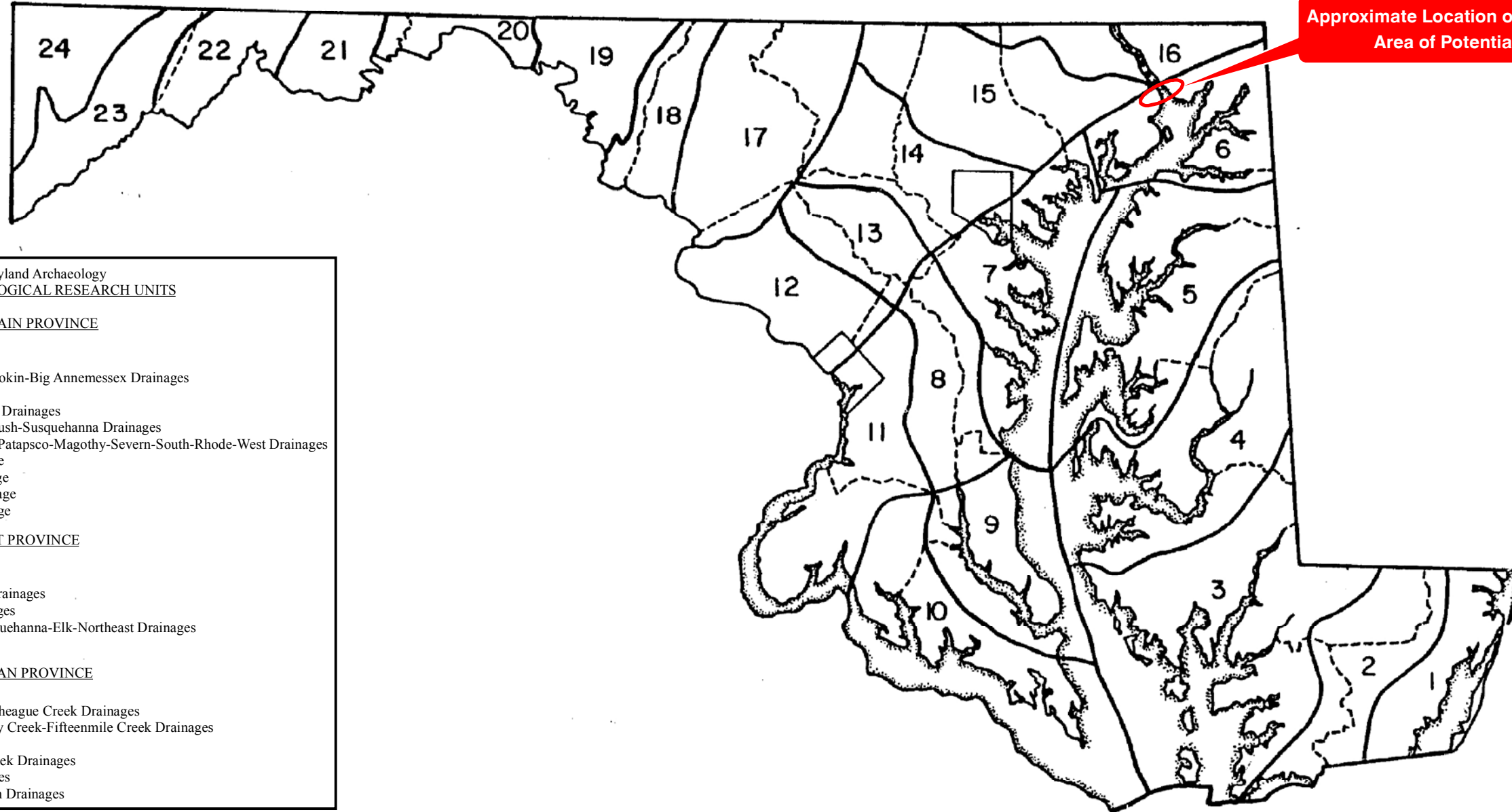
Figure 2
Physiographic Province Map

Susquehanna River Rail Bridge Project
Harford and Cecil Counties, Maryland

- Archaeological Area of Potential Effects
- Coastal Plain Province
- Piedmont Province

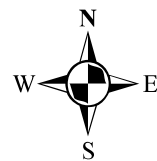
Source: USGS, 2005





- Council for Maryland Archaeology
 MARYLAND ARCHAEOLOGICAL RESEARCH UNITS
- COASTAL PLAIN PROVINCE
- Unit 1 - Atlantic Drainage
 - Unit 2 - Pocomoke Drainage
 - Unit 3 - Nanticoke-Wicomico-Manokin-Big Annemessex Drainages
 - Unit 4 - Choptank Drainage
 - Unit 5 - Chester River-Eastern Bay Drainages
 - Unit 6 - Sassafras-Elk-Northeast-Bush-Susquehanna Drainages
 - Unit 7 - Gunpowder-Middle-Back-Patapsco-Magothy-Severn-South-Rhode-West Drainages
 - Unit 8 - Riverine Patuxent Drainage
 - Unit 9 - Estuarine Patuxent Drainage
 - Unit 10 - Estuarine Potomac Drainage
 - Unit 11 - Riverine Potomac Drainage
- PIEDMONT PROVINCE
- Unit 12 - Potomac Drainage
 - Unit 13 - Patuxent Drainage
 - Unit 14 - Patapsco-Back-Middle Drainages
 - Unit 15 - Gunpowder-Bush Drainages
 - Unit 16 - Piedmont Province | Susquehanna-Elk-Northeast Drainages
 - Unit 17 - Monocacy Drainage
- APPALACHIAN PROVINCE
- Unit 18 - Catoctin Creek Drainage
 - Unit 19 - Antietam Creek-Conococheague Creek Drainages
 - Unit 20 - Licking Creek-Tonoloway Creek-Fifteenmile Creek Drainages
 - Unit 21 - Town Creek Drainage
 - Unit 22 - Evitts Creek-Georges Creek Drainages
 - Unit 23 - Potomac-Savage Drainages
 - Unit 24 - Youghiogheny-Casselman Drainages

Unit 6 - Sassafras-Elk-Northeast-Bush-Susquehanna Drainages



Not to Scale

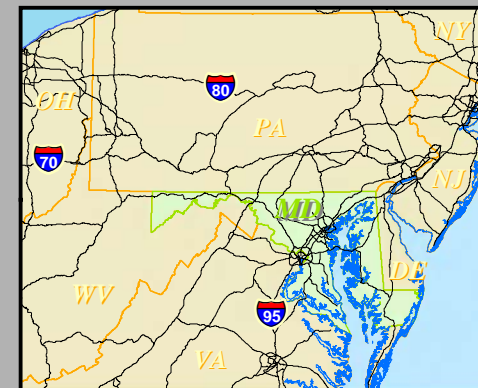


Figure 3
 Maryland Archeological Research Units
 Susquehanna River Rail Bridge Project
 Harford and Cecil Counties, Maryland
 Source: Maryland Historic Trust

2.2 General Soil Description

According to soil surveys conducted by the United States Department of Agriculture Natural Resources Conservation Service (<http://websoilsurvey.nrcs.usda.gov>) for Harford and Cecil County, Maryland, there are ten soil mapping units within the archeological APE. Descriptions and locations of the soil series/mapping units are provided in **Table 1** as well as **Figure 4**.

2.3 Project Setting

The archeological APE for the Susquehanna River Bridge project begins in Havre de Grace, a city situated on the western bank of the Susquehanna River at the mouth of the Chesapeake Bay. On the Havre de Grace side of the river, the APE is characterized by the various residential, commercial, and community development associated with this small city of approximately 13,000 people. The archeological APE begins approximately 4,000 feet west of the intersection of the existing rail corridor with Revolution Street (MD 7) in Havre de Grace. From the western terminus of the APE to Lewis Lane, the APE is confined within the existing Amtrak ROW. East of Lewis Lane, the APE extends outside of the Amtrak ROW to allow for the proposed design alternatives. The proposed design alternatives are located along the south side of the current alignment of the rail corridor.

From Lewis Lane to Juniata Street, a distance of approximately 2,900 feet (884 meters), the project APE is characterized by a series of athletic fields which are shared between the Havre de Grace middle school and high school complexes. Proceeding eastward from Juniata Street, the project APE is characterized by the mixed commercial and residential neighborhoods of downtown Havre de Grace. These areas are mostly comprised of wooded lots with manicured lawns along two-lane paved streets. Within this area of the project, the existing rail corridor is elevated above the surrounding neighborhoods. Specifically, north of Warren Street, which parallels the rail corridor, the elevated line is supported by a series of large earthen berms. The portion of the APE immediately adjacent to the Havre de Grace waterfront is characterized by open, grassy areas with several small marinas. Elevations within the Havre de Grace portion of the APE range between sea level and 40 feet (12 meters) above mean sea level (AMSL).

Along the Perryville shore, the archeological APE has been modified by human activity; however, the eastern shore of the Susquehanna is not as intensely developed as the western shore, within the area of Havre de Grace. The majority of the development along the eastern shore is confined to the village of Perryville, which is located to the north of the existing rail line. The area south of the railroad corridor is primarily characterized by property associated with the Perry Point Veteran's Administration (VA) Medical Center. While the main complex of hospital buildings is located well to the south of the rail corridor, a series of associated single family homes and recreational facilities is located closer to the rail line.

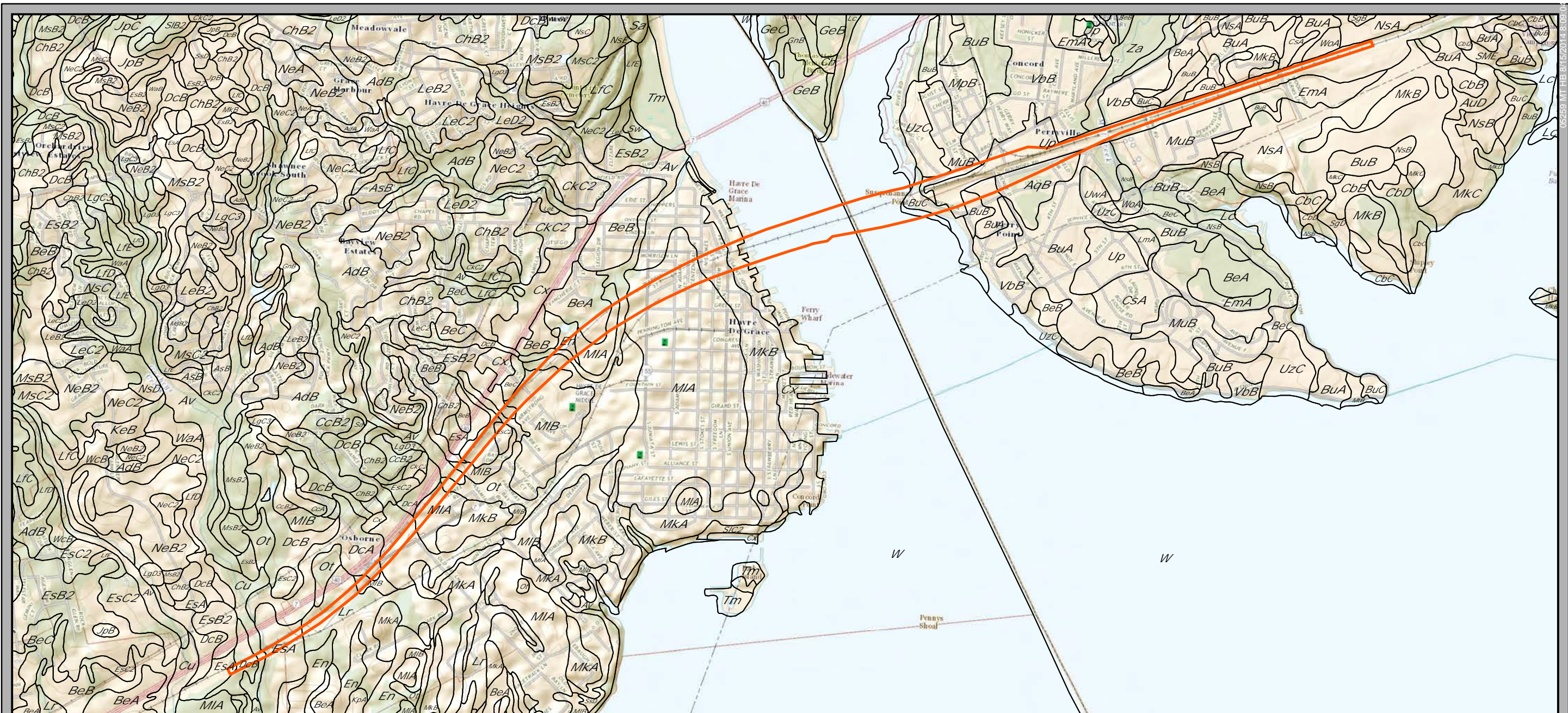
As on the Havre de Grace side of the project area, the archeological APE on the Perryville side is expanded to the south of the existing corridor in order to accommodate the numerous proposed design alternatives. Extending eastward from the Susquehanna River, the project APE is predominantly characterized by open grassy areas interspersed with wooded lots. Major



improvements within the Perryville side of the APE include an electrical substation which is located just to the north of Avenue A and First Street. Further east, near the eastern terminus of the expanded archeological APE is the Perryville wastewater treatment plant. Elevations within the Perryville portion of the APE range between sea level and 40 feet (12 meters) above mean sea level (AMSL).

Table 1. Soils within the Area of Potential Effects

Map Symbol	Mapping Unit	Soil Series Description
<i>Cecil County (Perryville)</i>		
AqB	Aquasco silt loam, 2 to 5 percent slopes	Soils of the Aquasco series are deep and somewhat poorly drained. They are typically found in inter-riverine settings and formed from silty eolian deposits over loamy fluviomarine deposits. These soils are considered farmland of statewide importance.
BuA	Butlertown silt loam, 0 to 2 percent slopes	Soils of the Butlertown series are deep and moderately well-drained. They are typically found on inter-stream divides and formed from silty eolian deposits over fluviomarine sediments. These soils are considered prime farmland.
BuB	Butlertown silt loam, 2 to 5 percent slopes	Soils of the Butlertown series are deep and moderately well-drained. They are typically found on inter-stream divides and formed from silty eolian deposits over fluviomarine sediments. These soils are considered prime farmland.
BuC	Butlertown silt loam, 5 to 10 percent slopes	Soils of the Butlertown series are deep and moderately well-drained. They are typically found on inter-stream divides and formed from silty eolian deposits over fluviomarine sediments. These soils are considered farmland of statewide importance.
MuB	Mattapex-Urban land complex, 0 to 5 percent slopes	Soils of the Mattapex-Urban land series are deep and well-drained. They are typically found on low hills and knolls and formed from silty eolian deposits over fluviomarine deposits. These soils are considered not suitable for agriculture.
Up	Urban land	These lands consist of areas that have been previously developed and modified for residential, commercial, or industrial purposes.

Map Symbol	Mapping Unit	Soil Series Description
<i>Harford County (Havre de Grace)</i>		
BeA	Beltsville silt loam, 0 to 2 percent slopes	Soils of the Beltsville series are deep and moderately well-drained. They are typically found on broad inter-stream divides and formed from silty eolian deposits over loamy fluvio-marine deposits. These soils are considered farmland of statewide importance.
Cx	Cut and fill land	These lands consist of areas that have been previously developed and modified for residential, commercial, or industrial purposes.
MkB	Matapeake silt loam, 2 to 5 percent slopes	Soils of the Matapeake series are deep and well-drained. They are typically found on low hills and knolls and formed from silty eolian deposits over fluvio-marine deposits. These soils are considered prime farmland.
MIA	Mattapex silt loam, 0 to 2 percent slopes	Soils of the Mattapex series are very deep and moderately well-drained. They are typically found in inter-riverine settings and formed from silty eolian deposits over loamy fluvio-marine deposits. These soils are considered prime farmland.



-  Archeological Area of Potential Effects
-  Soils

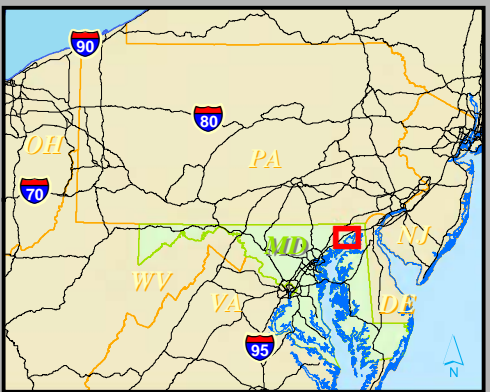
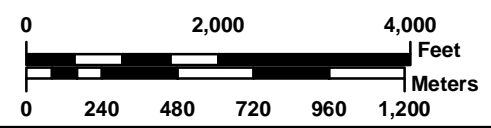


Figure 4
Soil Mapping Units within the
Archeological Area of Potential Effects
Susquehanna River Rail Bridge Project
Harford and Cecil Counties, Maryland
 Source: USGS, The National Map, 2013

3.0 HISTORIC CONTEXT

The following discussion serves as a synthesis of various sources regarding the known prehistory and history of the project area vicinity. This information provides a framework within which data gathered from the Phase IA investigations may be interpreted, placing it within a larger, regional context. Importantly, what follows conforms to the United States Department of the Interior's (USDI) Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines, as well as the Maryland Historical Trust's *Standards and Guidelines for Archeological Investigations in Maryland* (Shaffer and Cole 1994).

The prehistory of the Middle Atlantic region is divided into three distinct time periods; the Paleo-Indian Period (ca. 12,000 B.C. - 8,000 B.C.), the Archaic Period (ca. 8,000 B.C. – 1000 B.C.), and the Woodland Period (ca. 1000 B.C. - A.D. 1600). Similarities and differences regarding subsistence strategies, settlement patterns, paleoenvironments, and technologies serve as criteria for defining these time periods.

In consideration of these criteria, Early, Middle, and Late sub-periods have frequently been identified within the Archaic and Woodland Periods. Often these sub-periods serve as a basis for better understanding the gradual transition from one time period into another. The following discussion of the regional prehistory of Maryland and its Eastern Shore represents a summary based on current pre-contact archeological research, as well as regional and statewide-established pre-contact research contexts, specifically Custer (1983, 1986, 1989, 1994); Dent (1995); Beckermann (1993); Steponaitis (1983); Wanser (1982); Davidson (1981), and Pogue and Smolek (1985).

While it is important to note that the transition from one time period to another is a gradual process and often varies from one environmental setting to another, the regional prehistory of Maryland is divided into four specific time spans; the Paleo-Indian/Early Archaic Period (ca. 12,000 B.C. - 6,500 B.C.), the Middle Archaic Period (ca. 6,500 B.C. - 3000 B.C.), the Late Archaic/Early-Middle Woodland Period (ca. 3000 B.C. - A.D. 1000), and the Late Woodland Period (ca. A.D. 1000 - A. D. 1650). A fifth time period, the Initial European Contact and Settlement Period (A.D. 1600 - A.D. 1645), which focuses on the interaction of Native American Indian populations with arriving European groups, will also be presented in this discussion because it marks the beginning of the decline of pre-contact lifeways in the Middle Atlantic Region. The Initial European Contact and Settlement Period coincides with the beginning of the historic context known as the Contact and Settlement Period (A.D. 1608 - A.D. 1770).

3.1 Paleo-Indian Period/Early Archaic Period (ca. 12,000 B.C. - 8,000 B.C.)/(ca. 8,500 B.C. -6,500 B.C.)

The Paleo-Indian Period begins at the end of the Pleistocene, and ends with the onset of the Holocene. This transition between the Pleistocene and Holocene is marked by a change from cold glacial conditions to alternating wet and dry climates. The adaptations made by human populations to these fluctuating conditions characterize the Paleo-Indian Period. These populations practiced a hunter-gatherer subsistence with animal resources comprising much of their diet. Several cold-weather faunal species such as the now-extinct mastodon, the since-

migrated moose, as well as smaller, still present species, such as white-tailed deer, were supported by the various deciduous, boreal, and grassland environments which were once found throughout the Middle Atlantic region (Custer 1983, 1989; Marshall 1982).

Overall, throughout the time span of the Paleo-Indian/Early Archaic Period, settlement patterns remained relatively constant. Nomadic groups comprised of multiple or single family bands that focused on attractive hunting locales, such as watering holes, have been hypothesized (Custer 1983, 1986, 1989, 1996). Throughout the Middle Atlantic region, identified Paleo-Indian and Early Archaic site types have included quarry sites, hunting sites, base camps, as well as various associated support sites (Custer 1983, 1986, 1989, 1996).

Paleo-Indian tool kits reflect an emphasis on the procurement and processing of animal resources. Preferences for high quality lithic materials, such as chert and jasper, are apparent in lithic artifact assemblages recovered from Paleo-Indian sites. In addition, stone tools in these artifact assemblages show evidence of great care in stone tool maintenance and resharpening. One of the most distinctive artifacts associated with the Paleo-Indian Period is the fluted point, characterized by a channel which is removed from the center of the base to the center, or distal end, of the point.

One of the best known Paleo-Indian sites in the Chesapeake region is the Williamson Site, which is located on the western edge of Virginia's inner Coastal Plain in Dinwiddie County. Since its discovery in 1949, the Williamson Site has been subjected to extensive research (McCary 1983; Callahan 1979; McAvoy 1992). In addition to debitage, the site has yielded 175 fluted bifaces as well as assorted scrapers, spokeshaves, preforms, drills, graters, perforators, wedges, denticulates, beaks, hammerstones, and anvils (Callahan 1979; McCary 1983; Dent 1995). The majority of the knapped artifacts are made from Cattail Creek Chalcedony (a chert), a locally available material. Based on the excavation results, it is believed that the site was subjected to recurrent use throughout the Paleo-Indian Period (Dent 1995).

Although fluted points have been recovered throughout Maryland, unfortunately, many of these artifacts tend to represent isolated surface finds (Steponaitis 1983; Dent 1995). Nonetheless, two archeological sites in Maryland's Coastal Plain, the Paw Paw Cove Site and the Higgins Site, provide insight on the Paleo-Indian Period of this portion of Maryland, as well the state as a whole.

The Paw Paw Cove Site Complex is located on the eastern shore of Maryland in Talbot County. The complex consists of three main find spots (18TA211, 18TA212, and 18TA213) along a 500-meter stretch of the Chesapeake Bay shoreline. Once situated in an upland-type setting at the headwaters of two small tributaries, the site complex currently lies at the edge of the Chesapeake Bay due to severe erosion (Lowery 1989, 1990). Although most of the artifacts recovered from the Paw Paw Cove Site Complex were recovered from eroded and surface contexts along the shoreline, recent excavations have revealed that more interior portions of the complex, away from the strand line, still contain intact buried deposits (Lowery 1989, 1990).

Located in the Inner Coastal Plain on the Western Shore in Anne Arundel County, the multicomponent Higgins Site (18AN489) encompasses an upland promontory that rises above

two small drainages. Excavations at the Higgins Site have resulted in the identification of intact Paleo-Indian archeological deposits. Artifacts recovered from these deposits include several fluted (Clovis) point fragments, various flake tools, and debitage. It has been concluded that during the Paleo-Indian Period, the Higgins Site served as a small, short-term campsite at which game was processed (Ebright 1994).

A third site, the Pierpoint Site also promises to contribute insightful information on Maryland's Paleo-Indian Period. Excavations and surface collection at this site, located at the confluence of the Potomac River and Seneca Creek, have yielded several fluted points. Currently, comprehensive analysis of the site is ongoing (Dent 1995). Despite the limited data regarding the extent of Paleo-Indian habitation in Maryland, fluted points found throughout the state do indeed indicate use of the region during this early time period (Steponaitis 1983; Custer 1983; Davidson 1981). Archeological research of the Paleo-Indian Period in the Middle Atlantic region has suggested various operational site types of the Paleo-Indian Period. Hypothesized site types range from small hunting camps to large sites associated with lithic material procurement activities (Custer 1983, 1989; Dent 1995; Marshall 1982; Bonfiglio and Cresson 1982).

For the most part, as is apparent by the coincidence of Paleo-Indian and Early Archaic occupations at various sites, Early Archaic sites seem to occur in similar environmental settings and exhibit many characteristics attributed to known Paleo-Indian Period sites (Watson and Custer 1990; Dent 1995). While similarities in the overall tool assemblages are apparent, Early Archaic point assemblages are marked by the introduction of side- and corner-notched projectile points. Regionally, the Early Archaic Period may represent minor adaptive shifts responsive to the rising emergence of Holocene environments toward the end of the Paleo-Indian/Early Archaic Period.

Aside from small occupations at some of the larger multi-component sites, such as the Higgins Site (18AN489), few Early Archaic Period occupations in Maryland have been subjected to thorough investigation.

One of the more studied Early Archaic sites of Maryland is the Crane Point Site (18TA221) in nearby Talbot County (Lowery and Custer 1990). Located on a small point that juts out into the Chesapeake Bay just east of the mouth of a small stream, the site contains several Late Paleo-Indian/Early Archaic occupations. Studies suggest that at the time of its use, the site fell within a more interior, upland knoll-type setting that was flanked with assorted freshwater wetlands. Systematic surface collection along the Crane Point beach line, and test excavations at the site have yielded over 500 lithic artifacts. In addition to debitage, these artifacts include various projectile points, bifaces, cores, as well as flake and ground stone tools. Flake tools from the site include a diversity of scrapers, slug-shaped unifaces, graters, denticulates, and wedges. Point types from the site include assorted Dalton/Hardaway, Amos, Charleston, and Kirk/Palmer notched variants. Flotation samples processed from an eroding hearth feature at the site yielded Amaranth and Chenopodium seeds and hickory nut and butternut fragments (Lowery and Custer 1990). Based on the excavation results, the Crane Point Site has been concluded to be the remains of a base camp (Lowery and Custer 1990).

One of the state's notable Early Archaic occupations has been documented at the multicomponent Indian Creek V Site (18PR94), which occupies a broad floodplain adjacent to the confluence of Indian and Beaver Dam Creeks in Prince George's County (Leedecker and Holt 1991). Studies of the Indian Creek V Site (18PR94) have been revealed that the site was repeatedly used as a short-term procurement station during the Early Archaic Period.

3.2 Middle Archaic Period (6,500 B.C.-3,000 B.C.)

Several adaptive strategies of pre-contact human populations to the emergence of stable Holocene environments define the Middle Archaic Period. By 6,500 B.C. mesic forests of hemlock and oak flourished in several sections of the Middle Atlantic region, including Maryland's Eastern Shore (Custer 1983). Reduction of open grasslands forced the extinction or migration of many of the cold weather browsing megafauna which were critical to the subsistence of Paleo-Indian/Early Archaic Period groups. In addition, rises in sea level created interior swamp, marsh, and estuarine environments. These new environments supported a wide variety of floral and faunal species such as deer, migratory waterfowl, anadromous fish, and both fresh- and salt-water shellfish (Custer 1983, 1986, 1989). Consequently, Middle Archaic populations began to take advantage of the availability of these various new resources. Overall, the Middle Archaic Period is characterized by a noticeable shift from a hunter-gather strategy to a foraging lifestyle.

Middle Archaic tool kits in the region also reflect a more generalized foraging subsistence. Unlike the specialized hunting Paleo-Indian and Early Archaic tool kits, Middle Archaic tool kits often include plant processing tools, such as mortars and pestles, as well as ground stone tools, including adzes and axes. The appearances of these types of tools are indicative of a greater dependence on plant resources (Custer 1983, 1989). Like their predecessors, Middle Archaic groups were also nomadic; however, these groups migrated throughout the area to take advantage of the broad range of environmental settings and resources on a seasonal basis. Growth and reduction of group size also occurred seasonally.

Common point types of the Middle Archaic Period are bifurcate-based point types such as St. Albans, Le Croy, and Kanawha (Dent 1995; Custer 1984, 1994). Other Middle Archaic projectile points include Stanly, Morrow Mountain, Guilford, and Neville types (Dent 1995; Custer 1983, 1984, 1994).

Over the past decade, various comparative studies have provided new insight into projectile point types of the Middle Archaic Period. Studies such as Custer (1996, 2001) have examined several stemmed point variants, such as Poplar Island, Bare Island, Piney Island, and Pequea points. Throughout the Middle Atlantic region, these stemmed variants often coincide with sites that contain Middle Archaic occupations. In the past, these stemmed variants have been recovered from good subsurface contexts and in clear association with occupations that ranged from the Middle Archaic Period to the Middle Woodland Period. In the past, these stemmed variants have been regarded as not particularly diagnostic because of their prolonged use. For similar reasons, traditionally, these points have also been attributed to later time periods. However, the results of comparative analyses of the spatial and temporal distribution of these points throughout the Middle Atlantic region indicate that the use of these stemmed variants was more common during

the Middle and Late Archaic Periods than originally thought (Custer 1994, 1996, 2001). In addition to reflecting the continuity of cultural traditions, these findings also demonstrate the gradual transition from Middle Archaic to Late Archaic.

Throughout the eastern United States, including Maryland, Middle Archaic sites tend to be found in a variety of riverine, lacustrine, and coastal settings. In Maryland, the Middle Archaic Period also marks notable increases in the use of interior wetland settings, such as upland swamps, interior ridgetops, ponds, marshes, and springheads, and settings near stream junctures and along tributary floodplains (Gardner 1987; Wall 1990; Stewart 1989; Steponaitis 1983; Rappleye and Gardner 1979). These environments often contain a diversity of Middle Archaic site types that range from small processing or procurement sites to base camps of various sizes (Custer 1983, 1989, 1996).

While many of the larger multi-component sites date predominately to later periods, these sites often contain Middle Archaic occupations. Middle Archaic components have been encountered at the aforementioned Higgins Site and at the Surratts Road Site (18PR404), which is located along Piscataway Creek in Prince George's County (Munford 1993).

Occupations dating to the Middle Archaic Period have also been identified at the Indian Creek V Site (18PR94) in Prince George's County. Interestingly, by comparison, these occupations date to the earlier part of the Middle Archaic Period and are notably less well-represented at the site than those dating to the Early or Late Archaic time periods. It is believed, for the most part, use of the site was practically abandoned for most of the Middle Archaic Period. It has also been suggested that the disuse of the site during the Middle Atlantic Period may be a reflection of changing environmental conditions of the site's setting (Leedecker and Holt 1991).

3.3 Late Archaic Period/Early-Middle Woodland Period (3,000 B.C. - A.D. 1,000)

The Late Archaic/Early-Middle Woodland Period is defined by pronounced environmental alterations occurring throughout the Middle Atlantic region (Custer 1983, 1986, 1989). While the Late Archaic, Early Woodland, and Middle Woodland Periods all possess their own distinguishing characteristics, because of their overall similarities, cumulatively, these three periods have often been regarded as a general time period. For example, in the neighboring state of Delaware this 4,000-year period of time has been called the Woodland I Period (Custer 1986, 1989, 1994; Watson and Custer 1990; Custer and Silber 1994), and in southeastern Pennsylvania, this time span has been referred to as the Intensive Gathering-Formative Culture Period (Custer 1996).

Locally, on the Eastern Shore of Maryland, this time frame is associated with severe climatic shifts that resulted in warm and dry conditions (Custer 1989). These changes enabled xeric and deciduous forests of oak and hickory to replace mesic forests, as well as the return of grassland areas. Although many of the existing interior wetland settings of the Middle Atlantic region disappeared, the slow but continued rise in sea level resulted in the emergence of new large brackish marshes, especially near the Chesapeake Bay. Stabilization of the climate, environment, and sea level were established by ca. 1,500 B.C. and these conditions were probably relatively

similar to present ones (Custer 1983, 1989). This alteration of the environment also caused notable changes in the adaptive strategies of pre-contact populations. Floodplains of major rivers and estuarine swamp/marsh settings supported a broad range of floral and faunal resources. Throughout the Coastal Plain of the Middle Atlantic, large archeological sites, which often contain several different occupations, have been documented in such environmental settings. Similar base camp sites, barring regional variations, have also been identified in these resource-rich environments throughout the Middle Atlantic region.

Smaller base camps are often located along lesser tributaries, near cobble beds, or in coastal areas near shell middens. Small procurement and processing sites are also scattered throughout these environments, as well as along intermittent streams and in interior areas (Custer 1994). Along the southern coastline of the state, marine resources were integral in the subsistence of Late Archaic/Early-Middle Woodland populations. Sites dating to this time period are often found near tidal marshes, in sheltered coves, or in estuarine settings. Especially favored locations would be these types of settings that would have supported a diversity of resources such as ocean fish, crabs, and shellfish.

Although small short-term forays, for purposes such as hunting or obtaining raw lithic materials were made, in general, Late Archaic/Early-Middle Woodland Period groups seemed to have practiced a relatively sedentary settlement pattern. Group sizes seem to have ranged anywhere from small individual family units to conglomerations of several of these units dependent on seasonality or environmental setting (Custer 1989, 1994; Custer and Silber 1994).

Significant additions to pre-contact tool kits also appear during the Late Archaic/Early-Middle Woodland Period. Increased use of plant processing tools, such as grinding stones, mortars, and pestles, suggest a trend in efficient and intensive procurement of floral resources. Tools associated with woodworking, such as adzes and celts, become prevalent. More broad-bladed, knife-like processing implements also appear in chipped stone tool assemblages. Overall, procurement of raw lithic material was based on primary and secondary sources; however, often non-local lithic materials are found within Late Archaic/Early-Middle Woodland Period assemblages. The presence of these imported materials suggests emergence of trade and exchange networks among these groups (Custer 1989, 1994).

The addition of stone, followed by ceramic, vessels also reflect a growing efficiency in the use of certain food types. Most of these vessels served as cooking implements. Some of the larger ceramic vessels may have served as storage vessels for surpluses. Storage pits and house features have been identified at numerous sites dating to this time throughout the Middle Atlantic region (Custer 1989, 1994; Custer and Silber 1994).

This new, relatively sedentary, settlement pattern also caused considerable changes in social organization of populations living in the Middle Atlantic region. A more sedentary lifestyle combined with horticultural plant harvesting would have often yielded occasional surpluses. Consequently, these factors often allowed incipient ranked societies to form. For example, during the Middle Woodland Period, intensified procurement of fish resources is thought to have played a significant role in subsistence strategies within the Abbott Farm National Landmark near Trenton, New Jersey (Stewart 1994). Across the Middle Atlantic region, objects such as

polished celts, gorgets, pipes, and tools of non-local materials appear to be manifestations of developing social organization.

The emergence of Adena culture, characterized by its unique material culture and mortuary practices, also occurs during the Early Woodland portion of this time frame. While Adena sites are more prevalent in the American Midlands, a few Adena sites have also been discovered in Maryland. Some of the better known Adena sites of Maryland are the Sandy Hill Site (18DO30) on the Choptank River near Cambridge (Ford 1976; Dent 1995; Custer 1989); the West River Site near Annapolis, and the Nassawango Adena Site (18WO23) (Wise 1973), which is along a small tributary of the Pocomoke River. In addition to large Adena-type bifaces made of non-local, high quality cryptocrystalline lithic material, some of these sites have yielded distinctly Adena-type artifacts that have included gorgets, pipes, or copper beads (Dent 1995).

Projectile points associated with the Late Archaic/Early-Middle Woodland Periods are quite diverse. For example, the Late Archaic Period marks the introduction of broadspear-type projectile points, which are believed to have functioned in knife-like capacities (Custer 1994). Common broadspear-types of the Mid-Atlantic region include Long/Savannah River, Perkiomen, Susquehanna, and Lehigh/Koens-Crispin types (Custer 1994; Dent 1995). Common non-broadspear points of the Late Archaic Period include Fishtail/Orient, Holmes, Halifax, Piscataway, and Bare Island/Lackawaxen types, as well as various side- and corner-notched Brewerton variants.

Numerous Early-Middle Woodland projectile point types have been noted for the Middle Atlantic region. Generally, most of these types consist of assorted stemmed and notched variants; however, several distinctive point types are also associated with the Early and Middle Woodland period. Rossville, teardrop/ovoid, and Calvert projectile points are typical distinctive Early Woodland point types of the Chesapeake region. Selby Bay/Fox Creek and Jack's Reef variants are regarded as common forms associated with the Middle Woodland Period (Dent 1995).

Early ceramic vessels were modeled in construction and closely resembled the lug-handled, flat-bottom steatite vessels of the early Late Archaic Period. Marcey Creek (ca. 1200-800 B.C.) ceramic, a steatite-tempered ware, is one of the earliest wares of the Mid-Atlantic region and is often found in association with Fishtail/Orient points (Custer 1989, 1994, 1996). Later, these flat-bottomed vessels were replaced with conoidal-shaped vessels of coiled construction. While early vessels of this construction were often tempered with steatite (e.g., Selden Island, Bare Island Coiled), eventually, assorted materials that include sand, crushed rock, grit, clay, shell, or various combinations thereof, were used as tempering agents in ceramic manufacturing. For example: sherds of Accokeek ceramic, a sand/crushed rock (quartz) tempered ware, is a recurrent ware type that has often been recovered in Early Woodland contexts throughout Maryland's Coastal Plain and into the Piedmont beyond the headwaters of the Patuxent River and into the Patapsco drainage. This ware has also been found throughout the Potomac watershed (Dent 1995).

3.4 Late Woodland Period (A.D. 1000-A.D. 1650)

Overall, the Late Woodland Period, often referred to as the Woodland II Period, is characterized by an emergence of pronounced agricultural food production systems (Custer 1984, 1989). The growth of efficient plant food harvesting is a reflection of a continued pattern of sedentism of pre-contact populations. Throughout the Delmarva Peninsula, Late Woodland sites are often found in similar environmental settings as Late Archaic, Early and Middle Woodland Period sites. In fact, these sites often contain several occupations that span multiple temporal contexts and these occurrences further illustrate a more sedentary lifestyle.

In the Middle Atlantic Region, significant variability in the subsistence systems, social organization, and community patterns existed among Late Woodland populations. These differences ranged from societies who lived in large villages organized by kinship groups to some of the less complex populations whose lifeways closely resembled those of their Middle Woodland predecessors (Custer 1983, 1989, 1996).

Aside from some modifications in projectile point and ceramic styles, deviations of Late Woodland artifact assemblages from Middle Woodland assemblages are minimal. Lithic assemblages suggest decreases in preference for exotic materials and increases in the use of quartz in tool manufacturing. By comparison, Late Woodland projectile point types are less varied and triangle points are regarded as the primary diagnostic point type of this period. Late Woodland ceramic assemblages exhibit notable increases in variation, especially the non-shell tempered wares (Wanser 1982). Common Late Woodland ceramic types that have been recovered on the Eastern Shore include Rappahannock and Townsend wares, both of which are shell-tempered. Other common Late Woodland ceramic types include Sullivan and Potomac Creek pottery, which are shell-tempered and quartz/sand tempered, respectively.

3.5 Initial European Contact (1600-1650)

This period marks the initial arrival of European groups, predominately Dutch and English, to the Middle Atlantic region. Overall, data from the archeological record of this time period is limited. Often, ethnographic accounts by these first explorers and settlers have been considered valuable supplementary sources of information.

Based on ethno-linguistic and ethnographic accounts, throughout the Late Woodland period, two Native American cultural groups, the Nanticokes and the Piscataway were quite active in the region. However, by 1634, the stronghold of southern Pennsylvania Susquehannocks, an Iroquoian-speaking group, had extended throughout the Chesapeake Bay area and southward over Maryland's Western Shore. According to historical accounts, during his travels along the Potomac and Anacostia Rivers in 1609, John Smith visited several palisaded Piscataway villages.

Several groups of indigenous people inhabited Maryland's Western and Eastern Shore at the time of arrival of the first Europeans. In addition to the Susquehannocks on the upper reaches of the shore, these groups included the Nanticoke, Choptank, Wicomiss (also referred to as the "Ozinies"), Matapeake, and Tockwogh, who lived in the central and southern portions of Maryland's eastern shore (Millis and Wall 2006; Kingsley 2006).

Although other attempts are reputed, the first documented exploration of present-day Maryland was conducted by Captain John Smith. In June 1608, Smith became the first Anglo-European to explore and map the Upper Chesapeake Bay, as well as to make contact with Native Americans (**Figure 5**). According to historical accounts, Smith managed to lead the expedition as far north as “Bolus flu” (present-day Patapsco River) before illness forced the party to return to Virginia. A month later, Smith led a second expedition of the Upper Chesapeake. During this journey, Smith explored various waterways of Kent, Harford, and Cecil Counties. Several weeks later, after passing what is now Spesutia Island, Smith reached the Susquehanna River. While exploring the Deer Creek area on foot, Smith and his crew first encountered Susquehannocks.

Smith was obviously impressed and wrote detailed narratives about the Susquehannocks’ physical appearance, attire, and lifeways (Weeks 1996). Though Smith provided the world with its first glimpse of the area, it would be some time before significant European settlement on the Eastern Shore occurred.

Around 1616, an Englishman named Edward Palmer established a trading post on Palmer’s Island (currently Garrett Island) at the mouth of the Susquehanna River. While the post managed to operate for a few years, its success was short-lived. By the time of his death in 1624, Palmer had relocated back to London.

Around 1629, after visiting his failing land interests in Newfoundland, George Calvert (named the first Lord of Baltimore by King James of England in 1625) traveled to the Chesapeake Bay area in search of lands in a more favorable climate. Shortly after his return to England, Calvert began petitioning for rights to lands north of the Potomac River. Despite Calvert’s persistent campaigning, King Charles remained reluctant to approve the petition for several years. Finally, on June 20, 1632, two months after George Calvert’s death, the charter was approved and Calvert’s son, Cecil, became the first proprietor of Maryland.

The year 1631 marked the first colonial settlement on the Eastern Shore. Virginian William Claibourne established a fort and trading post on Kent Island to trade with the indigenous peoples for furs. By 1636, a gristmill was in operation on the island. Tax records indicate that forty-nine taxable residents resided on the island in 1638 and ninety-eight in 1642 (Fiedel 1999). According to local historical accounts, the early settlement of St. Michaels, on the leeward side of Kent Island, also began around this time (<http://stmichaelsmd.org/pages/History>).

The 1630s also marks the onset of colonization of Maryland’s Western Shore and mainland. Similarly, efforts to colonize the Atlantic Ocean coastline (or the Delaware) side of the Eastern Shore were also occurring.

In 1634, Maryland’s first colonists from England arrived at the mouth of the Potomac River in two ships, the *Arc* and the *Dove*. After a brief stay on Saint Clement’s Island, Leonard Calvert, Cecil’s brother, lead the *Dove* to Piscataway Creek via the Potomac River to initiate negotiations with members of the Piscataway tribe. In March 1634, the colonists purchased a village on the mainland and renamed the settlement St. Mary’s City (Virta 1998). Three years later, in 1637, Saint Mary’s County, which included both shores of the Chesapeake Bay, was created. For the

next several decades, St. Mary's County continued to lose and gain land as new counties were formed (e.g. Anne Arundel - 1650). In 1642, the lands on the east side of the Chesapeake Bay were removed from the county and established as Kent County.

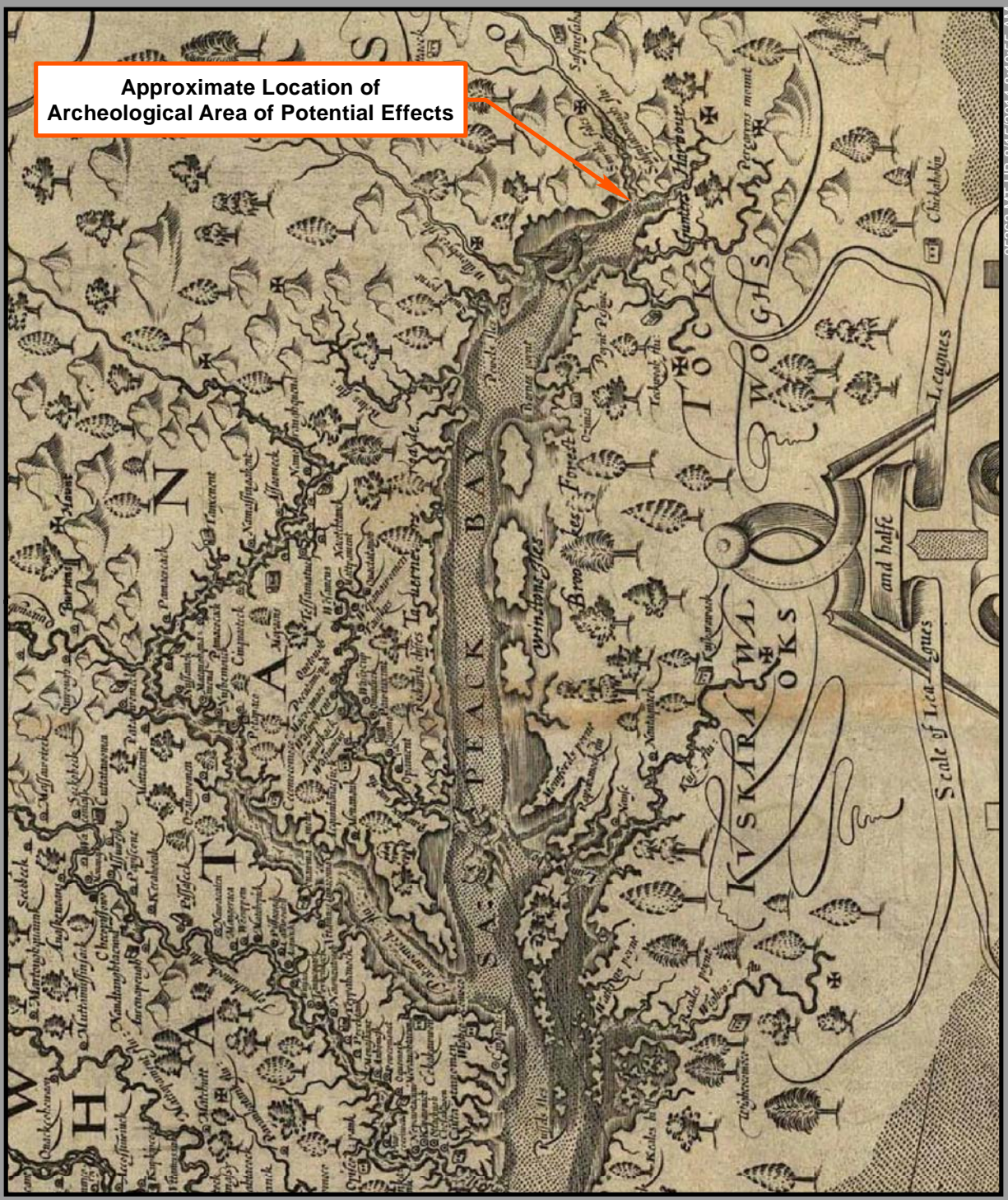
Shortly after his arrival, Calvert challenged Claiborne's rights to Kent Island. Calvert claimed ownership of the island through his land grant. Though Claiborne resisted, Calvert eventually brought Kent Island under Maryland control in 1657. By 1659, large land grants had been given along the Choptank River, and tobacco had become established as the major crop in the area (Preston 1983; Kingsley, Benedict, and Katz 2006).

As settlement of the Eastern Shore began to increase, so did tensions between the colonists and Native American tribes. The tribes' traditional seasonal hunting and farming practices continued to be disrupted by settlers and traders, and by the accompanying deforestation. Colonial authorities made some attempts to protect the tribes and facilitate coexistence; however, their suggestions were often ignored. In 1642 and 1647, Maryland Governor Thomas Greene ordered Capt. John Price "...to take thirty or forty able men, with sufficient arms, ammunition, and provisions, and embark for the Eastern Shore to attack the towns of Nanticokes and Wiccomiss (Weslager 1983, p74)." A treaty, the first of five, was signed in 1668 by Chief Unnacokasimmon to establish peace with Maryland colonists.

Around this time, the Dutch also became increasingly wary of English settlement around the Chesapeake Bay and Virginia. Dutch concern was justifiable since Lord Baltimore regarded the Chesapeake Bay's eastern shore (as well as much of western Delaware) to be under his proprietorship (all of which he called Somerset County). In 1659, the Dutch constructed a small fort named Whorekil (alternately Hoerenkil, Horekill, Hoorekill) at the mouth of the Delaware Bay near Lewes to maintain watch on English settlement in the area.

Domestic architecture during this period was characterized by one- or two-story, one-room plan dwellings made of wood; agricultural outbuildings included structures related directly to the tobacco and grain economy such as frame tobacco sheds, small barns, or structures to house hogs and cattle (Catts, Custer, and Hawley 1994).

Transportation was conducted primarily along navigable waterways; however, gradual increases in settlement slowly encouraged the expansion of ground transportation. In 1661, the General Assembly passed an act to improve the existing land transportation system through the construction of new public roads and bridges. Specifically, the act called for "marking and making highwayes and making the heads of Rivers, Creeks, Branches, and Swamps passable for horse and foot". To ensure that the mandates of road construction were met, the act allowed counties to appoint commissioners to oversee roadwork. The act also included provisions to preserve rights for creating private access roads. Penalties were payable in tobacco (www.sha.state.md.us/keepingcurrent/maintainRoadsBridges/bridges/OPPE/historicBridges/IIE_Rds.pdf).



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**Approximate Location of
Archeological Area of Potential Effects**

Figure 5

**Detail of John Smith's Map of Virginia (1608-1612) Depicting the
Approximate Location of the Archeological Area of Potential Effects**



**Susquehanna River Rail Bridge Project
Harford and Cecil Counties, Maryland**

Source: John Smith's Map of Virginia, 1608-1612

Not to Scale

3.6 Contact and Settlement Period (1600-1750)

Prior to European arrival in Maryland, the area was already home to a complex network of Indian settlements and chiefdoms. Early exploration of the modern-day Harford and Cecil county area essentially began with Captain John Smith's treks up the Susquehanna River in 1608. During these expeditions Smith and his crew first encountered the Susquehannocks. Smith wrote detailed narratives about the Susquehannocks' physical appearance, attire, and lifeways (Weeks 1996).

As European colonization gained a foothold in the New World, there was an emerging need for a consistent system to traverse the Susquehanna River (*Figure 6*). At the mouth of the river, Lower Susquehanna Ferry was first licensed in 1695, it consisted of several tracts of land that were first granted to Godfrey Harmer by the Lord Proprietor of Maryland in 1658, he called the area

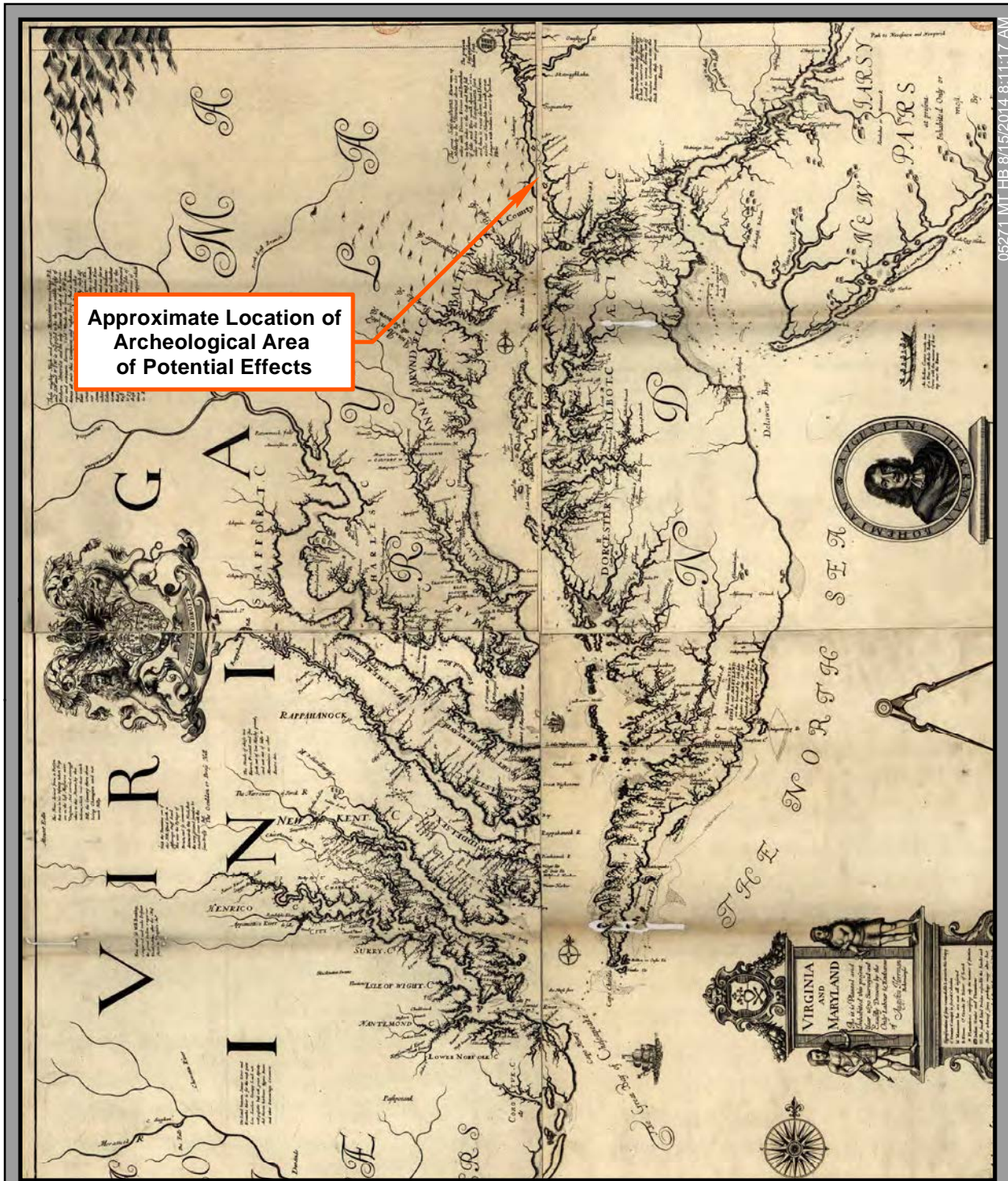
"Harmer's Town," and gave the land to Thomas Stockett a year later. In 1666, a road called, "Post Road" ran from Philadelphia to New York in the North to Baltimore and other towns to the south (Bilicki 2003). This road encouraged several ferry systems to begin operation at the Susquehanna River between Post Road on the Havre de Grace side and Post Road on the Perryville side.

The tavern located at the western terminus of the ferry, Rodger's Tavern was owned by the ferry's first operator, John Rodgers. On the other side of the river was another tavern, Stevenson's tavern. This was later bought by John Rodgers as well and he operated the ferry and both taverns on either side of the ferry's path (Gerstell 1998, p. 6). Prior to this time there was a small fishing village in the vicinity of Havre de Grace and the ferry, but there were very few people in the area before the ferry was established.

In 1630, King Charles I of England granted a charter for the exclusive right of the colony of Maryland to George Calvert. By 1634 St. Mary's City, Maryland was established as the first settlement with 150 colonists living on the new land. The second Proprietary Governor of the Province of Maryland, Cecilius Calvert formed Cecil County, Maryland in 1674, a year before his death.

In 1751, Frederick Calvert (the great-great-great-grandson of George Calvert) inherited the Proprietary Governorship of the Province of Maryland. In 1773, Frederick Calvert formed Harford County from Baltimore County. He named the county Harford after his illegitimate son, Henry Harford.

Both Havre de Grace in Harford County and Perryville in Cecil County were important to early settlement because of their location at the mouth of the Susquehanna River and the trading post established by William Claiborne in 1637, located on Garrett Island between the two towns. At his Trading Post, Claibourne traded items with indigenous peoples for furs. Because of the proximity of Havre de Grace to the Susquehanna River and Chesapeake Bay, the city of Havre de Grace adopted oyster and crab harvesting as their main export.



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Approximate Location of Archeological Area of Potential Effects

Figure 6

**Detail of Augustine Hermann's Map of Virginia and Maryland (1673)
 Depicting the Approximate Location of the Archeological Area of Potential Effects**



**Susquehanna River Rail Bridge Project
 Harford and Cecil Counties, Maryland**

Source: Augustine Hermann's Map of Virginia and Maryland (1673)

Not to Scale

3.7 Rural Agrarian Intensification (1750-1815)

From a military standpoint, the American Revolution had a small effect on Havre de Grace and Perryville since no significant battles were fought in the area.

However, many people ended up assisting in the war effort, and many continental troops traveled across the Susquehanna by the Havre de Grace Ferry. Jean Baptiste and Count de Rochambeau led 6,000 French soldiers across the river and camped along Old Post Road in Perryville (Bates 2006, p. 44).

The most notable American soldier from the area was Colonel John Rodgers, Sr., who served in the militia during the Revolutionary War and served as host, on several occasions, to George Washington and Marquis de Lafayette when they stayed at Rodgers' home and tavern in Perryville. The name of the city of Havre de Grace is credited to Marquis de Lafayette during the Revolutionary War. It was stated that it reminded him of Le Havre, France, and Colonel John Rodgers, Sr. thought the name would add distinction to the town (**Figure 7**). After the Revolutionary War, Havre de Grace was considered for the capital of the United States, but it lost by one vote.

Havre de Grace, however, was not spared from the ravages of the War of 1812. The Perryville iron ore site, Principo's Furnace, would attract the British and bring them into the Susquehanna River in 1813. The British sailed up the Chesapeake Bay blockading ports and destroying towns along the way. The British arrived at the mouth of the Susquehanna River on May 3, 1813 with 400 troops and attacked, burned, and pillaged the town of Havre de Grace and Principo's Furnace. Within a few hours two-thirds of Havre de Grace was destroyed, in addition to a boat yard, vessels, and Principo's Furnace. Few structures survived the attack of Havre de Grace, including the Aveihle-Goldsborough House, the exterior walls of St. John's Episcopal Church, and the Elizabeth Rodgers House (Noll 2011). One Havre de Grace resident, John O'Neill, the lighthouse keeper, attempted to defend Havre de Grace by firing cannons at the British, but he was captured and was only spared his life because his daughter pleaded with the admiral of the British troop (Noll 2011). In 1814, a survey and a tax assessment were conducted to begin the two-decade process of rebuilding Havre de Grace after the War of 1812.

3.8 Agricultural-Industrial Transition Period (1815-1870)

As a result of the Susquehanna River's position between Maryland and Pennsylvania, the towns of Havre de Grace and Perryville developed as an important transportation crossroads for the transport of tobacco and wheat. Multiple ferry crossings were established in the area by the mid-nineteenth century (**Figure 8**). The area soon provided many accommodations for travelers of this north-south route. These towns also relied on fishing, most specifically the harvesting of oysters and crabs, and ice harvesting. These industries were not as reliant on slave labor, and Havre de Grace was a primary town on the Eastern Route of the Underground Railroad. Slaves crossed the Susquehanna in an attempt to reach Pennsylvania (Still 1872, p. 105). The customary method for the transporting of slaves via ferry was for the agent of the Underground Railroad to

light a fire on the Havre de Grace side of the river, which provided notice to an agent on the other side of the river in Perryville. This person would understand the signal and would cross in the boat to receive the escaped slave (Still 1872, p. 684).

To prevent Maryland's secession, Federal troops occupied the state starting in May 1861. By the Civil War there was a large free African American population located within Havre de Grace. It was one of seven sites designated for the recruiting of "U.S. Colored Troops."

In 1866, after the war, the Philadelphia Wilmington & Baltimore Railroad (PW&B) completed a wooden single track bridge which allowed passengers and goods to cross the river without the aid of a ferryboat. Prior to this time, the Susquehanna Ferry had a 238 ft. long ferry to transport entire trains from one side of the river to the other. The ability of trains to cross the Susquehanna at this location caused a decline in the use of the ferry, during this time frame maps begin to show the railroad bridge in place of where the ferry used to cross (*Figures 9 and 10*).

3.9 Industrial/Urban Dominance (1870-1930)

After the Civil War, the city's river tied it to northern industry and provided urban jobs for free blacks. The beginning of a new century meant that Havre de Grace would undergo many improvements. In 1906, the Pennsylvania Railroad replaced PW&B crossing with a new metal bridge that featured a center swing span which could be rotated to allow taller ships and other river traffic to pass safely (*Figures 11 and 12*). The alignment of this new bridge is located several feet to the north of the alignment for the previous 1866 wooden bridge. While the deck for the 1866 bridge is no longer extant, the stone piers for this structure may still be seen within the Susquehanna River channel. In addition, one of the 1866 bridge stone abutments may be observed along Avenue A near the waterfront, just south of Perryville.

A racetrack was opened in Havre de Grace that attracted a new group of travelers and tourists, making it a popular location for gamblers and gangsters to visit. It was one of four racetracks in the state and many famous Triple Crown winners and other famous racehorses raced there. In 1951, the racetrack was sold to the Maryland National Guard. The industrial facilities in Perryville helped during the war effort for both world wars. The federal government purchased facilities at Perry Point in Perryville for the training of recruits. In Port Deposit, the Wiley Company was a builder of steel assemblies and they provided materials for the Lease Lend Act before World War II (Bilicki 2003).

Duck hunting was also beginning to attract seasonal tourists to the area. As farming steadily declined in the area after World War II, transportation and tourism became the main occupations for the residents of the Havre de Grace and Perryville area.

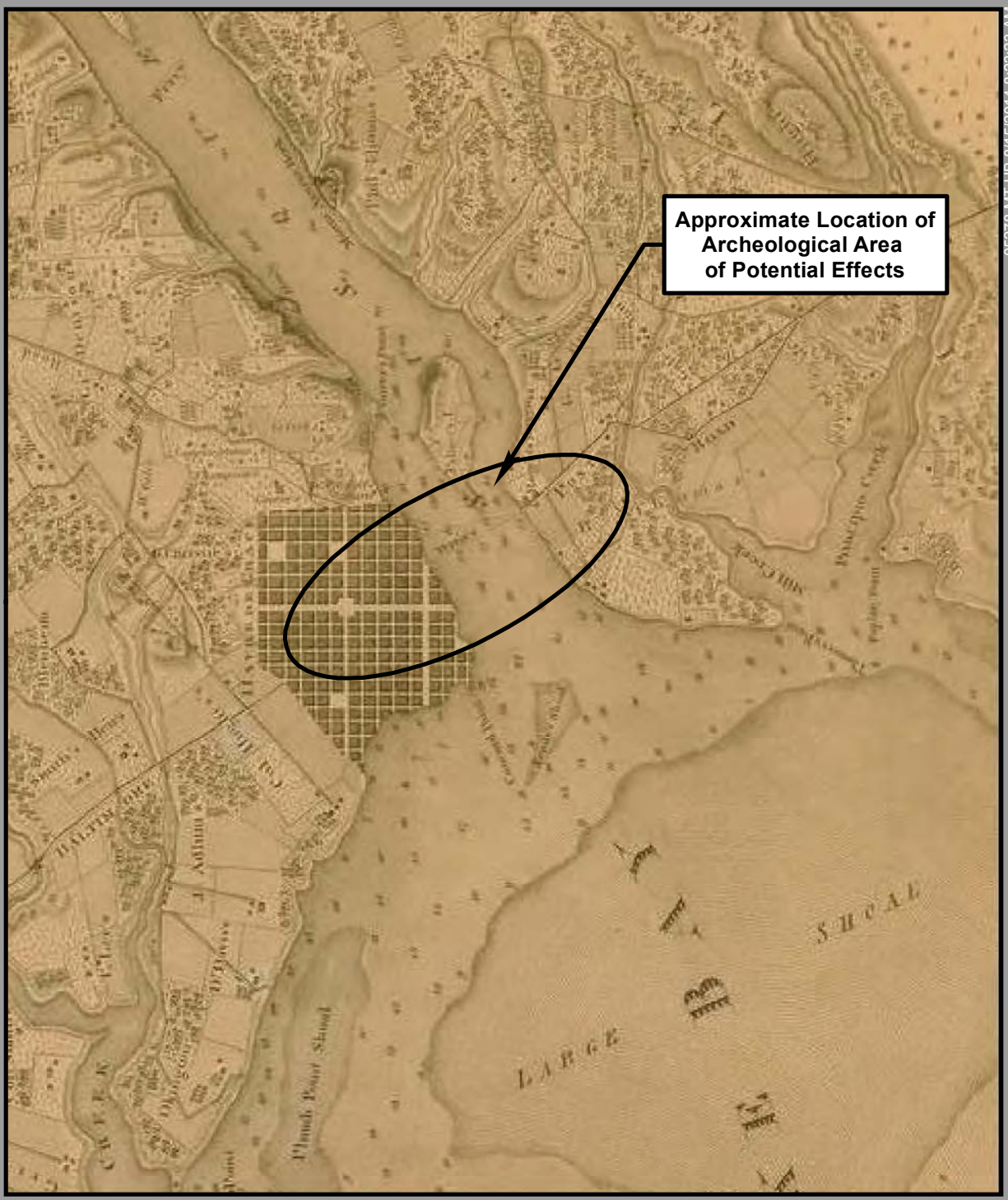


Figure 7

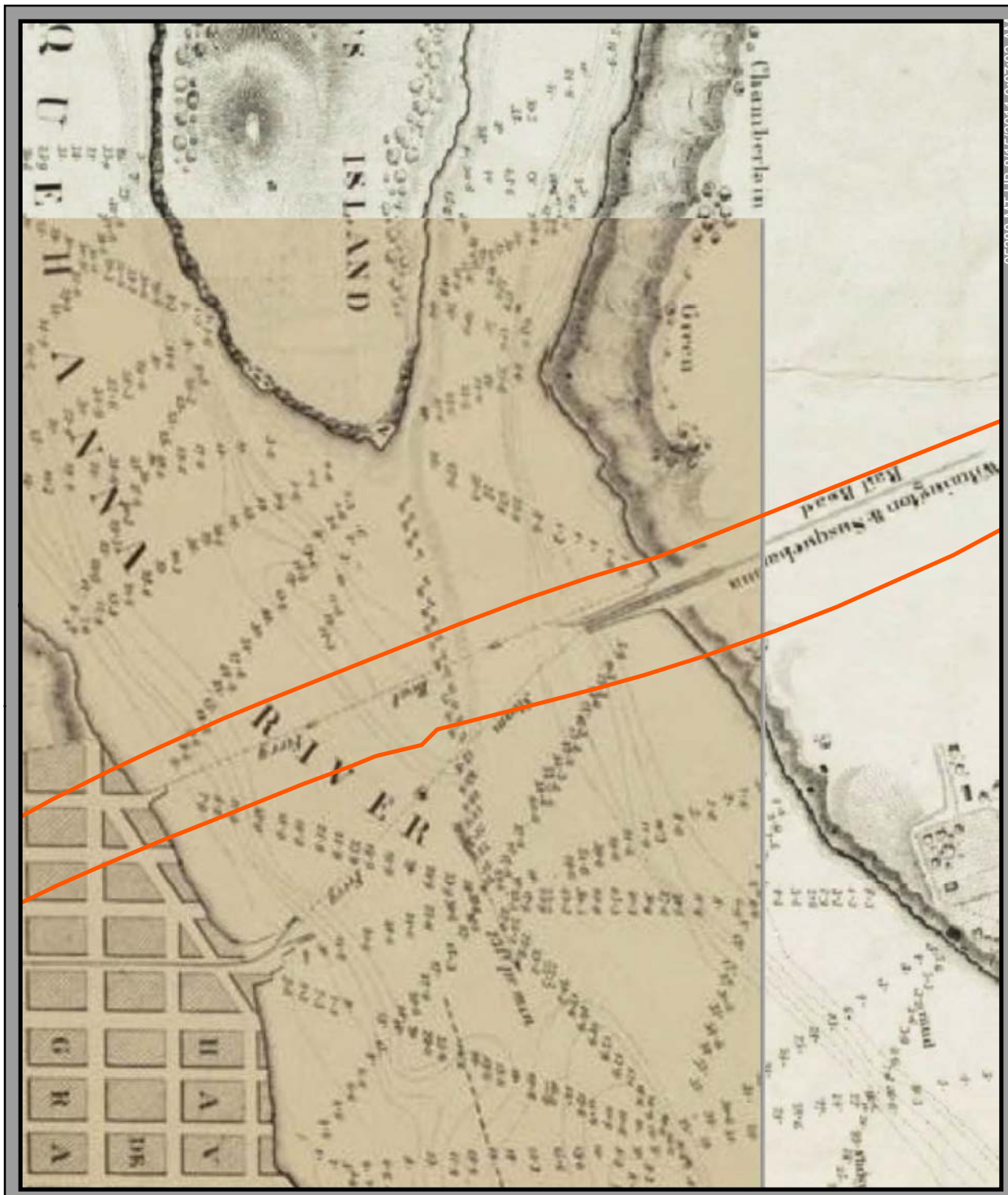
Detail of Hauducoeur's Map of the Head of Chesapeake Bay and Susquehanna River (1799)
Depicting the Archeological Area of Potential Effects

Susquehanna River Rail Bridge Project
Harford and Cecil Counties, Maryland

Source: Hauducoeur's Map of the Head of Chesapeake Bay and Susquehanna River, 1799




Not to Scale



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Figure 8
Detail of T.J. Lee and C.N. Hagner's Chart of the Mouth of Susquehanna River
and Head Waters of Chesapeake Bay, Maryland (1856)
Depicting the Archeological Area of Potential Effects

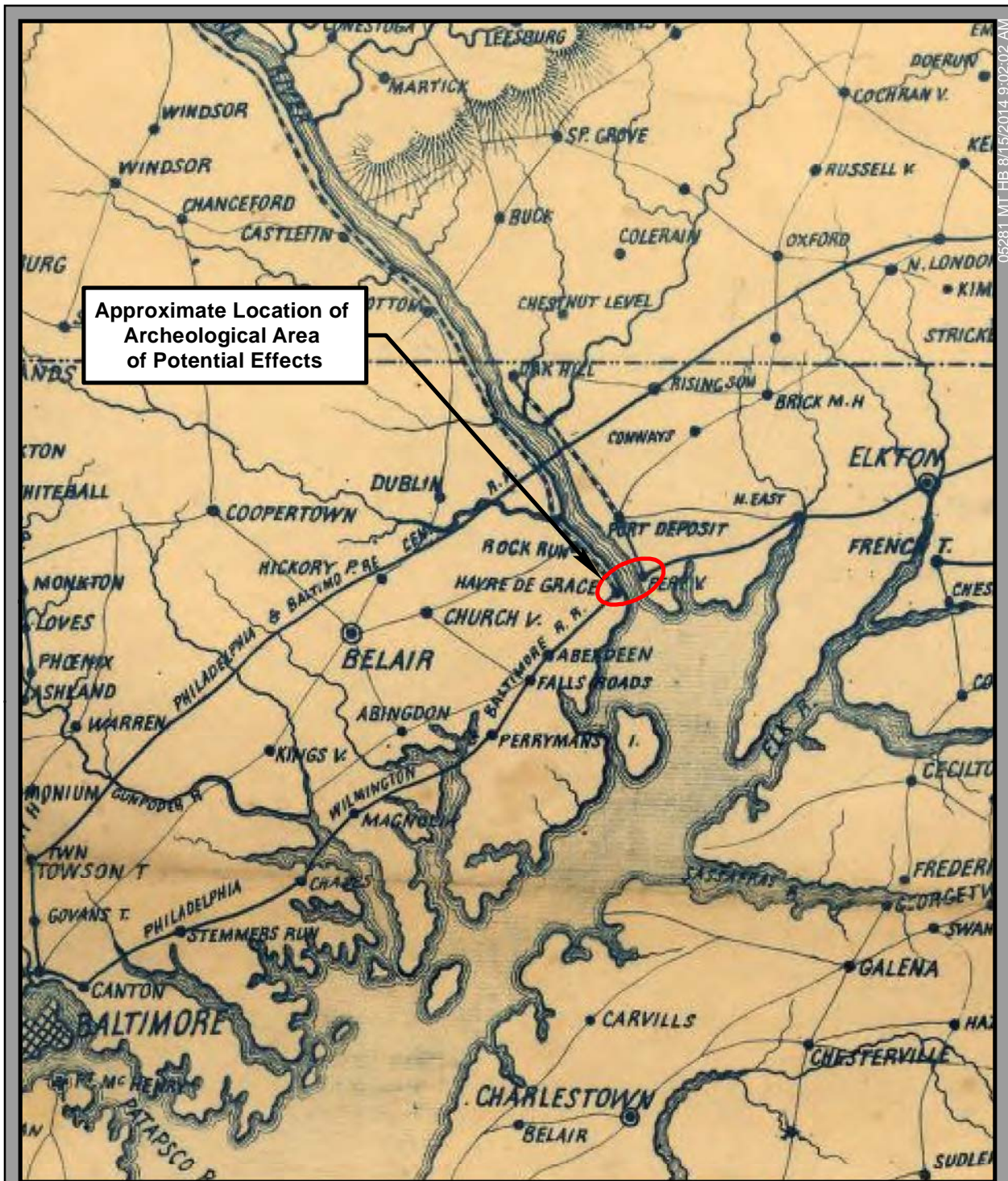
 Archeological Area of Potential Effects



Susquehanna River Rail Bridge Project
Harford and Cecil Counties, Maryland

Not to Scale

Source: T.J. Lee and C.N. Hagner's Chart of the Mouth of Susquehanna River and Head Waters of Chesapeake Bay, Maryland, 1856



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Approximate Location of Archeological Area of Potential Effects

Figure 9

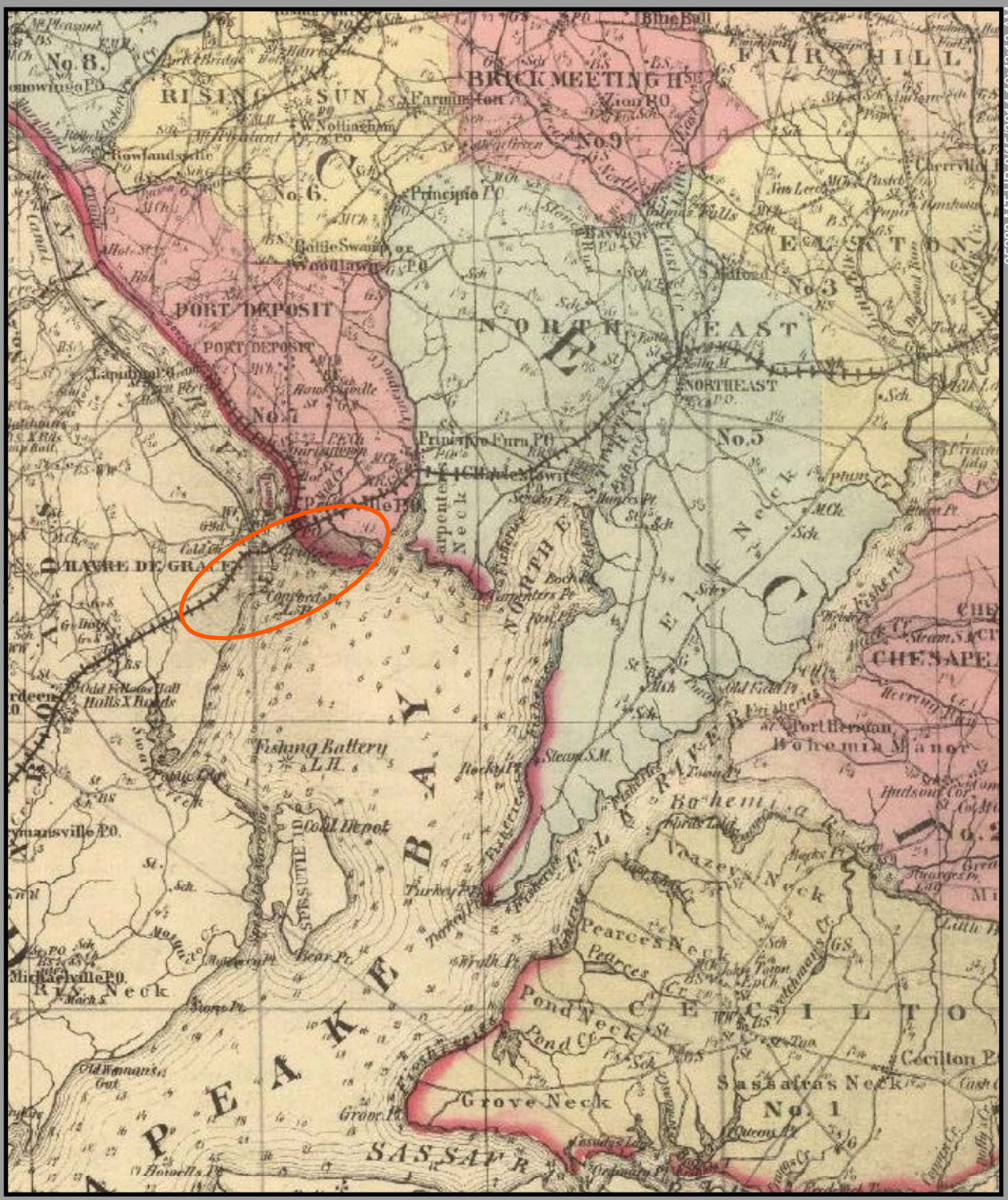
Detail of the New War Map of Maryland, Part of Virginia, and Pennsylvania (1863)
 Depicting the Archeological Area of Potential Effects

Susquehanna River Rail Bridge Project
 Harford and Cecil Counties, Maryland

Source: New War Map of Maryland, Part of Virginia, and Pennsylvania, 1863



Not to Scale



Approximate Location of Archeological Area of Potential Effects

Figure 10
Detail of the 1866 Map of Cecil County
Depicting the Archeological Area of Potential Effects



Susquehanna River Rail Bridge Project
Harford and Cecil Counties, Maryland

Not to Scale

Source: 1866 Map of Cecil County, Maryland

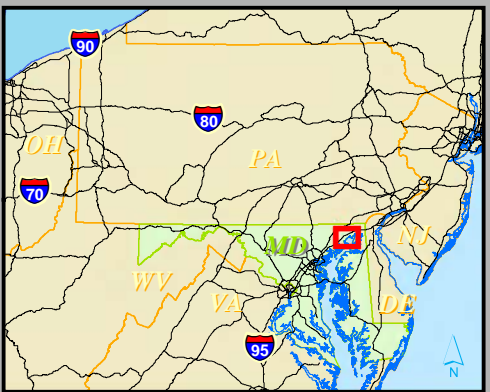
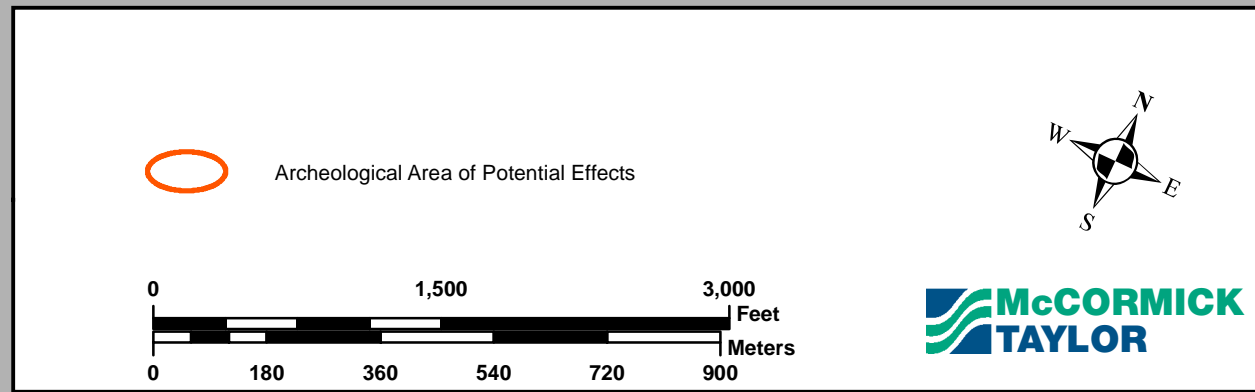
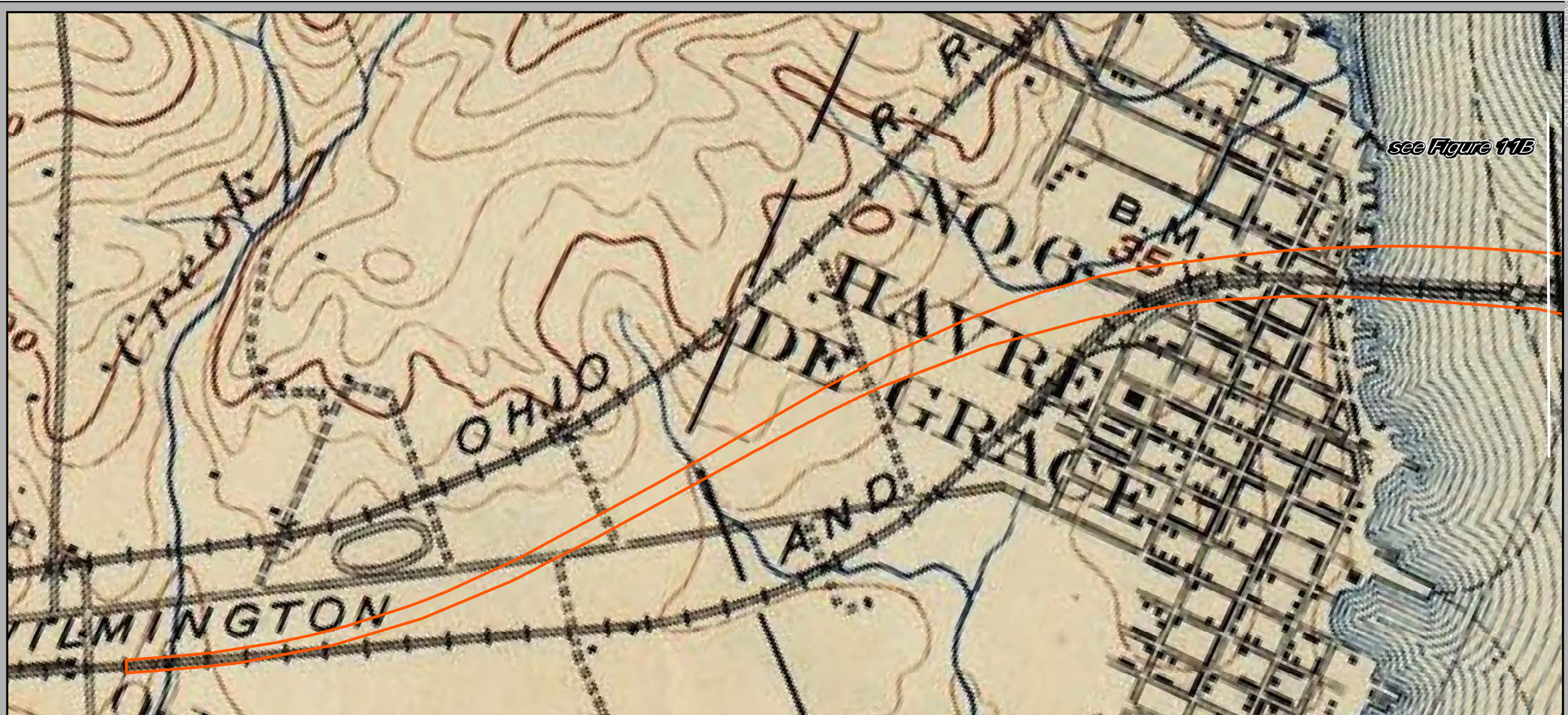


Figure 11A
1900 Havre de Grace, MD
Topographic Quadrangle Map Depicting the
Archeological Area of Potential Effects
Susquehanna River Rail Bridge Project
Harford and Cecil Counties, Maryland
 Source: Havre de Grace, MD
 USGS Historic Quadrangle, 1900

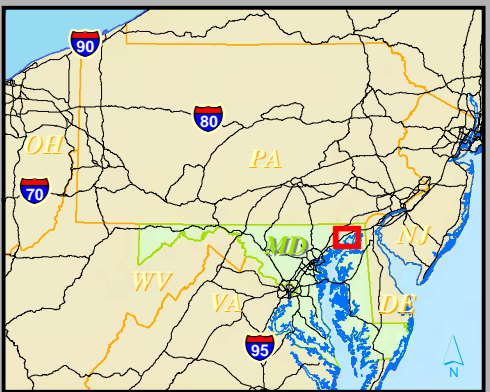
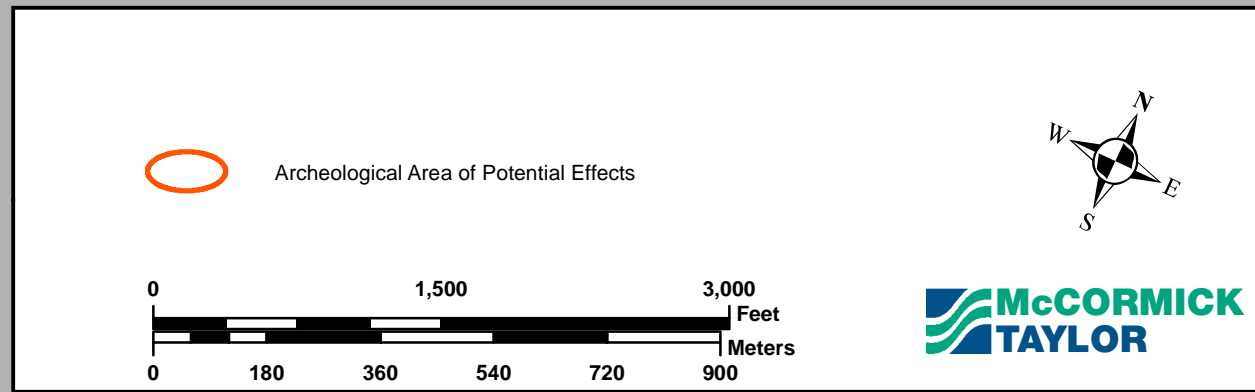
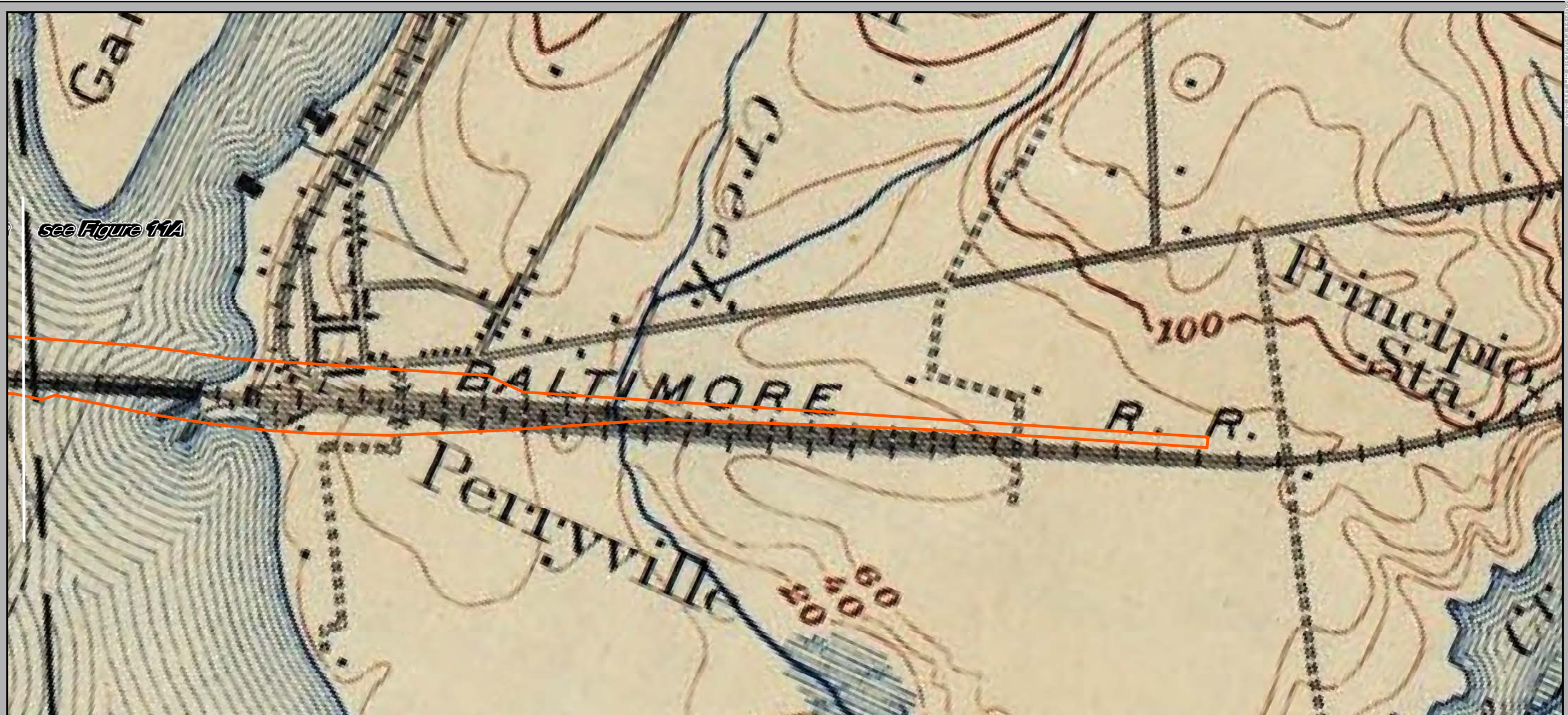
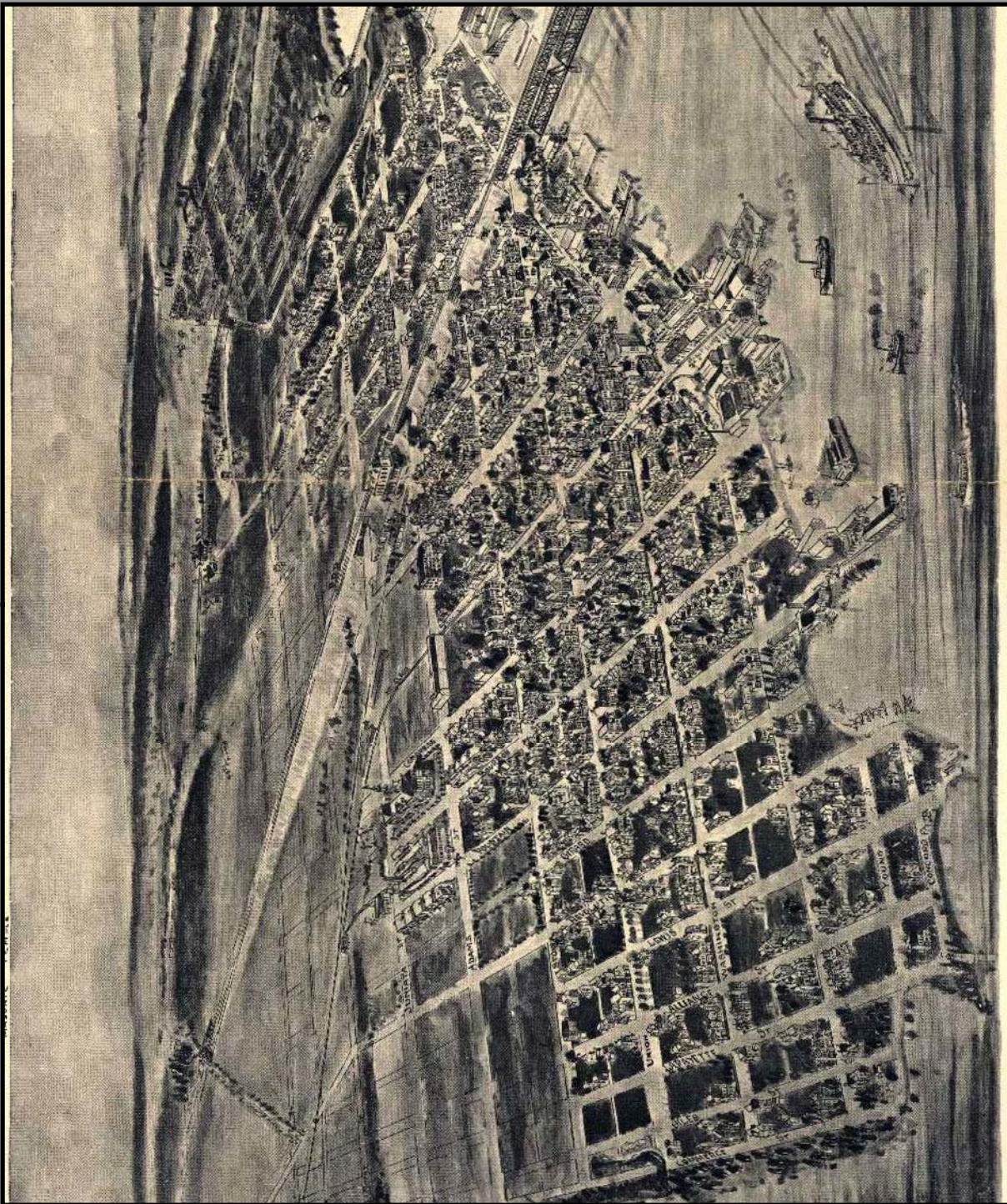


Figure 11B
 1900 Havre de Grace, MD
 Topographic Quadrangle Map Depicting the
 Archeological Area of Potential Effects
 Susquehanna River Rail Bridge Project
 Harford and Cecil Counties, Maryland
 Source: Havre de Grace, MD
 USGS Historic Quadrangle, 1900



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Figure 12
Bird's Eye View of Havre de Grace, Maryland, 1907

Susquehanna River Rail Bridge Project
Harford and Cecil Counties, Maryland

Source: Powler and Kelly, Morrisville, PA, 1907



Not to Scale

3.10 Modern Period (1930-Present)

In the twentieth century, historic properties in the Havre de Grace area experienced extensive redevelopment and renovation. Havre de Grace has grown due to the annexing of new land, and has become a popular destination for tourists. The Conowingo Dam, several roads, and railroad bridges now span the Susquehanna River. In 1976, the ownership of the passenger rail bridge passed to Amtrak. In September 2003, Hurricane Isabel flooded the city nearly 2 blocks into downtown Havre de Grace.

The city income has doubled in recent years, showing how popular this area has become for recreation and tourism. According to the 2010 census, Havre de Grace boasts approximately 13,000 residents, and city tourism records reflected that 220,000 tourists visited Havre de Grace. Visitors are welcomed to Havre de Grace with a variety of bed-and-breakfasts, restaurants, coffee shops, antique stores, boutiques, spas, art galleries, museums, and off-Broadway productions in the old opera house. Several marinas around the shoreline of Havre de Grace also attract boaters and fishers to the area, and hikers and birdwatchers enjoy the scenic walking trails.

4.0 RESEARCH DESIGN

The Phase IA archeological assessment, conducted in support of the Amtrak Susquehanna River Bridge project, was performed within a general research framework designed to achieve several goals. The research design was developed based on regional pre-contact and historic contexts and the results of background research.

4.1 Overall Project Goals

During a reconnaissance survey, the initial stage often consists of a detailed review of the project area's history, as well as an assessment of the existing conditions within the APE. Once completed, these two sets of data may be utilized to delineate specific portions of the APE that possess the potential to contain archeological resources. However, within the context of an undertaking that has a Section 106 component, these preliminary studies will not satisfy the requirements of an agency to identify all historic properties within any given project's APE. For complex projects that contain multiple alternatives, a phased approach allows the project sponsor and review agencies to specifically target certain areas for a systematic Phase IB identification survey.

As stated above, the overall goal of this report is to assess the archeological sensitivity of the project APE by determining which portions of the project corridor have been previously disturbed by recent construction activity and areas that hold potential to contain intact buried cultural deposits. In order to achieve these goals, the following tasks are proposed:

- Development of a clear picture of the evolution of the built environment for the APE through time via the analysis of primary source material such as historical topographic maps, soil maps, insurance maps, and local city directories or atlases;
- Obtain photo-documentation of the present-day existing conditions within the project APE;
- Conduct limited field investigations in order to document the condition and integrity of the soil deposits within the project APE.

4.2 Archival Research

In addition to in-house materials, references consulted as part of the archival research included files, paper and electronic, housed at the Maryland Historical Trust (MHT), as well as various historical and educational institutions. Materials examined included relevant project documentation, historic and environmental maps, cultural resource management surveys, technical journals, as well as deed and tax information. Other resources that were reviewed included pertinent publications regarding the Native American history and ethnohistory, Euro-American history, and geography of the area. Research efforts also included interviews with knowledgeable individuals as well as a review of electronic media (e.g., internet resources). Examples of online databases and reference materials consulted included those maintained by the

Jefferson Patterson Park and Museum (JPPM), MHT, the Maryland State Archives, the National Archives, and the Maryland Geological Survey.

Historical texts, such as regional, local, and community histories, as well as historical maps and photographs, insurance maps, property deeds, and military records all can provide important site location information. Oral histories also provide important site location information, particularly histories compiled by avocational archeologists and historians. Histories collected from land owners sometimes reveal archeological sites on the basis of surface finds and remnant structures such as cellars, foundations, and wells suggestive of abandoned historical sites. For this project, archeologists utilized local, county, and regional histories of the Havre de Grace area in order to better understand the chronological development of the APE. These histories were also reviewed in attempt to identify historical period site locations.

Historical topographical maps of the study area, historical atlases and maps, and a panoramic overview of Havre de Grace (Fowler and Kelly 1907) were also studied. While these resources were helpful in providing a broad overview of the historic development of Havre de Grace, they provide little specific detail as to exactly what types of structures and resources were present within the APE as the city evolved. In contrast, the Sanborn Insurance Company maps were extremely helpful for recreating property parcels dating from the late nineteenth century through early twentieth century (Sanborn Fire Insurance Company 1886–1930). The Sanborn maps facilitated in the identification of individual structures within the APE, as well as provided additional information about these structures including the materials with which they were constructed and, in some cases, function. Based on the additional information provided on the Sanborn maps the presence of some cartographically excluded outbuildings, such as small sheds and privies can also be anticipated. Specifically, because Sanborn Insurance maps depict real property bounds, they can be used to predict the location of artifact-bearing privies, which often were constructed at property margins. A thorough review of available cartographic resources provided no additional source material that provides the level of specific detail found within the Sanborn mapping.

In addition to these cartographic resources, the MHT files, including the MHT Archeological Site Inventory and MHT library of cultural resource reports, were examined in order to retrieve information on all archaeological sites located within a one-mile radius of the APE. This information was used to predict the site types that might be found within and adjacent to the APE. Cultural resource management reports (CRM reports) at MHT were examined in order to determine the extent and types of surveys that had taken place within and adjacent to the APE.

4.3 Field Methodology

In order to supplement the background research portion of the project, limited field investigations were conducted in order to record the nature of the existing conditions within the APE. The intent of these field investigations during this phase of the project was not to systematically test the entire ground disturbance footprint and identify archeological sites, but rather to simply “ground truth” or verify areas of presumed previous disturbance or subsurface integrity as indicated by the archival research. These field observations were recorded through a program of visual inspection and limited, judgmental subsurface testing utilizing soil probes.

Based on the results of the background research the majority of the APE, specifically within the Amtrak ROW, was found to be disturbed due to prior construction activities. Disturbance within the Amtrak ROW was verified by field observations and historic mapping. The remaining portion of the APE, for which no evidence of prior disturbance was identified, was divided into five (5) Study Areas. Each Study Area within the APE was subject to the following survey approach:

- Each Study Area was surface-inspected in its entirety for evidence of extant features or remnant features (e.g., visible ground depressions, partially exposed brick/stone);
- Following the surface inspection, a combination of limited soil probing or coring was conducted where possible in order to gain a better understanding of the stratigraphy within each Study Area. Parcels located on private property and Amtrak property were not accessed as part of this study. Soil samples were taken with the assistance of an Oakfield Model DB3 Tube Soil Sampler with a 1¼ inch diameter barrel.

4.4 Prediction of Archeologically Sensitive Areas

There are several types of features within a developed setting such as Havre de Grace that hold high potential for containing significant intact cultural deposits, including vertical shaft features, basement and foundation interiors, builder's trenches, and horizontal occupation zones. The shaft feature category includes structures such as wells, cisterns, and privies, which are valuable for providing a high degree of artifact and structural integrity in a stratigraphic context. Furthermore, privy deposition occurs throughout and past the functional "life" of the feature. Privies can contain data pertinent to studies of consumer choice, socioeconomic status, and subsistence. Wells and cisterns are important for the same reasons as privies, with the important distinction that artifact deposition does not typically occur during use.

Basements and foundation interiors typically contain great quantities of demolition debris representative of the building's superstructure. For the most part, demolition debris is not considered a significant data category because architectural information can be obtained from fire insurance maps and other historical sources. However, basements could hold important archeological deposits if specific activities with remnant physical correlates were conducted in the basement of the building. These types of conditions might be present in residential buildings with dirt floors, or in commercial/industrial buildings. The assessment of basements can also result in the identification of deeper features (shaft features) truncated beneath them. Because shaft features can extend as much as 20 feet (6 meters) below the original ground surface, and because basements usually are not excavated more than 10 feet (3 meters) below grade, early shaft features may be preserved beneath second- or third-generation buildings. Builder's trenches typically contain architectural and trade-related artifacts. Their research value is typically low because their artifacts exist outside of an identifiable historical context (e.g., ownership); however, artifacts recovered from these contexts can be used to help date the construction of a building. Horizontal occupation zones are similar to "living floors" in pre-contact archeology. That is, they reflect, through the differential distribution of artifacts, where different types of activities took place and how space was organized in relation to the landscape or property.

Horizontal occupation zones (including yard spaces, gardens, brick and concrete patios/pads, brick walkways, wall foundations, outdoor grills, etc.) are fragile because they are “thin” and because they are usually the first feature to be disrupted during building demolition and construction.

In terms of the archeological resource potential of domestic sites, Cinadr and Genheimer's research (1983) suggests that the deeper features (i.e. cisterns, privies) were considered to have the highest potential for retrieval of significant archeological information, and that the assessment of builder's trenches and basements were eliminated from the resource sampling strategy due to their low data potential (considered insufficient to warrant time/cost expenditures). In addition, a series of ancillary residential feature types (e.g. brick patios/pads, concrete patios/pads, brick walkways, wall foundations, outdoor grills, etc.) were recorded as elements of land use patterns.

Another historic period resource type which may be present within the APE are cemeteries. According to the background cartographic and archival research conducted in support of this project, there are no previously identified or marked cemeteries or interments within the APE. That said, there is one known structure in Havre de Grace that is depicted on historic maps as a church. Currently identified as the Room at the Cross Mission Church and located at the corner of Warren Street and North Stokes Street, both the historic record and current visual inspection show no obvious signs that a cemetery is associated with this structure. No markers or surface depressions were observed in the grassy lot adjacent to the church.

Finally, another category of archeological debris is fill. Fill represents processes affecting land use and site formation. As such, the ubiquitous phenomenon of urban fill has become the topic of some research interest. Rubertone (1982:129) has defined five categories of depositional types “on the basis of the general character of the fill, stratigraphic associations, and architectural context:

- Surface: These were strata that were observed from the turf layer to above the walls of the building or by the presence of a cultural feature. The strata consisted of a loam matrix mixed with rubble.
- Structural Debris: These deposits were found within the walls of a building, or immediately adjacent to the walls, and consisted of structural debris resulting from building demolition or decomposition (e.g., structural components) mixed with some rubble and soil.
- Fill-trash: This was material found within the walls of buildings consisting of some structural components and debris that was probably the result of post-demolition disposal activities.
- Fill-other: These materials accumulated in exterior spaces through cultural depositional activities.
- Middens: These were concentrations of rich dark soils mixed with organic refuse and artifacts.”

Each of these resource types may be expected throughout the APE. The relative integrity of the encountered deposits should be evaluated in order to determine the archeological significance of the site.

Given the highly developed nature of the Havre de Grace area, it is rather unlikely that significant cultural deposits from the pre-contact period survive within the portion of the study area located to the west of the Susquehanna River. According to the MHT files, archeological research on the less-developed Perryville side of the river has demonstrated the survival of numerous Archaic and Woodland period resources on the elevated terraces and other landforms adjacent to the Susquehanna River. The majority of the previously recorded pre-contact resources in Cecil County have been identified as non-diagnostic lithic scatters and short-term resource procurement encampments (see Section 5.2).

5.0 RESULTS OF BACKGROUND RESEARCH

Prior to field investigations, a review of existing literature was conducted with the intent to identify any known (i.e. previously documented) cultural resources within or in the immediate vicinity of the Susquehanna Bridge project APE. Research efforts were also undertaken to acquire a thorough understanding of the pre-contact and historic contexts of the project area vicinity.

5.1 Summary of Previous Investigations

Background research revealed that there have been several previous archeological investigations within the vicinity of the project APE. Past studies near the project corridor have included various environmental compliance studies as well as independent research projects; terrestrial as well as underwater surveys have been conducted. The most recent underwater archeological study involved a 2003 Phase I-level survey of the lower Susquehanna River from Port Deposit to Havre de Grace. Conducted by the Maryland Maritime Archeology Program (MMAP), this study covered approximately 2014 acres and involved a combination of remote sensing technology to identify submerged targets supplemented with diver inspections of suspect areas (Bilicki 2003). As a result of investigations, four previously unidentified submerged cultural resources and seven anomalies were identified. Of the confirmed four submerged resources, all were classified as shipwrecks.

In addition to the underwater study, there were four terrestrial compliance-driven studies within the vicinity of the APE. The first such study was conducted in 1977 by Dennis Curry of the Maryland Geological Survey, Division of Archeology. The investigations covered an approximately 7,000-foot (2,133-meter) section of existing Maryland Route 7A in Harford County that was to be improved. The investigations failed to yield any evidence of intact archeological sites within the construction footprint (Curry 1977).

On the Cecil County side of the Susquehanna River, R. Christopher Goodwin and Associates conducted a Phase I survey of the proposed Perryville Connector corridor in 2002. The fieldwork for this project involved the examination of an approximately 1,558-foot (475-meter) linear corridor extending between Mill Creek and Route 40. These investigations did not yield any evidence for archeological resources (Ross, et al. 2002).

The most extensive previous investigations, which overlaps with a portion of the project APE within Cecil County, were the 1989 Phase I and Phase II surveys conducted by John Milner Associates, Inc. (JMA) at the Perry Point Veteran's Administration Medical Center property. The goal of this survey was to identify the archeological resources located within the approximately 512-acre (207-hectare) property and make recommendations for their eligibility to the National Register of Historic Places. JMA identified a total of 17 new archeological sites within the property as well as 24 artifact locations or isolates. Of the 17 identified resources, 10 sites were evaluated at the Phase II-level in order to determine their eligibility. Within this group, six multi-component resources were recommended as eligible for the NRHP (Stevens et al. 1989). The JMA survey area encompasses almost the entire portion of the current project APE located south of the existing rail corridor within Cecil County. The 1989 study identified three

archeological sites, 18CE255, 18CE258, and 18CE265, located immediately adjacent to the current APE for the Susquehanna River Bridge project; a portion of one of the archaeological sites, 18CE258, is located within the current APE. Phase II investigations were conducted at 18CE258 by JMA. As a result of the Phase I/II survey, all three resources, 18CE255, 18CE258, and 18CE265, were recommended not eligible for the NRHP due to compromised condition and integrity by JMA. No additional work was recommended for these sites. MHT formally concurred that 18CE258 is not eligible for the NRHP in 2009.

Recently, the URS Corporation (URS) conducted archaeological and historic-architectural investigations for a proposed Maryland Area Regional Commuter (MARC) maintenance and storage facility sponsored by the Maryland Transit Administration (MTA) (Koziarski and Seibel 2014). This project is located immediately north of the current Amtrak ROW east of Firestone Road. Six archaeological sites, including the multi-component Coudon Farm Site (18CE383), the historic Coudon Locus A (18CE379), B (18CE380), and C (18CE381) sites, the historic Coudon Drainage site (18CE382) and the recent historic Coudon Road site (18CE384) were recorded during this study. In January 2014, a Phase II site assessment was completed at portions of the Coudon Farm Site (18CE383), the Coudon Locus B site (18CE380), and the Coudon Drainage (18CE382) site to determine potential eligibility for listing in the NRHP. Though the final report has not been formally accepted, a draft report (Koziarski and Seibel 2014) has been reviewed by MHT. According to a letter from MHT to MTA dated 6/18/2014, MHT concurs that five of the six identified sites (18CE379, 18CE380, 18CE381, 18CE382, and 18CE384) are not eligible for the NRHP given their lack of integrity and inability to provide important information. MHT also concurs that site 18CE383, the archeological component of the extant southern farmstead affiliated with the Woodlands Farm Historic District (MIHP No. CE-145), is eligible for inclusion in the NRHP under Criterion D. Though the MARC project area is located immediately adjacent to the current Susquehanna River Rail Bridge APE, these two project boundaries neither overlap nor intersect. Pending any revision to the current APE limits, NRHP eligible site 18CE383 will not be impacted by the current project.

Outside of compliance-driven projects, there are also a small number of independent research studies that have been performed within the Havre de Grace area. Many of these investigations have focused around the area of the Susquehanna Museum and the associated lock gates of the Susquehanna & Tidewater Canal. Following the cessation of canal operations in 1900, the Lock House property was leased to the City of Havre de Grace by the Philadelphia Electric Company for the purposes of being operated as a museum. In the late 1970s and 1980s, extensive archeological studies were conducted on the property in support of its proposed restoration and eventual re-opening to the public as the Susquehanna Museum of Havre de Grace at the Lock House (18HA240) (Mid-Atlantic Archeological Research 1977; Shank 1982; Singley 1987; Hahn 1988; Shank 1988).

Finally, background research revealed a brief field season report for the on-going archeological excavations at the Concord Point Lighthouse property located at the southern end of the Havre de Grace. Constructed in 1825, the lighthouse and associated keeper's property is located at the southern end of the Susquehanna River and has long served as an aid to navigation in the northern Chesapeake Bay. According to the field report, the 1993 excavations appeared to focus on the yard area of the John O'Neill House Site (18HA238). Test unit excavations revealed

possible intact cultural levels which were attributed to a former kitchen or food preparation area associated with the main house (Orr and McIntyre 1994).

5.2 Previously Identified Archeological Sites

The following tables summarize the archeological resources that have been previously recorded within a one-mile (1.6-kilometer) radius of the project APE (***Tables 2 and 3***). Many of these resources were recorded as part of the previous cultural resource investigations described above. ***Table 2*** summarizes the archeological sites that have been documented during numerous systematic surveys. ***Table 3*** represents a summary of the quadrangle files archived by MHT. Many of these resources have yet to be verified in the field by systematic fieldwork and research. The locations of both types of resources are also depicted on ***Figure 13***.

With respect to archeological resources located within or immediately adjacent to the current project APE, besides the sites located on the Perry Point VA property that were discussed in the previous section, the most significant resource located within the limits of the APE is the archeological component of Rodgers Tavern (18CE15). The tavern structure itself, listed on the NRHP in 1972, is a two-story stone structure located on the north side of Broad Street in Perryville, [REDACTED]. According to the NRHP nomination form, Rodgers Tavern (CE-129), which operated during the eighteenth and nineteenth centuries, is of national importance due to the frequent visits of George Washington between the years 1755 and 1798. In addition, Colonel John Rodgers (1728-1791), the proprietor of the tavern during most of Washington's visits, was also the patriarch of the Rodgers family which may be credited with the formation and growth of the United States Navy. [REDACTED]

[REDACTED]

Archeological investigations conducted in 2004 prior to the rehabilitation of the structure yielded a wide variety of eighteenth and early nineteenth century domestic refuse and architectural debris (Hopkins and Persson 2005). The eligibility of the subsurface deposits has not been formally evaluated.

MHT Quad File Resources located within the project APE include the approximate location of the first railroad bridge across the Susquehanna (ID #2), the approximate location of the original ferry across the Susquehanna (ID #3), portions of the historic Havre de Grace waterfront (ID #7), the purported location of an historic coal wharf (IDs #10), and two unconfirmed submerged anomalies (IDs # 18 and 19) that were identified during the 2003 underwater survey of the lower Susquehanna River (Bilicki 2003). Two additional historic coal wharves (IDs #9 and 11) are also present immediately adjacent to the project APE. At the present time, the exact boundaries, condition, and integrity of these MHT Quad File Resource locations have not been determined or verified.

Table 2. Previously Recorded Archeological Sites Within One-Mile of the Area of Potential Effects

MHT ID#	Site Type/Function	Temporal Association	NRHP Status
<i>Harford County</i>			
18HA117	Lithic scatter	Pre-contact/Unknown	Not Evaluated
18HA118	Lithic scatter	Pre-contact/Unknown	Not Evaluated
18HA238	Pre-contact: Encampment Historic: Domestic	Pre-contact: Late Archaic/Middle Woodland Historic: Early 19 th Century	Not Evaluated
18HA240	Canal lock gates	19 th -Early 20 th Century	Not Evaluated
18HA251	Barge (submerged)	Unknown	Not Evaluated
18HA266	Barge (submerged)	Late 20 th Century	Not Evaluated
18HA287	Burned house ruin	Late 18 th -20 th Century	Not Evaluated
18HA288	Historic artifact scatter	Unknown	Not Evaluated
18HA289	Pre-contact: Lithic scatter Historic: Historic artifact scatter	Pre-contact/Unknown Historic: 19 th -Early 20 th Century	Not Evaluated
<i>Cecil County</i>			
18CE11	Encampment	Archaic/Woodland Period	Not Evaluated
18CE15	Rodgers Tavern (Commercial)	Early 18 th -19 th Century	Not Evaluated
18CE18	Encampment	Late Archaic	Not Evaluated
18CE79	Unknown pre-contact/ Archaic base camp	Pre-contact/Unknown and Archaic	Not Evaluated
18CE135	Encampment	Pre-contact/Unknown	Not Evaluated
18CE140	Lithic scatter	Middle Archaic	Not Evaluated
18CE199	Lithic scatter	Late Archaic	Not Evaluated
18CE253	Lithic scatter	Archaic	Not Evaluated
18CE254	Lithic scatter	Pre-contact/Unknown	Not Evaluated
18CE255	Lithic scatter	Pre-contact/Unknown	Not Evaluated
18CE256	Pre-contact: Encampment Historic: Mill complex	Pre-contact: Late Archaic Historic: 18 th Century	Eligible; DOE 3/10/1989
18CE257	Short term resource procurement	Late Woodland	Not Evaluated
18CE258	House (Domestic)	19 th Century	Not Eligible; DOE 3/10/1989
18CE259	Short term resource procurement	Late Woodland	Eligible; DOE 3/10/1989
18CE260	Pre-contact: Short term resource procurement camp Historic: Historic artifact scatter	Pre-contact/Unknown Historic: 19 th Century	Not Eligible; DOE 9/15/2009
18CE261	Short term resource procurement	Archaic	Not Evaluated

MHT ID#	Site Type/Function	Temporal Association	NRHP Status
18CE262	Pre-contact: Short term resource procurement Historic: Plantation (Domestic)	Pre-contact: Late Archaic/Woodland Historic: 18 th Century	Eligible; DOE 3/10/1989
18CE263	Pre-contact: Encampment Historic artifact concentration, possible structure	Pre-contact: Late Archaic-Woodland Historic: 18 th -Early 19 th Century	Eligible; DOE 3/10/1989
18CE264	Pre-contact: Encampment Historic: Domestic	Pre-contact: Late Archaic/Woodland Historic: 18 th -19 th Century	Eligible; DOE 3/10/1989
18CE265	Unknown	20 th Century	Not Evaluated
18CE266	Pre-contact: Lithic scatter Historic: House (Domestic)	Pre-contact/Unknown Historic: 18 th Century	Not Evaluated
18CE269	Pre-contact: short-term camp Historic: (1) house site, possible slave or tenant house (2) early 20 th Century bunkhouse	Pre-contact/Unknown Historic: (1) 18 th Century (2) 20 th Century	Eligible; DOE 3/10/1989
18CE297	Shipwreck	19 th Century	Not Evaluated
18CE379	Debris scatter	Early to Mid-20th Century	Not Eligible; DOE 6/18/14
18CE380	Artifact scatter	19 th -20 th Century	Not Eligible; DOE 6/18/14
18CE381	Artifact scatter	Late 18 th -19 th Century	Not Eligible; DOE 6/18/14
18CE382	Brick outbuilding	19 th – Early 20 th Century	Not Eligible; DOE 6/18/14
18CE383	Farmstead/plantation	Late 18 th -20 th Century	Eligible; DOE 6/18/14
18CE384	Roadbed	Mid – Late 20 th Century	Not Eligible; DOE 6/18/14

Table 3. Previously Recorded Quadrangle Files Within One Mile of the Area of Potential Effects, Havre de Grace Quadrangle

Quad File ID#	CLASS	Description	Comments/ Reference
946	HAVRED-QF02	Approximate location of the first railroad bridge across Susquehanna; PW&B railroad bridge pilings HA-836	Phase I Underwater Archeological Project (Thompson 2000)
947	HAVRED-QF03	Approximate location of ferry across Susquehanna River	Phase I Underwater Archeological Project (Thompson 2000)
948	HAVRED-QF04	Approximate location of two piers at Perryville	Phase I Underwater Archeological Project (Thompson 2000)
951	HAVRED-QF07	Location of historic Havre de Grace waterfront	Phase I Underwater Archeological Project (Thompson 2000)
952	HAVRED-QF08	Approximate location of Morgan Wharf, J. Hooper Co.	Phase I Underwater Archeological Project (Thompson 2000)
953	HAVRED-QF09	Approximate location of coal wharf	Phase I Underwater Archeological Project (Thompson 2000)
954	HAVRED-QF10	Approximate location of coal wharf	Phase I Underwater Archeological Project (Thompson 2000)
955	HAVRED-QF11	Approximate location of Hall Bros. coal wharf	Phase I Underwater Archeological Project (Thompson 2000)
956	HAVRED-QF12	Approximate location of Boyd & Co. coal wharf	Phase I Underwater Archeological Project (Thompson 2000)
957	HAVRED-QF13	Approximate location of Ferry Wharf	Phase I Underwater Archeological Project (Thompson 2000)
958	HAVRED-QF14	Approximate location of John Dubois Saw Mill and Lumberyard Wharf	Phase I Underwater Archeological Project (Thompson 2000)
959	HAVRED-QF15	Approximate location of wharf	Phase I Underwater Archeological Project (Thompson 2000)
962	HAVRED-QF18	Approximate location of submerged anomaly	Susquehanna River Underwater Survey (Bilicki 2003)
963	HAVRED-QF19	Approximate location of submerged anomaly	Susquehanna River Underwater Survey (Bilicki 2003)
964	HAVRED-QF20	Approximate location of submerged anomaly	Susquehanna River Underwater Survey (Bilicki 2003)

Quad File ID#	CLASS	Description	Comments/ Reference
965	HAVRED- QF21	Approximate location of semi-submerged abandoned barges	Susquehanna River Underwater Survey (Bilicki 2003)
966	HAVRED- QF22	Approximate location of submerged anomaly	Susquehanna River Underwater Survey (Bilicki 2003)
967	HAVRED- QF23	Stone foundation	Correspondence, notes, maps, photos, and sketches
968	HAVRED- QF24	Location of Black Cemetery	Correspondence, notes, maps, photos, and sketches

**THIS PAGE CONTAINS CONFIDENTIAL
INFORMATION AND HAS BEEN
REDACTED**

5.3 Potential Archeological Site Types Within the Project APE

This discussion is intended to highlight the kinds of significant resources that may be preserved under fortuitous circumstances, such as paved areas with minimal below-grade disturbance. Archeological potential is considered high for each of these resource types, although individual examples of each site type cannot be assessed for integrity based on the currently available landform disturbance data.

Pre-contact Resources

Due to the location of the proposed project across a major river terrace overlooking the mouth of the Chesapeake Bay estuary, areas within the current APE would have been an extremely attractive place of settlement to pre-contact peoples. However, due to the intensity of the railroad activities within the APE the potential for intact pre-contact deposits is low. Particularly, within Havre de Grace, intact pre-contact contexts would most likely have to be buried deeply in order to have avoided disturbance to date. Given the lower density of settlement during the historic period on the eastern shore of the river (Perryville), it is very likely pre-contact period sites may survive intact within this portion of the APE. Indeed, several known sites with pre-contact components have already been identified within the vicinity Perryville (*Table 2; Figure 13*).

Commercial Establishments

Historic maps, especially the Sanborn Fire Insurance maps, provide a great deal of assistance in predicting exactly what archeological site types may be found within the APE. For Havre de Grace and Perryville, the late nineteenth-early twentieth century Sanborn maps depict a grid pattern of streets that, for the most part, remains intact to the present day. The town blocks formed by this grid pattern appear to contain a mixture of commercial establishments and residences. Interspersed within these structures are other features typical of community life such as churches and schools. Specifically, within Havre de Grace churches are located at the corner of Warren and Stokes streets as well as at the corner of Franklin Street and Freedom Alley. Within Perryville, a church is located at the corner of Broad Street and Susquehanna Avenue.

Residential Housing

As described above, single- and multiple-family residences seem to comprise the majority of the settlement features located within the Havre de Grace portion of the APE and within the Perryville portion of the APE north of the rail corridor. Some of the more densely settled blocks may contain as many as 8-15 structures. For these residential areas, archeological deposits may consist of not only structural remains, but also deposits associated with common or yard areas including the remains of privies, wells, or other outbuildings which served a specific function for property owners.

Industrial Sites/Wharves

Sanborn Maps which focus on the Havre de Grace waterfront seem to indicate a densely developed area that contained numerous commercial and light industrial establishments that helped Havre de Grace develop into an important point of trade in eastern Maryland. Within the current archeological APE, items of particular interest include the City Water Works as well as the numerous coal wharves and milling operations. The MHT Quad Files indicate the possible survival of numerous wharves and bulkheads that once lined the Havre de Grace waterfront during the nineteenth and early twentieth centuries (*Figure 13*).

5.4 Historic Land Use Patterns

The historic maps depicting the APE from the time of European settlement through the twentieth century are illustrative of the contrasts in settlement patterning between Havre de Grace and the Perryville sides of the Susquehanna River. Due to its commanding location at the mouth of the Susquehanna River and at the head of the Chesapeake Bay, Havre de Grace developed early in the historic period as an important point of trade assisting in the movement of goods and people between the urban centers of the north and port cities located to the south such as Baltimore and Norfolk. With its position at the mouth of a major river, Havre de Grace also served as a logical transfer point for resources and raw material such as timber and coal coming from the Pennsylvania interior. While Havre de Grace never achieved the size and stature of a larger port city such as Baltimore, this strategic location allowed the community to develop into a bustling commerce center beginning in the eighteenth century and lasting well into the twentieth century (*Photograph 1*).

Due to the duration and intensity of development within the towns, the analysis of historic land use is greatly aided by the survival of numerous fire insurance maps prepared by the Sanborn Map Company. These maps extend in time from 1886 to 1930 and show in detail the mixture of residential dwellings and small commercial establishments that comprised the growing towns in the late nineteenth and early twentieth centuries. Specifically, Sanborn Maps reviewed for Havre de Grace include maps from 1886, 1894, 1899, 1904, 1910, 1921, and 1930. Sanborn Maps reviewed for Perryville include maps from 1904, 1910, and 1923. Though multitude of maps was encountered, many of the maps provided redundant information and did not indicate that significant development had occurred within the preceding years. Therefore, the most representative and informative maps are presented herein (*Figures 14, 15, 16, 17, 18, and 19*). A more detailed explanation of the resources depicted on the Sanborn maps and what the implications are for archeological potential (e.g. survival of intact subsurface cultural deposits) will be included in the following section with the results of the field reconnaissance (Section 6.0).

On the Havre de Grace side of the river, of particular note are the depictions of the river's edge which appear to show a bustling commercial waterfront with numerous wharves complemented with storage, milling, and other light industrial facilities. Through the final decade of the nineteenth century, the main facility for the town's water supply also appears to be located along the waterfront to the immediate south of the existing railroad bridge.

In contrast, the eastern shore of the Susquehanna River retained a much more rural and agrarian character throughout most of the eighteenth and nineteenth centuries (*Photograph 2*). Despite having a transportation link, either through ferry service in the eighteenth century or by a railroad bridge later in the nineteenth century, for many decades the focal points for the eastern shore of the Susquehanna was Rodgers Tavern and the lands of the Perry Point plantation, the family seat of Captain Richard Perry. While Rodgers Tavern was a popular spot for travelers, the current village of Perryville does not appear to develop until the advent of railroad service through the area during the mid-nineteenth century.

With respect to Perry Point, the property passed through several owners and families during the eighteenth and nineteenth centuries. The property was transferred from the Perry family to Philip Thomas in 1729. It was during Thomas' tenure of ownership that the Manor House was constructed ca. 1750. Philip Thomas' descendants held on to the property for much of the eighteenth century until the farm witnessed a round of short-term owners during the last quarter of the eighteenth century. In 1800, John Stump purchased the Perry Point property, which at that time, included an estate containing approximately 1,800 acres. During this period, the property appears to have contained a successful farm and grist mill.

The property's association with Federal ownership began in 1917 when officials representing the U.S. government purchased 516 acres of land from the Stump family heirs in order to construct an ammonium nitrate plant to service the need for explosives during World War I. In turn, the government leased the property to the Atlas Powder Company which constructed a large manufacturing facility as well as an associated residential village which housed over 300 plant workers and employees. The plant, however, only saw a few short months of production before the treaty ending World War I was signed, halting all operations at the facility. Despite the end of the ammonium nitrate production, the government retained possession of the Perry Point property and the land was turned over to the U.S. Public Health Service in 1919. Over time, the size and range of available medical services at Perry Point grew to its current state which is comprised of over 85 buildings

(http://www.maryland.va.gov/about/History_of_the_Perry_Point_VA_Medical_Center.asp).



Photograph 1: Representative view of Havre de Grace waterfront near the existing Susquehanna River Bridge structure, looking east.



Photograph 2: Representative view of the Perryville waterfront south of the existing Susquehanna River Bridge structure, looking south.

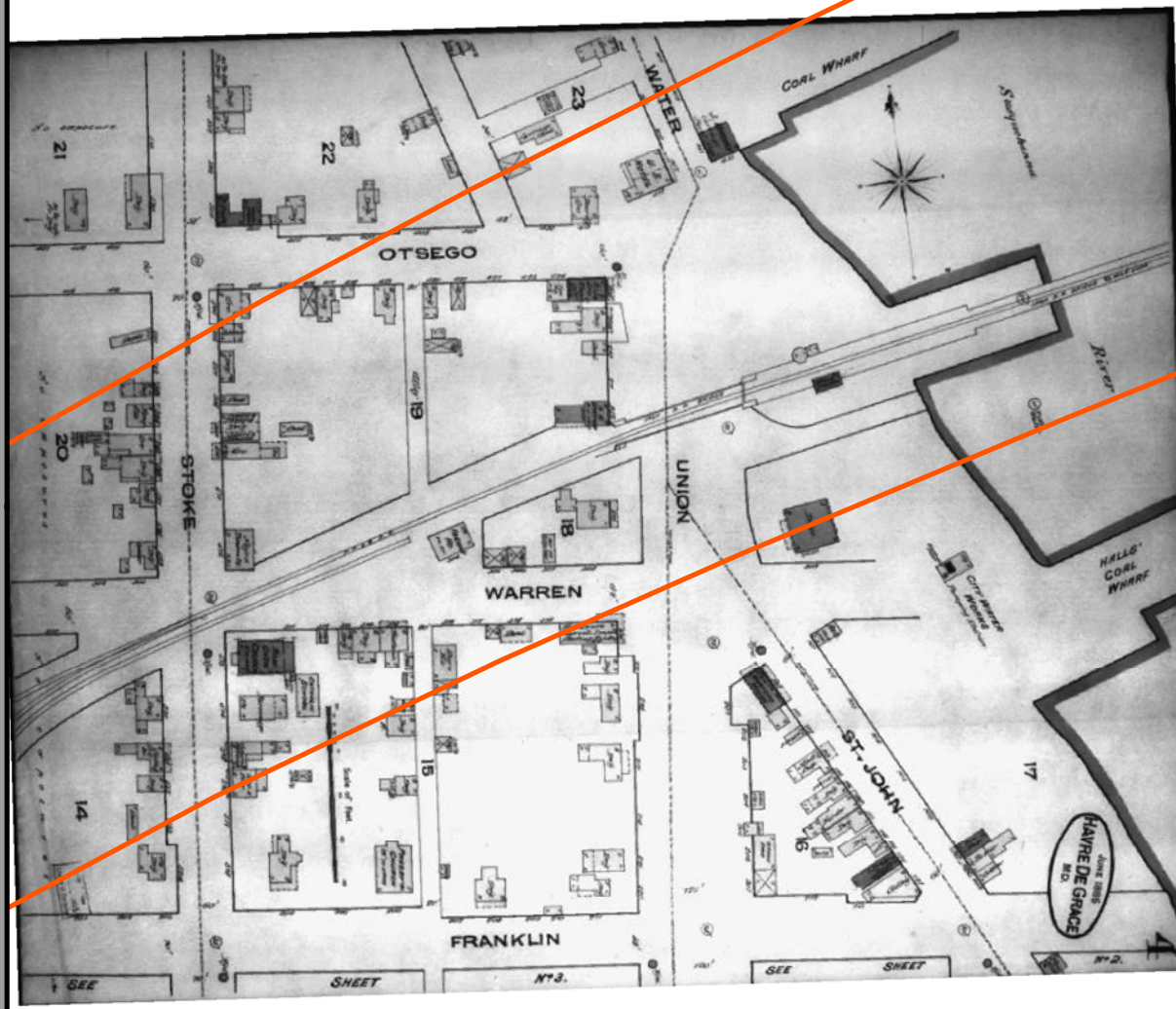

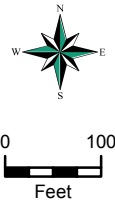


Figure 14

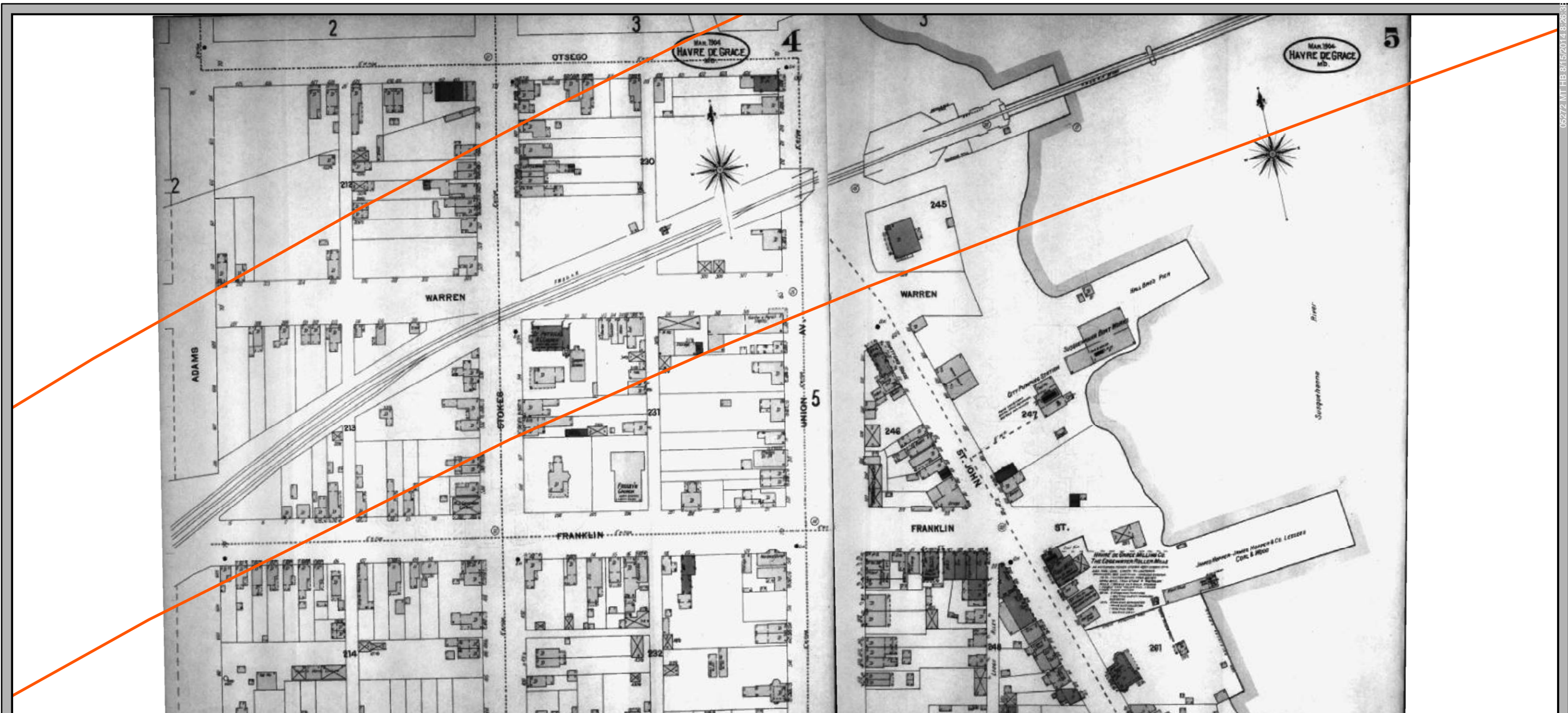
Detail of 1886 Sanborn Map Depicting the Vicinity of the Havre de Grace Waterfront and Previous Railroad Bridge Structure


 Archeological Area of Potential Effects

Susquehanna River Rail Bridge Project
Harford and Cecil Counties, Maryland



Source: Hauducoeur's Map of the Head of Chesapeake Bay and Susquehanna River, 1799



 Archeological Area of Potential Effects

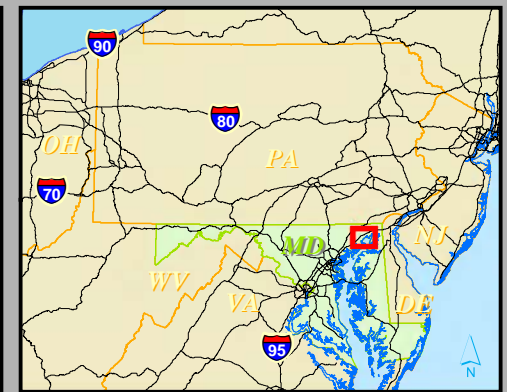
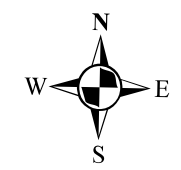
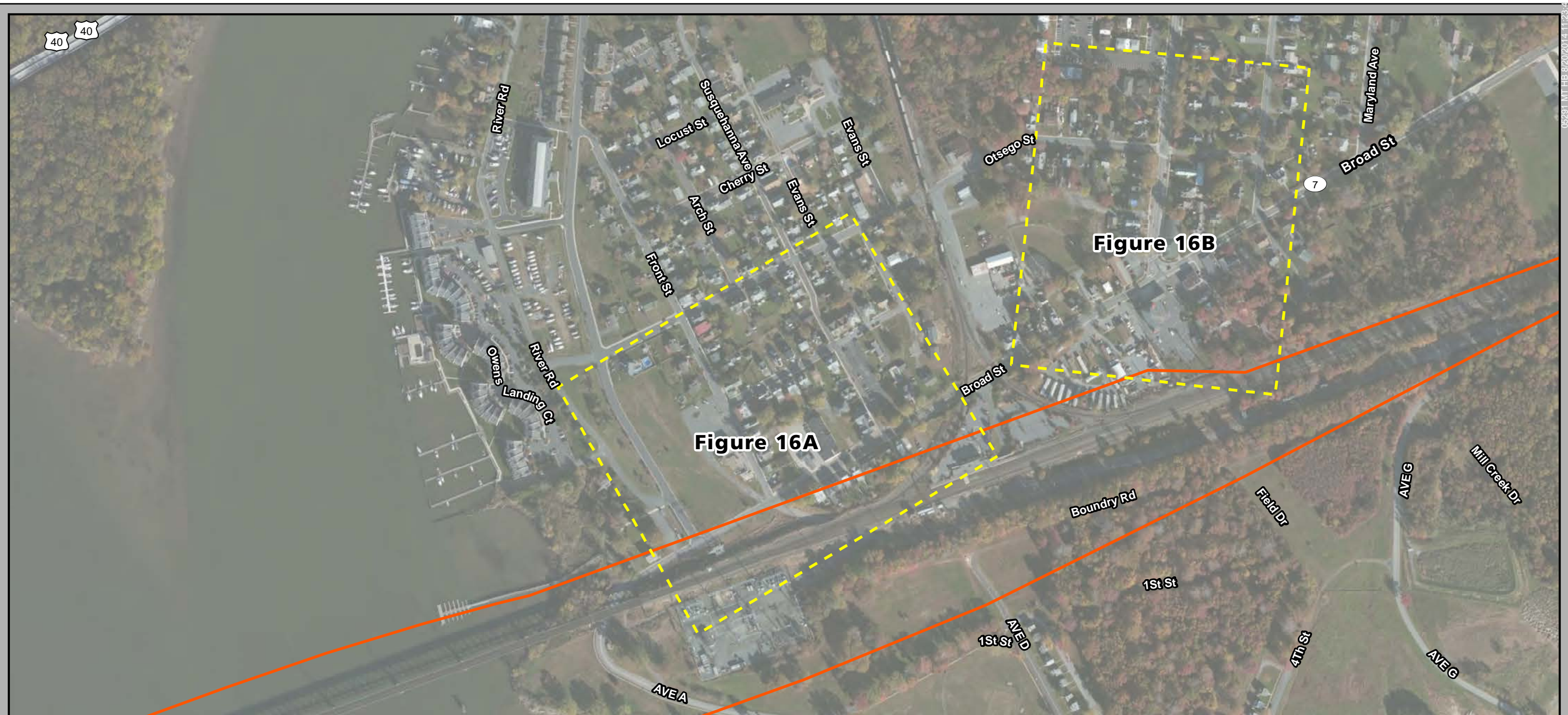




Figure 15
 Detail of 1904 Sanborn Map Depicting the
 Vicinity of the Havre de Grace Waterfront
 and Previous Railroad Bridge Structure



Susquehanna River Rail Bridge Project
 Harford and Cecil Counties, Maryland


Source: Sanborn Map Company, 1904



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 Detail of Historic Maps
 Archeological Area of Potential Effects


 0 250 500 Feet
 0 30 60 90 120 150 Meters

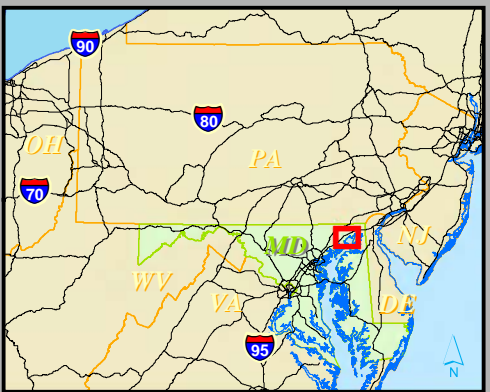
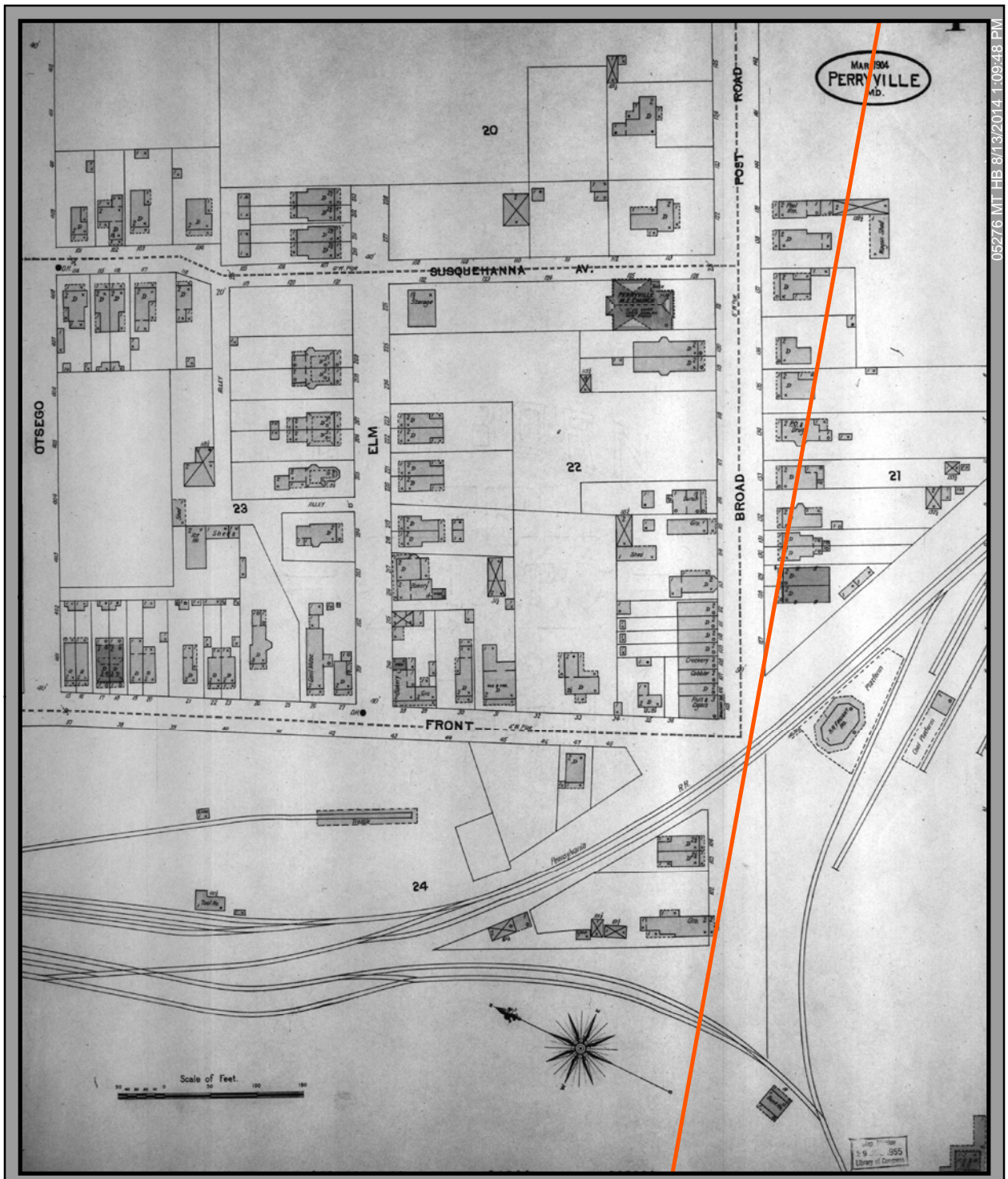


Figure 16 Index
Detail of 1904 Sanborn Map Depicting
the Vicinity of the Perryville Waterfront
and Previous Railroad Lines

Susquehanna River Rail Bridge Project
Harford and Cecil Counties, Maryland

Source: Sanborn Map Company, 1904




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Figure 16A

Detail of 1904 Sanborn Map Depicting the Vicinity of the Perryville Waterfront and Previous Railroad Lines

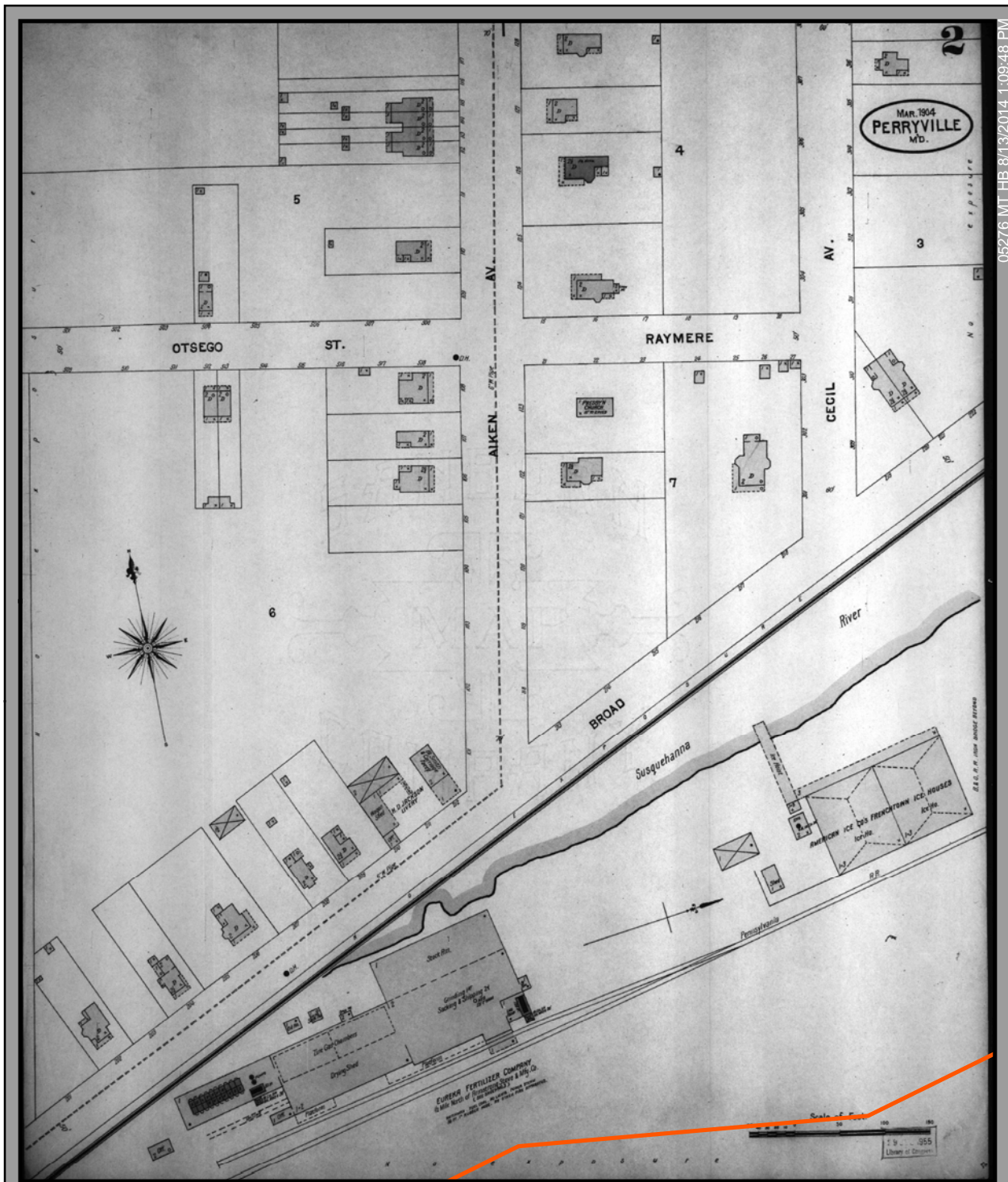
**Susquehanna River Rail Bridge Project
Harford and Cecil Counties, Maryland**

Source: Sanborn Map Company, 1904

 Archeological Area of Potential Effects



Not to Scale




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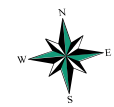
Figure 16B

Detail of 1904 Sanborn Map Depicting the Vicinity of the Perryville Waterfront and Previous Railroad Lines

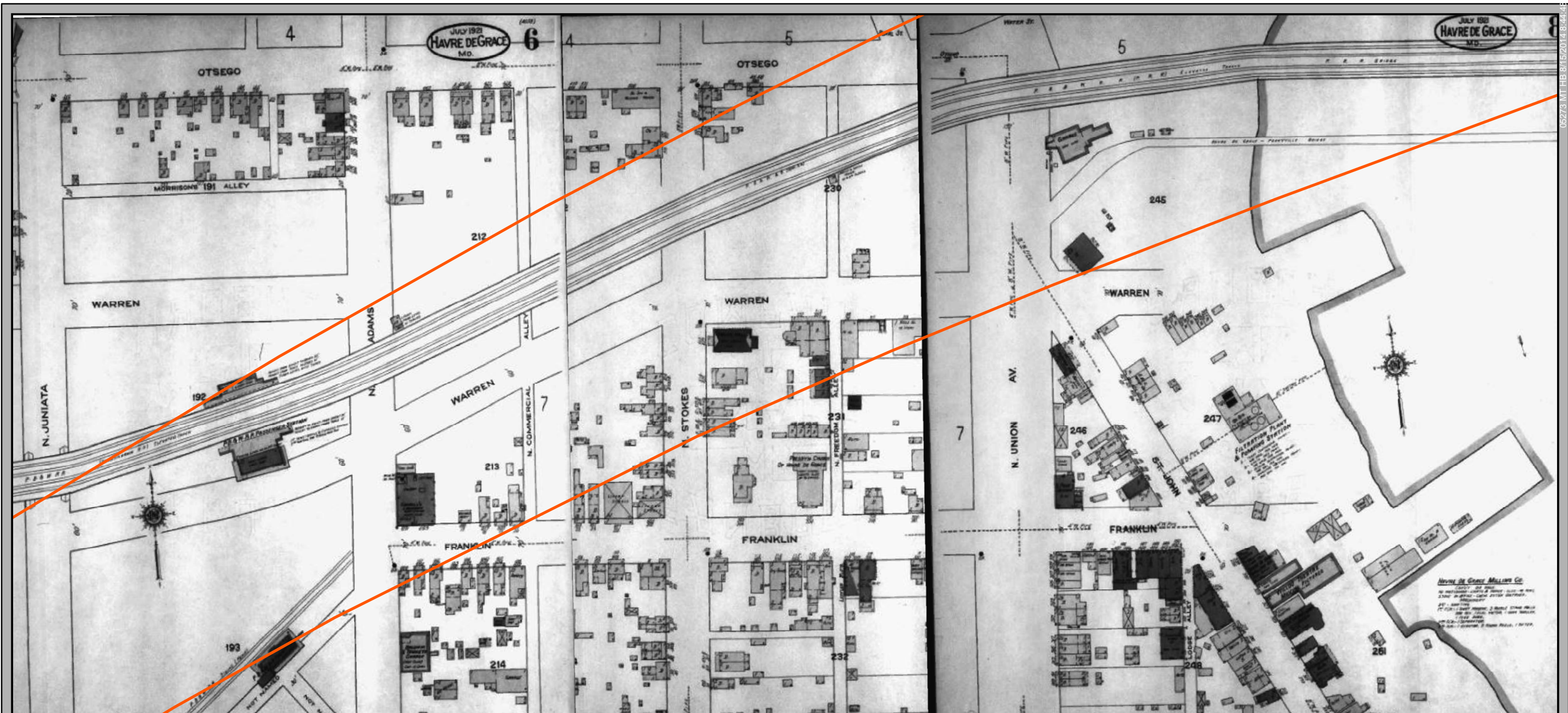
**Susquehanna River Rail Bridge Project
Harford and Cecil Counties, Maryland**


Source: Sanborn Map Company, 1904

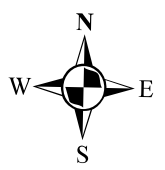
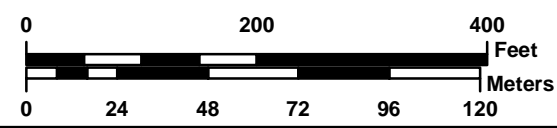
 Archeological Area of Potential Effects



Not to Scale



 Archeological Area of Potential Effects



**McCORMICK
TAYLOR**

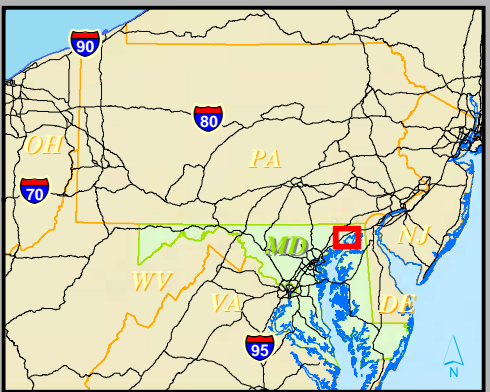




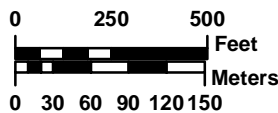
Figure 17
Detail of 1921 Sanborn Map Depicting the
Vicinity of the Havre de Grace Waterfront
and Existing Railroad Bridge Structure

Susquehanna River Rail Bridge Project
Harford and Cecil Counties, Maryland

Source: Sanborn Map Company, 1921



-  Detail of Historic Maps
-  Archeological Area of Potential Effects



**McCORMICK
TAYLOR**

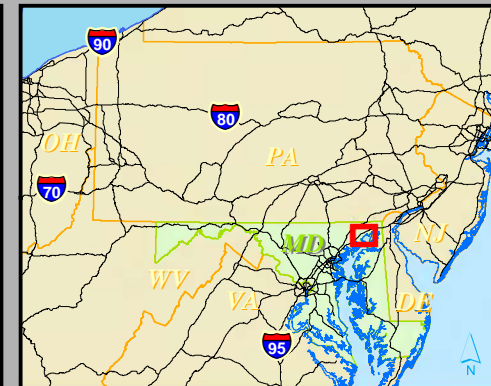


Figure 18 Index
Detail of 1923 Sanborn Map Depicting
 the Vicinity of the Perryville Waterfront
 and Existing Railroad Intersection

Susquehanna River Rail Bridge Project
 Harford and Cecil Counties, Maryland

Source: Sanborn Map Company, 1923

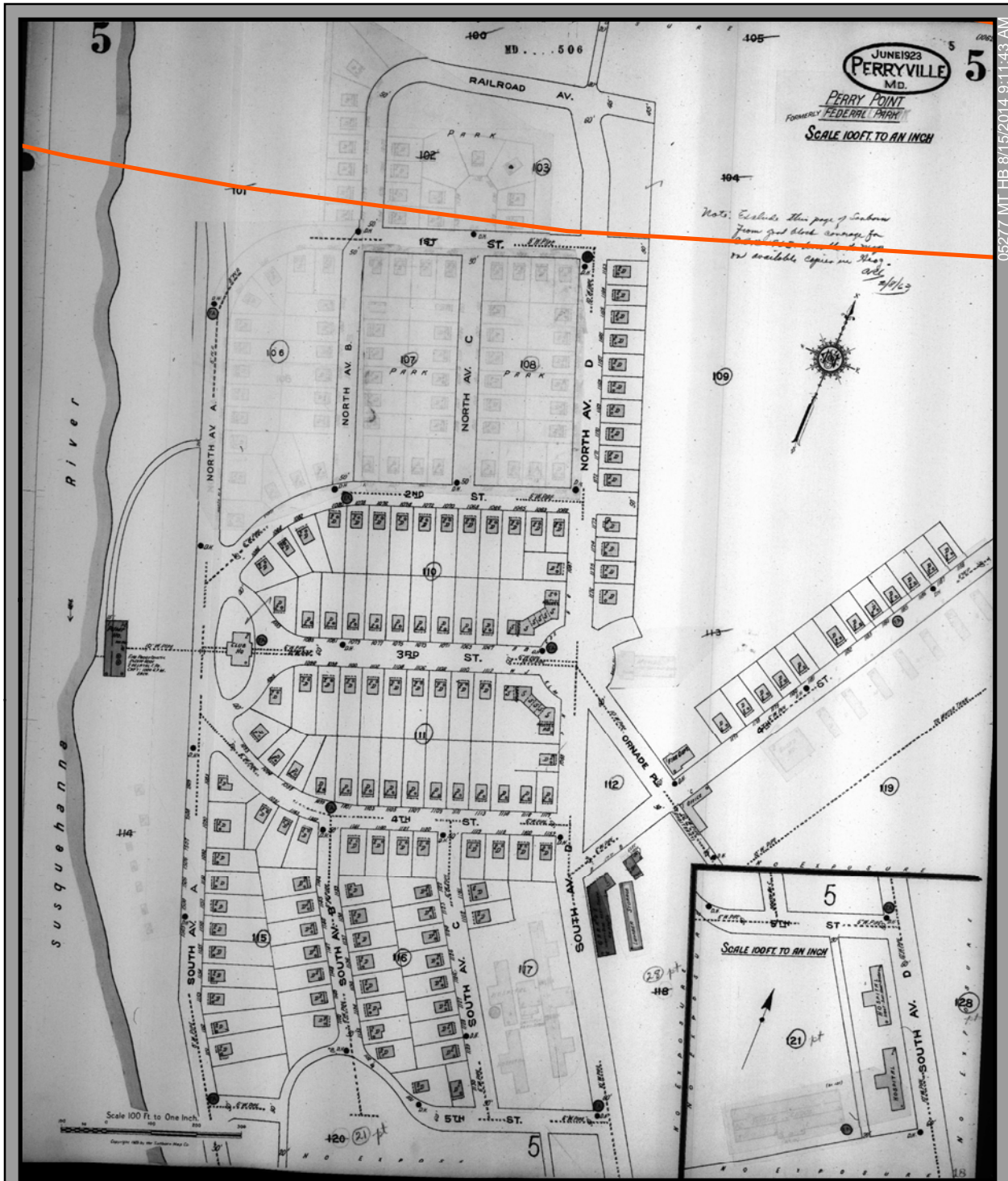



Figure 18A
 Detail of 1923 Sanborn Map Depicting the Vicinity of the Perryville Waterfront
 and Existing Railroad Intersection



Susquehanna River Rail Bridge Project
 Harford and Cecil Counties, Maryland

 Archeological Area
 of Potential Effects

Source: Sanborn Map Company, 1923

Not to Scale

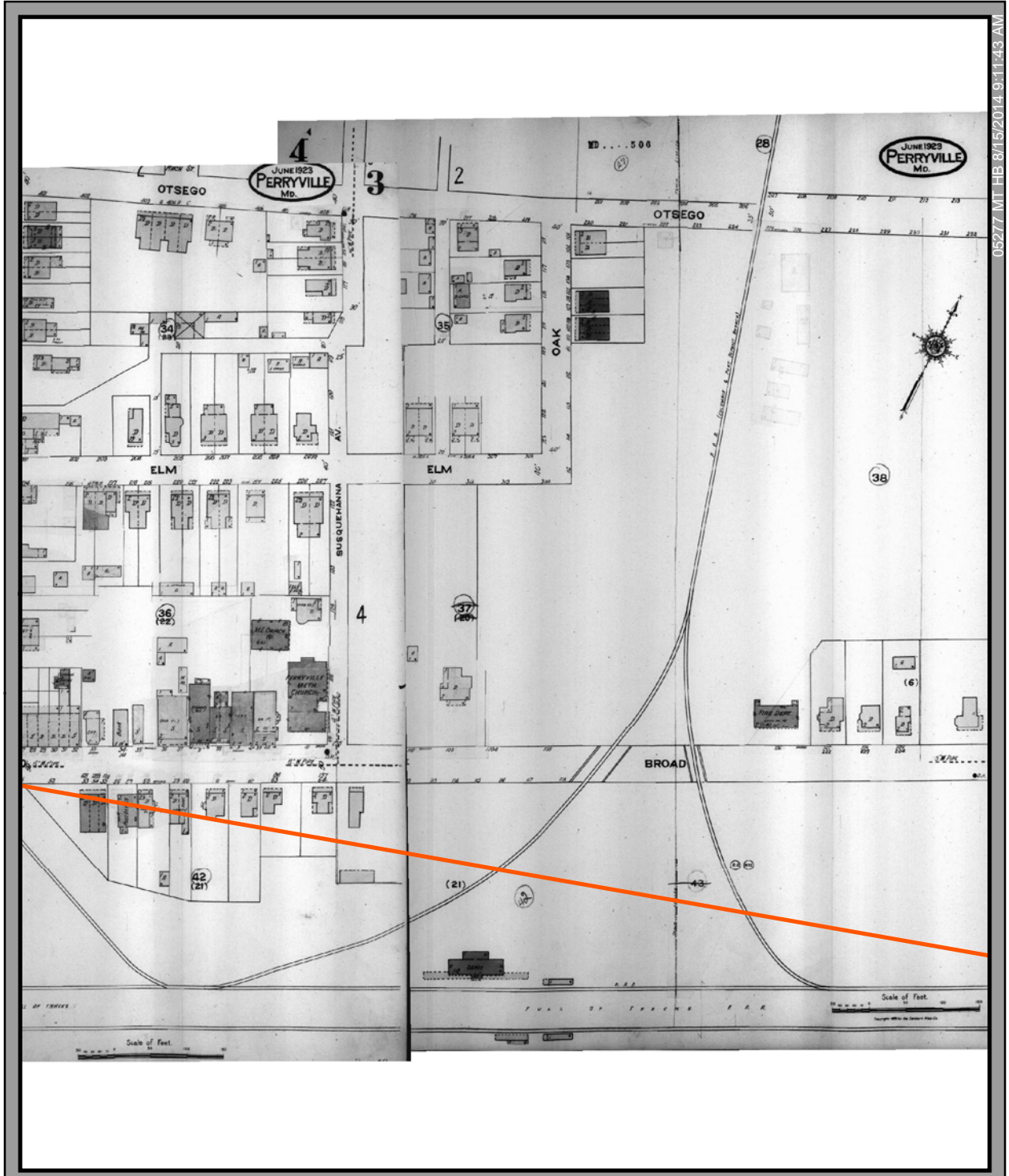



Figure 18B
Detail of 1923 Sanborn Map Depicting the Vicinity of the Perryville Waterfront
and Existing Railroad Intersection



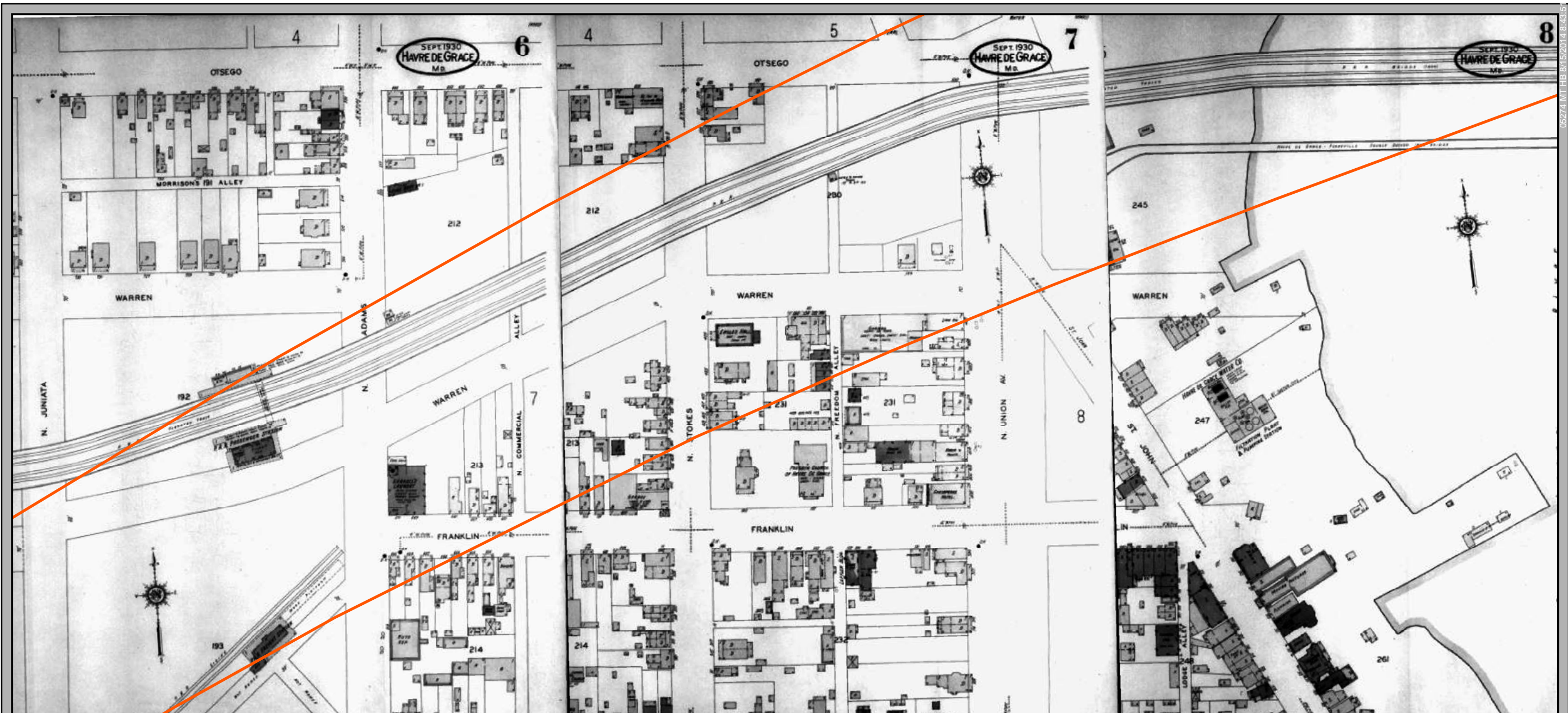
Susquehanna River Rail Bridge Project
Harford and Cecil Counties, Maryland


 Archeological Area
of Potential Effects

Source: Sanborn Map Company, 1923

Not to Scale

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 Archeological Area of Potential Effects

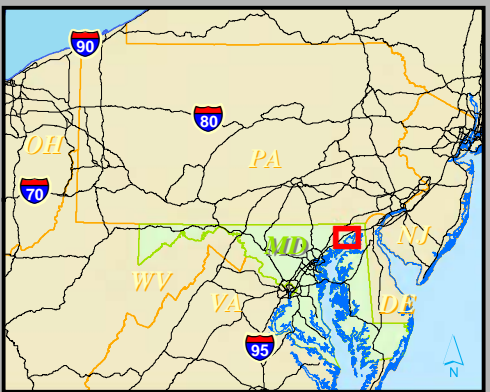
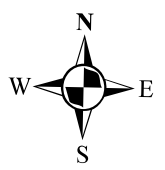
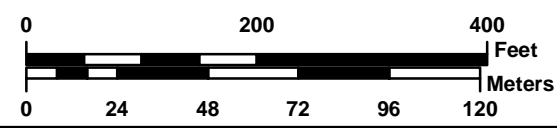


Figure 19
 Detail of 1930 Sanborn Map Depicting the
 Vicinity of the Havre de Grace Waterfront
 and Existing Railroad Bridge Structure

Susquehanna River Rail Bridge Project
 Harford and Cecil Counties, Maryland

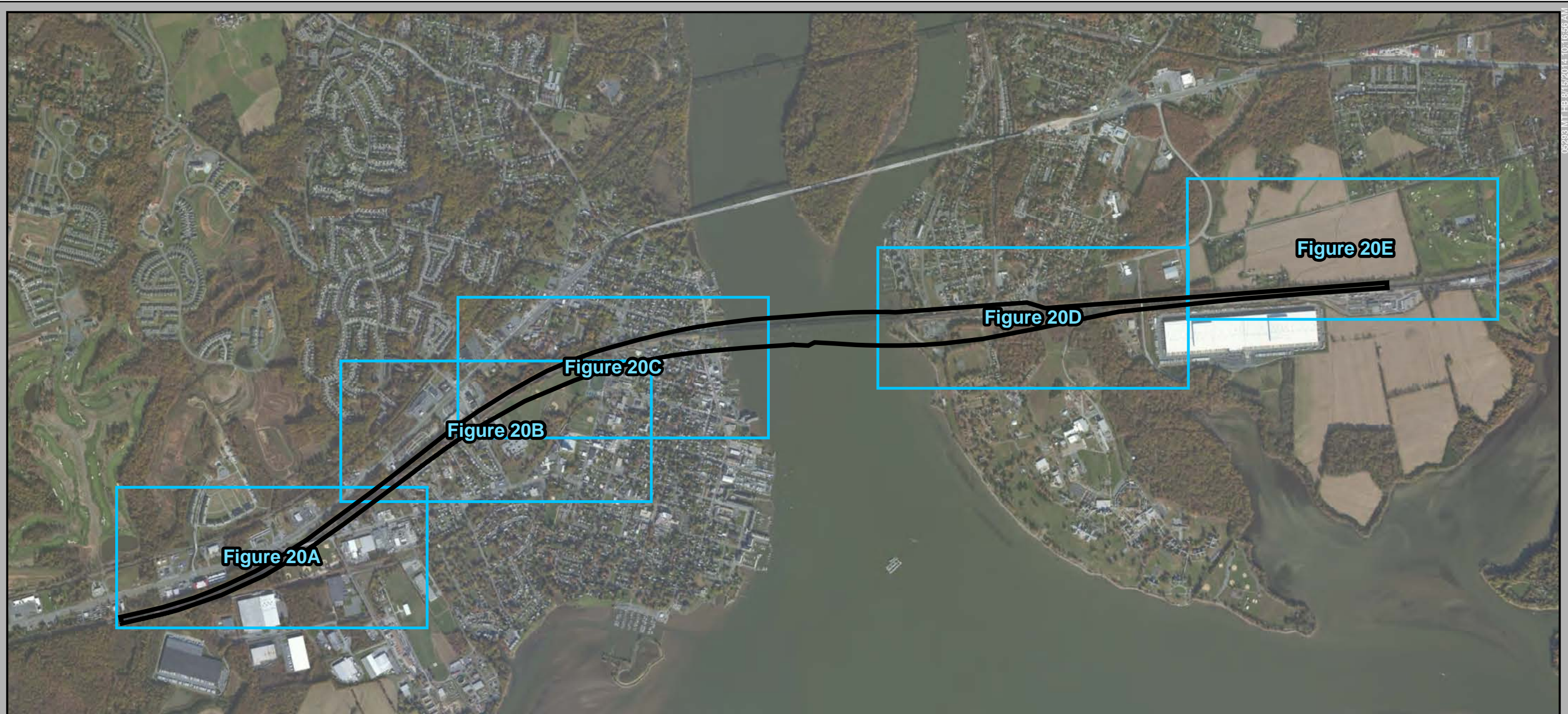
Source: Sanborn Map Company, 1930

6.0 RESULTS OF FIELD RECONNAISSANCE



The APE encompasses all of the various design alternatives for the project. The majority of the each design alternative lies within the existing Amtrak right-of-way (ROW), which has been severely disturbed by prior railway construction activities. However, in proximity to the Susquehanna River shoreline, the width of the project APE expands outside of the current ROW to allow for the numerous design alternatives associated with the bridge rehabilitation or replacement. For the purposes of the archeological assessment, project investigators subdivided the portions of the APE outside of the current ROW into five (5) distinct study areas (**Figure 20**). On the western shore of the river (Havre de Grace side), there are three study areas extending approximately from the intersection of the Amtrak rail line and Lewis Lane and proceeding in a northeasterly direction through the town of Havre de Grace to the Susquehanna River shoreline. Similarly, on the eastern shore of the river (Perryville side) there are two study areas extending from the eastern shoreline and proceeding in a northeasterly direction to the intersection of the rail corridor and Firestone Drive, near the Perryville wastewater treatment plant.

6.1 Amtrak ROW

In order to thoroughly record the existing conditions within the Amtrak ROW, the ROW was photo documented as a supplement to the written observations of the archaeologists. Within the vicinity of downtown Havre de Grace and Perryville, the existing rail corridor is elevated above the surrounding neighborhoods. The elevated line is supported by a series of large earthen berms. In many locations underground utilities and supports for overhead utilities were observed within and immediately adjacent to the rail corridor. Outside of the setting of the towns, the ROW is comprised of graded areas. These graded areas are the result of cutting and filling activities associated with the construction of the rail corridor. In many areas, drainage ditches were also observed adjacent to the rail lines. Scrub grass vegetation, gravels, and small to medium sized stones serve as the ground cover for the majority of the rail corridor. Severe disturbance was observed within the ROW throughout the entire APE. The encountered disturbance was determined to be the result of severe cutting and filling activities associated with the construction of the current rail corridor. These observations were supported by historical topographic mapping (USGS 1900, 1906, 1912, 1920, 1923, 1931, 1941, 1942, 1945, 1955, 1965, 1971, 1977, 1984, 1985, 1991, 1993, 2000, and 2013; www.historicaerials.com) and USGS historic aerial photography (USGS 1952, 1970, 2007, and 2009; www.historicaerials.com) which exist for the area. Based on the severity of the activities associated with the rail corridor construction, there is low potential that intact historic or pre-contact cultural deposits are present within the current Amtrak ROW, with the possible exception of the former Havre de Grace Train Station east of Juniata Street (see Section 6.2) (**Figure 20; Photographs 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12**).



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 Archeological Area of Potential Effects
 Map Sheets

0 1,000 2,000 4,000 Feet
 0 240 480 720 960 1,200 Meters



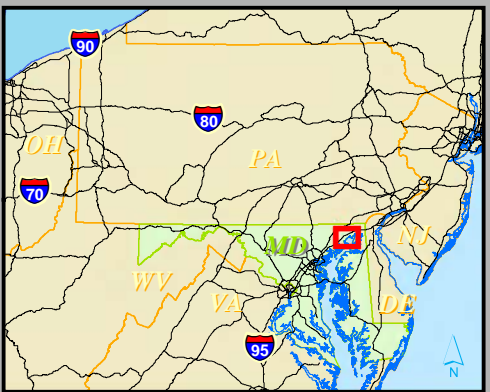
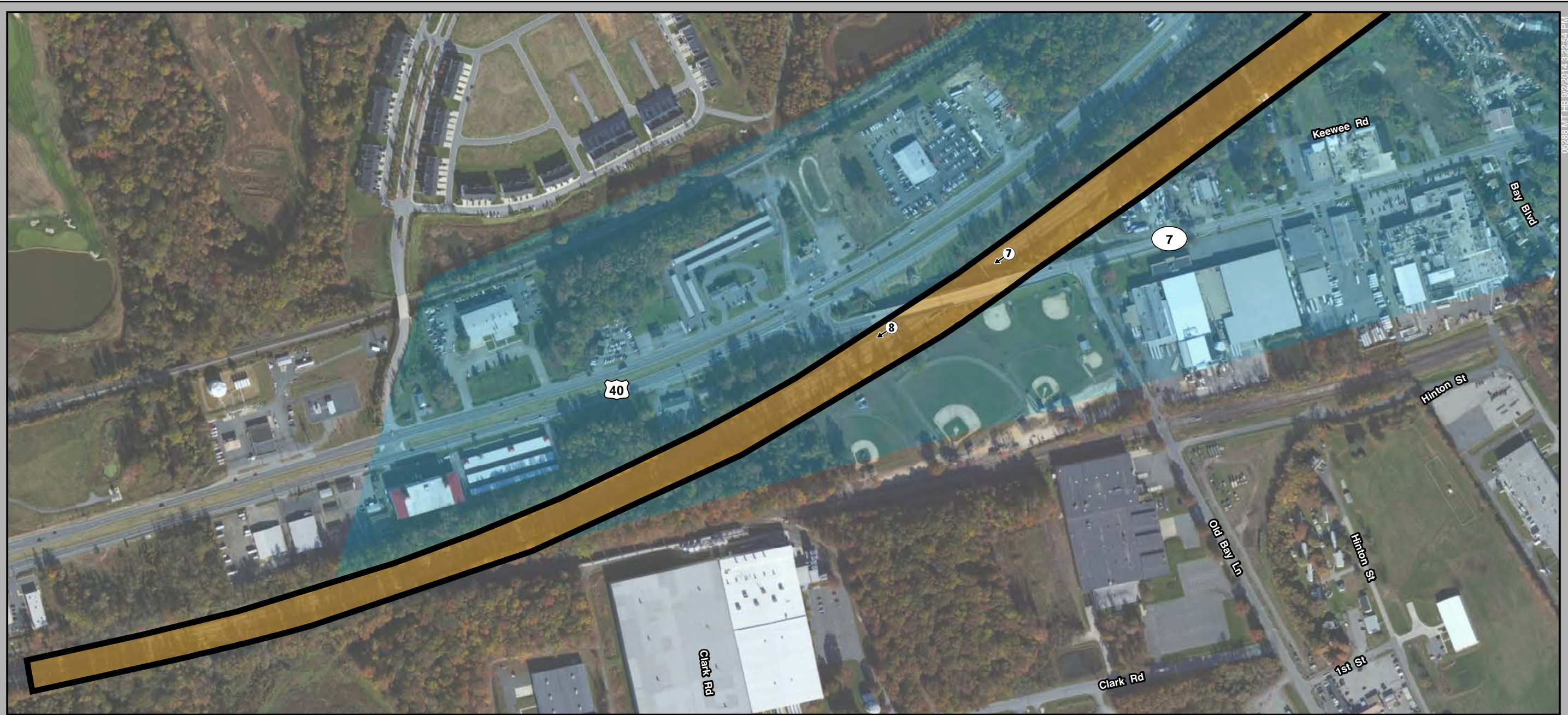




Figure 20 Index Map
Archeological Assessment and
Additional Survey Recommendations
Susquehanna River Rail Bridge Project
Harford and Cecil Counties, Maryland
 Source: Esri & DigitalGlobe, 2013



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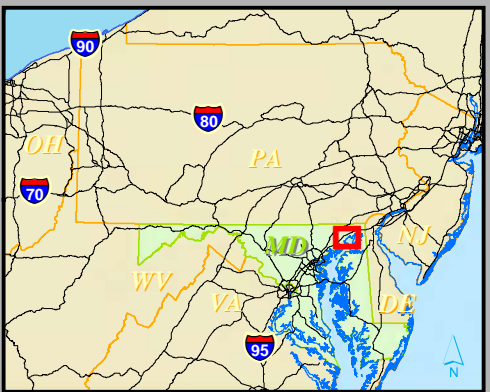
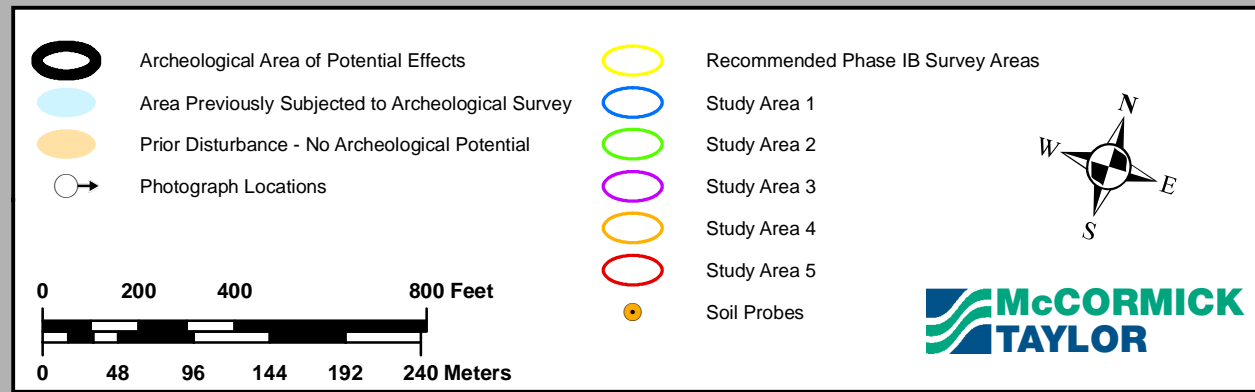


Figure 20A
Archeological Assessment and
Additional Survey Recommendations
Susquehanna River Rail Bridge Project
Harford and Cecil Counties, Maryland
 Source: Esri & DigitalGlobe, 2013

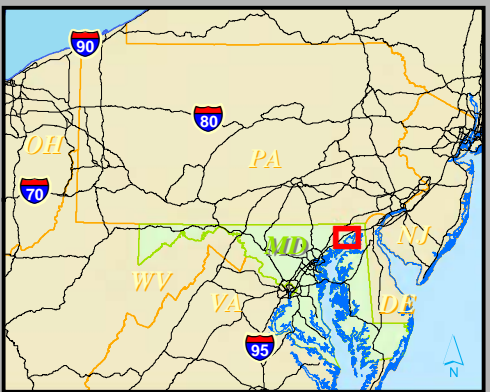
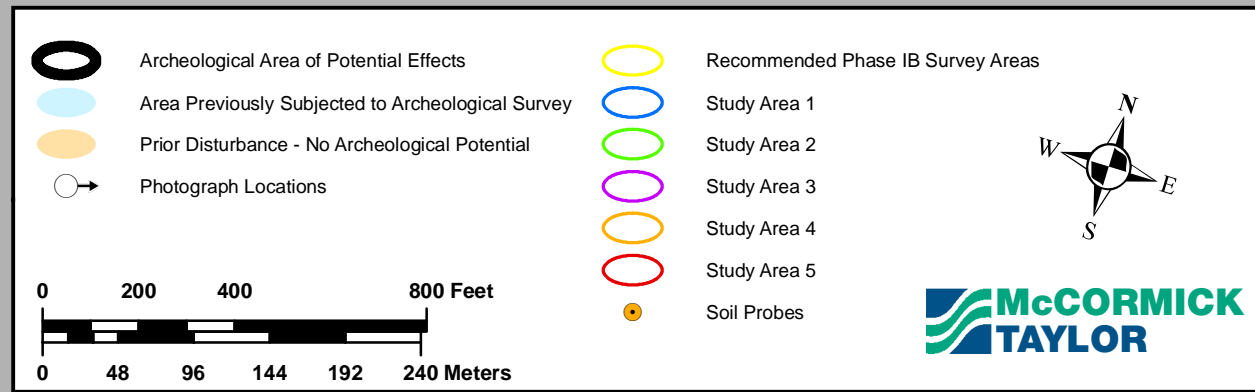
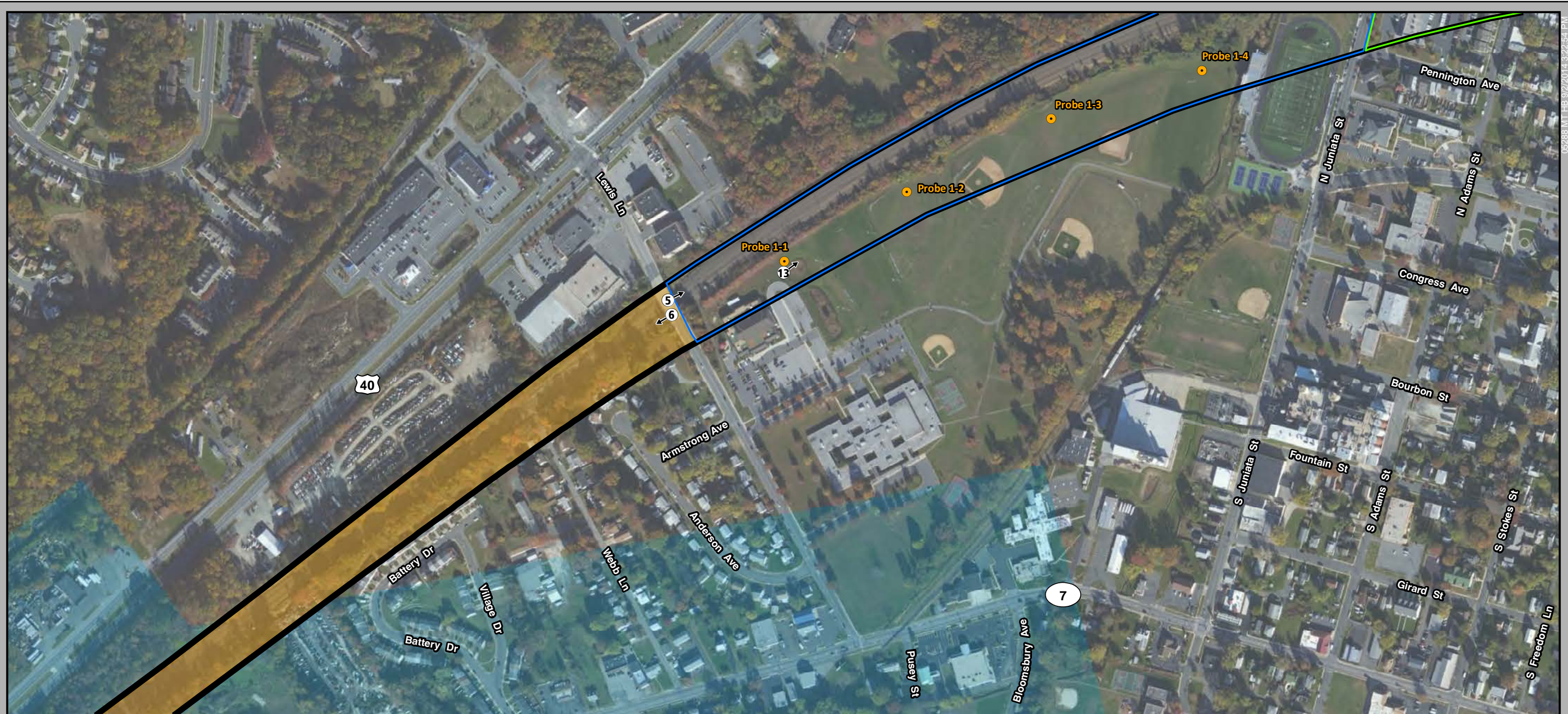
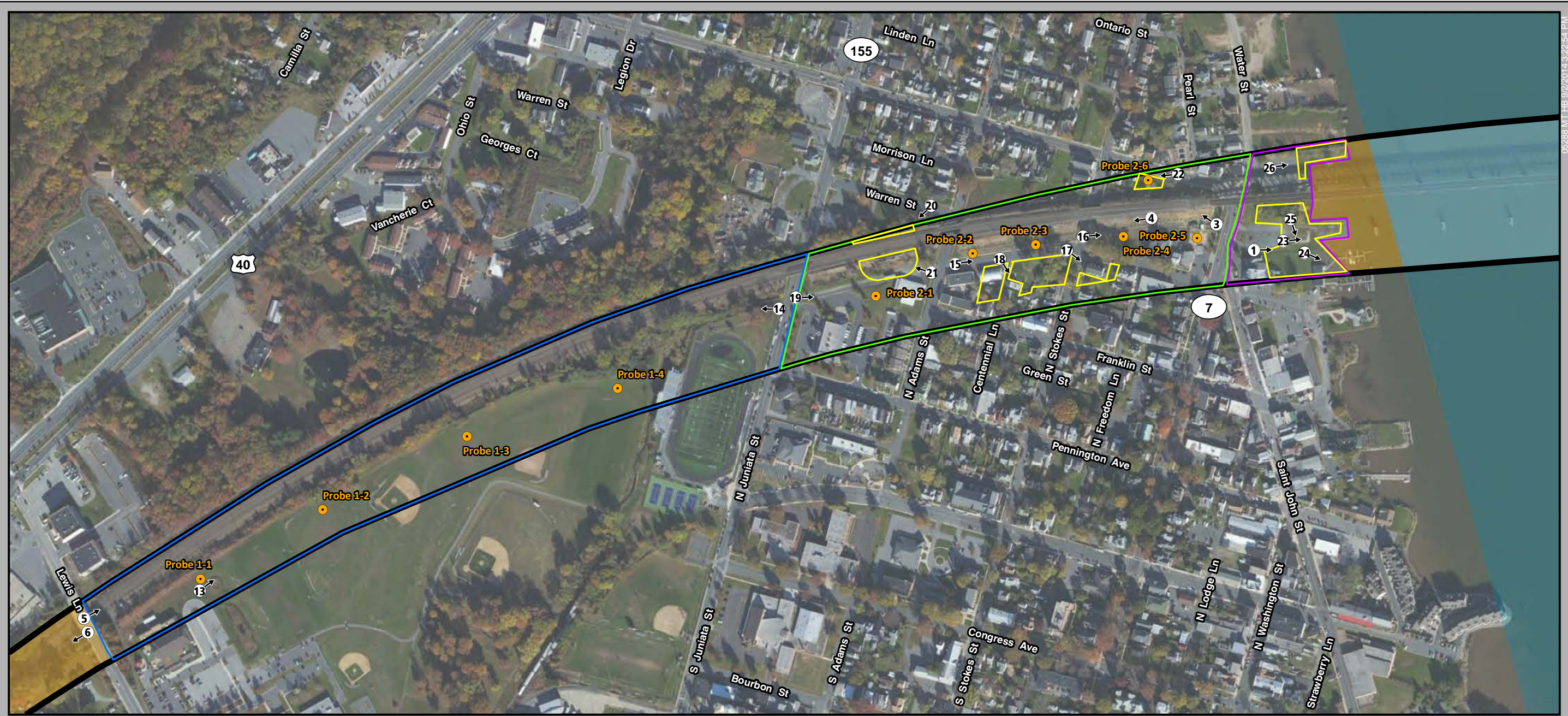


Figure 20B
Archeological Assessment and
Additional Survey Recommendations
Susquehanna River Rail Bridge Project
Harford and Cecil Counties, Maryland
 Source: Esri & DigitalGlobe, 2013



	Archeological Area of Potential Effects		Recommended Phase IB Survey Areas
	Area Previously Subjected to Archeological Survey		Study Area 1
	Prior Disturbance - No Archeological Potential		Study Area 2
	Photograph Locations		Study Area 3
			Study Area 4
			Study Area 5
			Soil Probes

0 200 400 800 Feet

0 48 96 144 192 240 Meters

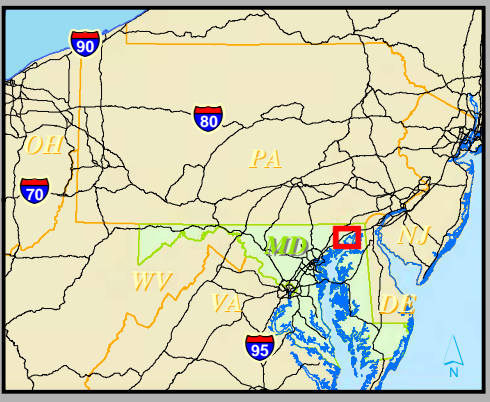
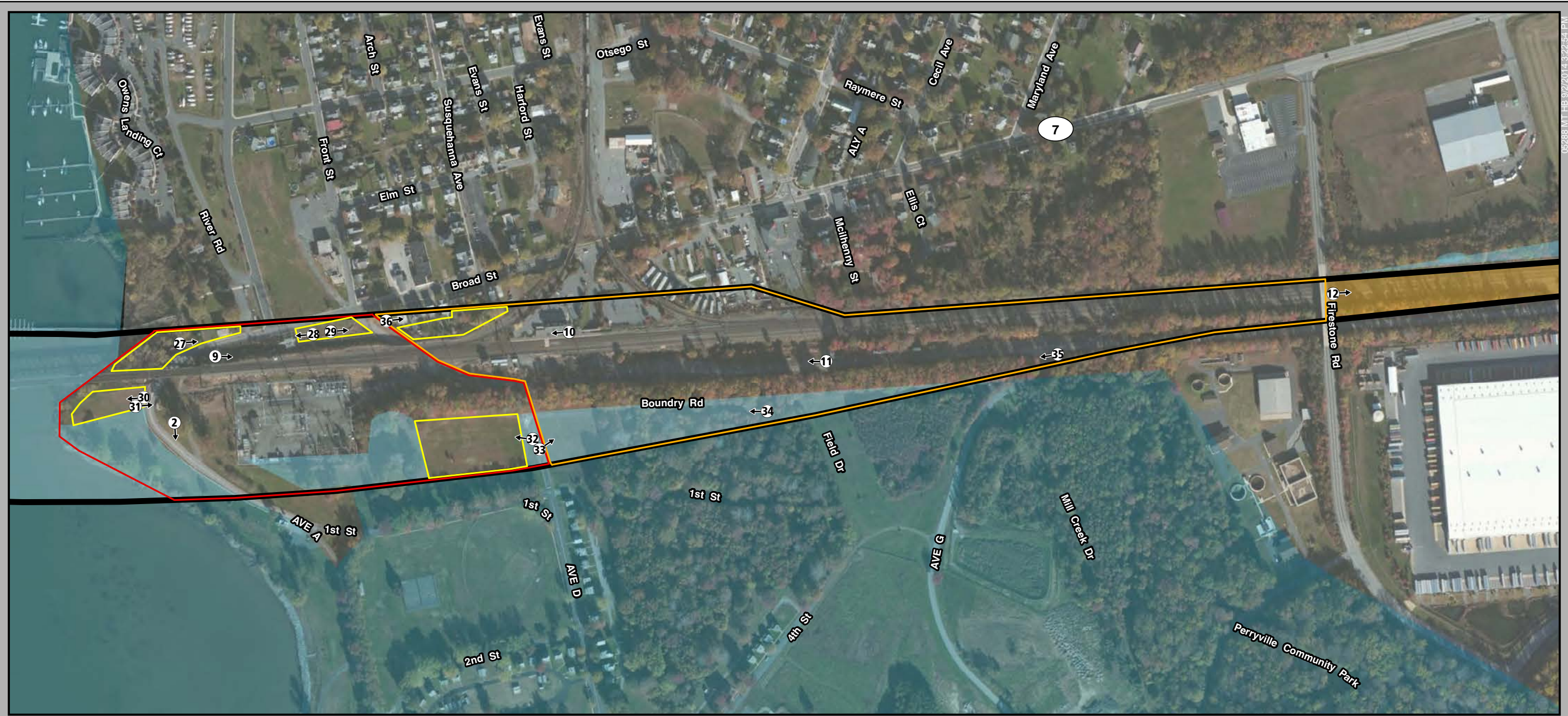


Figure 20C
Archeological Assessment and
Additional Survey Recommendations
 Susquehanna River Rail Bridge Project
 Harford and Cecil Counties, Maryland
 Source: Esri & DigitalGlobe, 2013

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	Archeological Area of Potential Effects		Recommended Phase IB Survey Areas
	Area Previously Subjected to Archeological Survey		Study Area 1
	Prior Disturbance - No Archeological Potential		Study Area 2
	Photograph Locations		Study Area 3
			Study Area 4
			Study Area 5
			Soil Probes

0 200 400 800 Feet

0 48 96 144 192 240 Meters

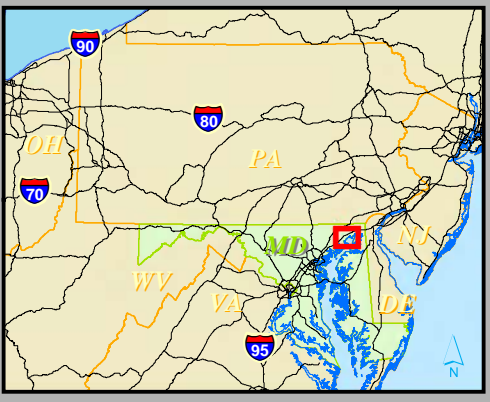


Figure 20D
Archeological Assessment and
Additional Survey Recommendations
Susquehanna River Rail Bridge Project
Harford and Cecil Counties, Maryland
 Source: Esri & DigitalGlobe, 2013

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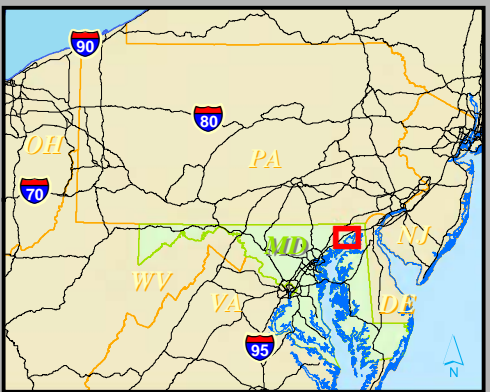
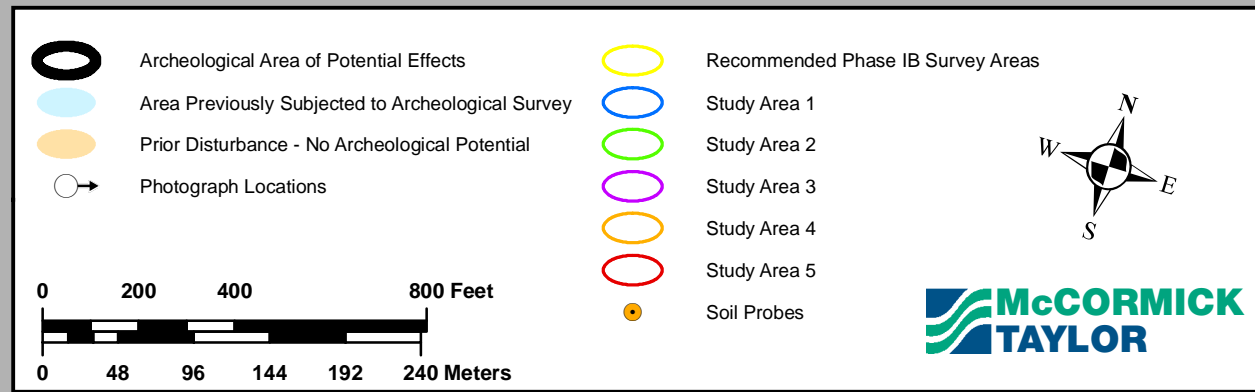


Figure 20E
Archeological Assessment and
Additional Survey Recommendations
Susquehanna River Rail Bridge Project
Harford and Cecil Counties, Maryland
 Source: Esri & DigitalGlobe, 2013



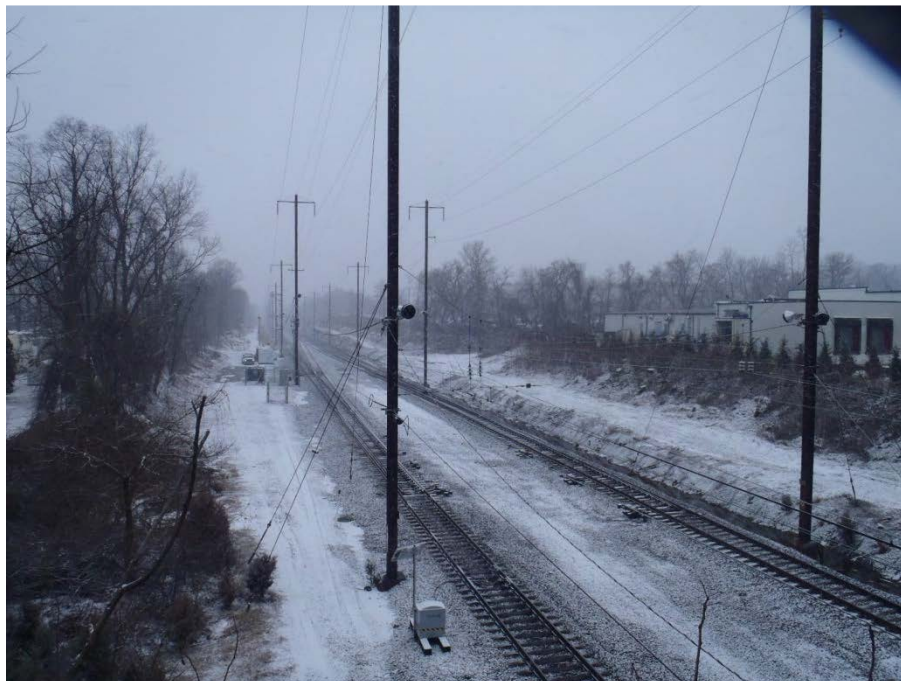
Photograph 3: General view of embankment supporting railroad and railroad bridge over St. John Street, facing southwest; Note the presence of multiple underground utilities within the vicinity of the berm.



Photograph 4: General view of embankment supporting the elevated railroad corridor, facing southwest.



Photograph 5: General view of disturbed Amtrak ROW east of Lewis Lane, facing northeast.



Photograph 6: General view of disturbed Amtrak ROW west of Lewis Lane, facing southwest.



Photograph 7: General view of disturbed Amtrak ROW east of Revolution Street, facing west.



Photograph 8: General view of disturbed Amtrak ROW west of Revolution Street, facing west.



Photograph 9: General view of embankment south of Broad Street within Perryville, facing east.



Photograph 10: General view of Perryville Station, facing west.



Photograph 11: General view of disturbed Amtrak ROW along access road west of Avenue G, facing west.



Photograph 12: General view of disturbed Amtrak ROW east of Firestone Road, facing east.

6.1 Study Area 1: Havre de Grace Schools' Athletic Fields

Study Area 1 is bounded on the west by the Lewis Lane overpass, on the east by North Juniata Street, and on the north and south by the current limits of the archeological APE (**Figure 20**). East of Lewis Lane the project's APE begins to expand beyond the limits of the existing rail corridor. Within Study Area 1, the archeological APE only extends to the south of the existing rail corridor. At present, there are no proposed disturbances north of the existing rail line.

Currently, the entirety of Study Area 1 is comprised of graded, leveled, grass fields. Study Area 1 contains several athletic fields associated with the Havre de Grace middle school and high school campuses, including several soccer fields, two baseball diamonds, and the Havre de Grace high school football stadium (**Photographs 13 and 14**). In terms of natural features, there is a small unnamed stream or drainage located between one of the soccer fields and the football stadium that is oriented in a north-south direction. This water course runs under the current Amtrak corridor through a culvert, resuming its course north of the rail line. A review of historic mapping and aerial photographs indicated that prior to the usage of this area as an athletic complex, this parcel appeared to be undeveloped or in use as agricultural fields. Sanborn maps for nineteenth and twentieth century Havre de Grace do not extend within Study Area 1. Neither historic aerial photographs (dating to as early as 1952) nor historical topographic maps from the nineteenth and twentieth centuries indicate the presence of any structures within Study Area 1 other than the original PW&B railroad corridor and the current rail corridor (USGS 1971, 1945, 1906; www.historicaerials.com). Previously, the railway alignment was located along a more southwesterly orientation, west of Juniata Street and extending through the intersection of Lewis Lane and Revolution Street. The topographic maps and historic aerial photographs document the conditions of the area prior to the construction of the current railway alignment as well as the conditions following its construction (**Figures 21, 22, 23, and 24**). Historic mapping and historic aerials indicate that changes in topography have occurred within Study Area 1 as a result of the construction of the new railway alignment as well as subsequent construction activities associated with the creation of several athletic fields. The 1942 topographic map depicts the topography of the area following the construction of the new railway alignment (**Figure 21**). Prior to the construction, and recently thereafter, multiple additional tributaries are present. The 1952 historic aerial indicates that the areas immediately adjacent to these tributaries were wooded with agricultural fields to the east and west (**Figure 22**). The 1955 topographic map, as well as 1970 historic aerial (**Figures 23 and 24**), indicate that these tributaries were impacted by additional construction activities following the railway construction. Specifically, the 1970 historic aerial indicates that the area in the vicinity of the tributaries has been graded and all of the associated foliage and ground cover removed. It is likely that all of the upper soils were disturbed as a result of this defoliation. In addition, in order to create the current athletic fields, large amounts of fill would have been spread across this entire area in order to fill in the channels of these tributaries and create a level surface.

A series of four (4) soil probes were conducted at judgmentally placed locations throughout Study Area 1 in an effort to determine the level of subsurface stratigraphic integrity and the amount of disturbance that occurred as a result of the construction of the athletic fields. In each case, the probes exhibited a disturbed soil profile to a maximum depth of 24 inches (60

centimeters). While it is possible that pre-contact resources were once located within this area, the large amount of landform modification and sculpting that occurred in order to accommodate the construction of the athletic fields makes it highly unlikely that much of the original soil strata, and consequently any intact artifact-bearing cultural deposits, would have survived in this area. Though historic resources would have been similarly affected by this ground disturbance, a review of mapping resources also indicated the apparent lack of historic settlement within this area. Given the combined results of the historic map review and the soil probes, there is little potential for Study Area 1 to contain archeological resources.

6.2 Study Area 2: Town of Havre de Grace and Warren Street Vicinity

Study Area 2 is bounded on the west by North Juniata Street, on the east by North Union Avenue, and on the north and south by the current limits of the archeological APE (**Figure 20**). Within Study Area 2, the archeological APE begins to expand to include an area both north and south of the existing rail corridor. The western portion of Study Area 2 remains entirely to the south of the rail corridor, extending approximately 170 feet (52 meters) southward from the rail corridor beyond the current alignment of Warren Street. Beginning near the intersection of the current rail corridor and North Stokes Street, however, the archeological APE begins to expand north of the current rail corridor, extending as far north as Otsego Street.

Outside of the rail corridor, Study Area 2 is characterized by paved two-lane streets lined with single-family homes, multi-family residences, and commercial establishments that are typical of the Havre de Grace streetscape. Interspersed between the existing structures are patches of grass-covered manicured lawn areas. Within this portion of the APE, the rail corridor runs along the crest of a berm which elevates the line several feet above the surrounding street level. Stone abutments and retaining walls serve to form the boundaries of the earthen berm as well as act as support structures for carrying the rail line over the existing Havre de Grace street grid. The slopes for the earthen berm extend outward approximately 50 feet (15 meters) along either side of the existing line (**Photographs 15, 16, 17, 18, 19, 20, 21, and 22**).

While a series of soil probes were completed within the bounds of Study Area 2, the research team's understanding of the nature of the subsurface soil deposits within this area may not be considered as complete as that of Study Area 1. As with the previous study area, no testing was conducted within any portion of Amtrak property, but in addition, field researchers also did not attempt to access yard areas that were obviously associated with a private residence or commercial establishment. Due to the area being partitioned into numerous smaller lots, many of which are privately owned, the placement of the soil probes was limited. In total, five (5) soil probes were placed in the grassy areas immediately south of the existing rail line and one (1) additional soil probe was placed north of the line. The probes south of the rail corridor were placed in the grassy areas located between the edge of the railroad berm and Warren Street. No probes were placed in the private lots located to the south of Warren Street. North of the rail line, the single probe was placed in a grassy lot located near the corner of Otsego Street and North Freedom Lane.

As in Study Area 1, each of the five probes located south of the rail line in Study Area 2 exhibited a disturbed soil profile to a depth ranging from 1.5-2.0 feet (0.45-0.6 meters) below

current surface grade. It is important to note that at least a portion of this encountered disturbance may be related to not only the construction of the existing early twentieth century rail corridor, but also the earlier nineteenth century PW&B rail alignment. The nineteenth century PW&B rail line was located more or less along the current path of Warren Street. The previous alignment is depicted on aerial and topographic maps as early as 1900 (**Figures 11, 21, 22, 23, and 24**) Historic mapping also indicates that the area east of S. Juniata St. and south of Warren St. was likely disturbed by the construction of the previous alignment (**Figures 15, 17, 21 and 22**).

Approximately 100 feet (30 meters) west of Adams Street, a building was observed to extend under the railroad tracks. This appears to be the location of the former Havre de Grace Train Station. The remains of the building were observed on both the north and south sides of the tracks (**Figures 17, 19, 21, 22, 23, and 24; Photographs 19, 20, and 21**). It is possible that intact cultural deposits associated with this structure are present within the APE.

Although the areas of the APE located south of Warren Street were not investigated in terms of subsurface integrity, a review of historic mapping indicates that the Havre de Grace street grid pattern within this portion of the project remains mostly intact from a period dating back to the nineteenth century (**Figures 11A, 14, 15, 17, 19, 21, 22, 23, and 24**). While the building arrangement on each of these city blocks has changed and evolved over time, there is a high probability that portions of these house lots may contain intact cultural deposits relating to building/structural remains or yard features such as outbuildings, trash pits, or privies (**Photographs 17 and 18**).

Similarly, the soil probe located to the north of the rail line near the intersection of Otsego Street and North Freedom Lane also indicates that potentially intact soils are present within this portion of the APE (**Figure 20; Photograph 22**). Beneath the root mat, the soil probe indicated approximately 8 inches (20 centimeters) of a yellowish-brown (10YR5/4) silty loam. Beneath this stratum was a mottled pale brown (10YR6/3) and reddish yellow (7.5YR6/6) silty clay loam that appears to be a transition layer to subsoil.

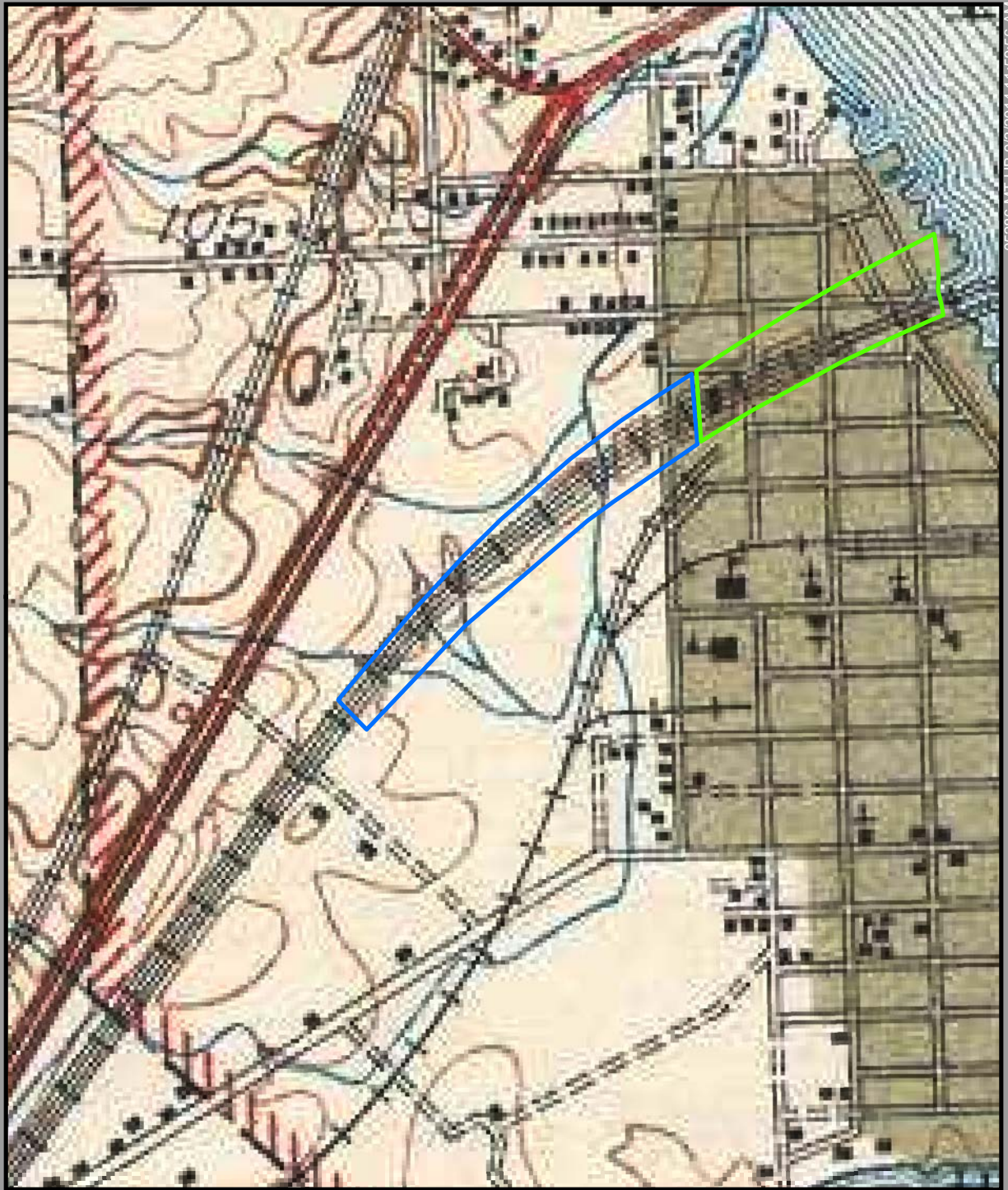
Given these findings, systematic Phase I archeological survey and detailed background research are recommended for all areas where project-related ground disturbance are proposed in the lot areas located south of Warren Street and along Otsego Street, as well as in the vicinity of the former Havre de Grace Train Station.



Photograph 13: Representative View of Study Area 1, facing east-northeast



Photograph 14: View of Study Area 1 near football stadium complex, facing west



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Figure 21
1942 Havre de Grace, MD Topographic Quadrangle Map
Depicting the Location of Study Areas 1 and 2 within the Archeological Area of Potential Effects


Study Area 1


Study Area 2

Archeological Area of Potential Effects

Susquehanna River Rail Bridge Project
Harford and Cecil Counties, Maryland

Source: Havre de Grace, MD USGS Historic Topographic Map, 1942





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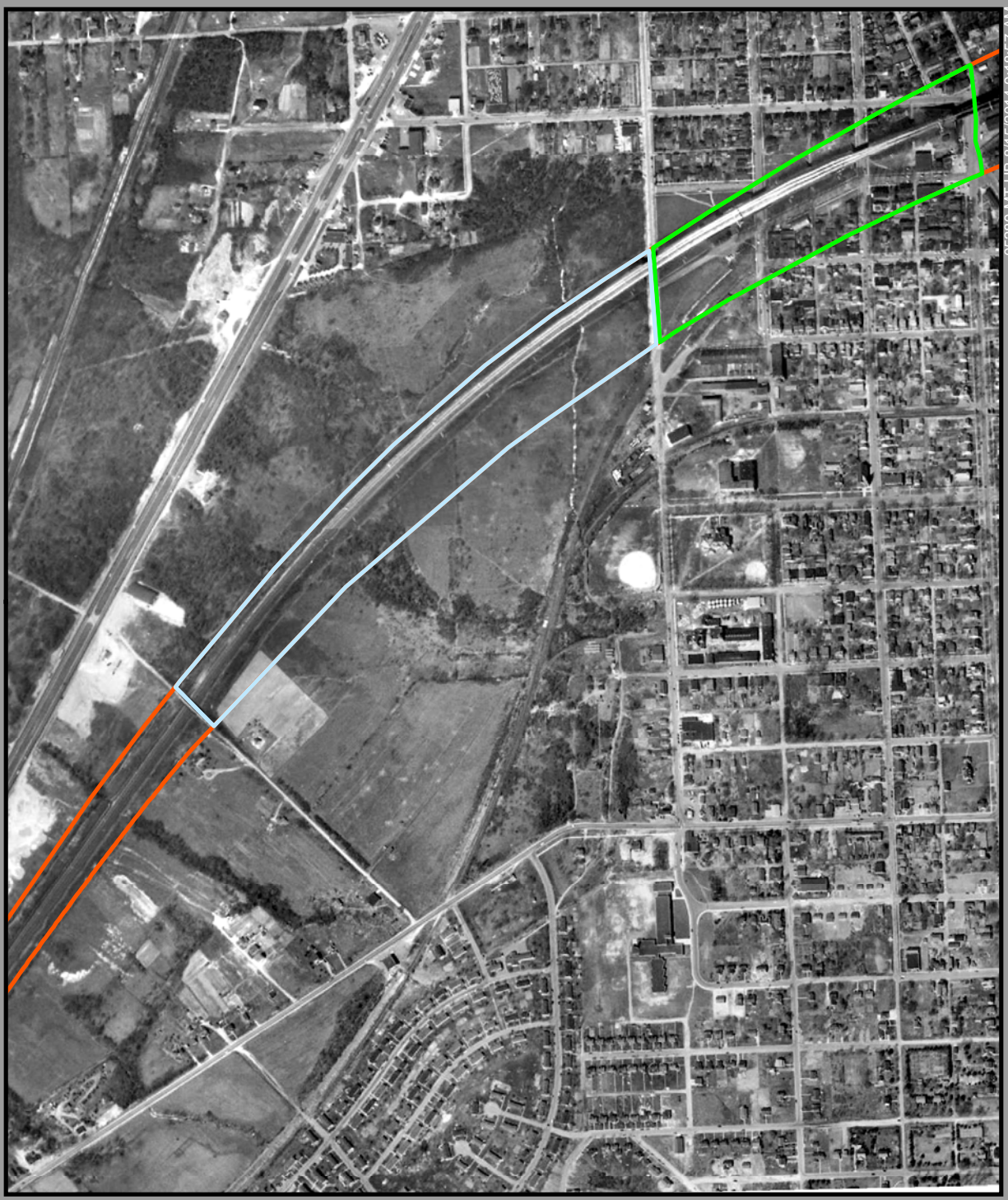



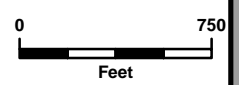


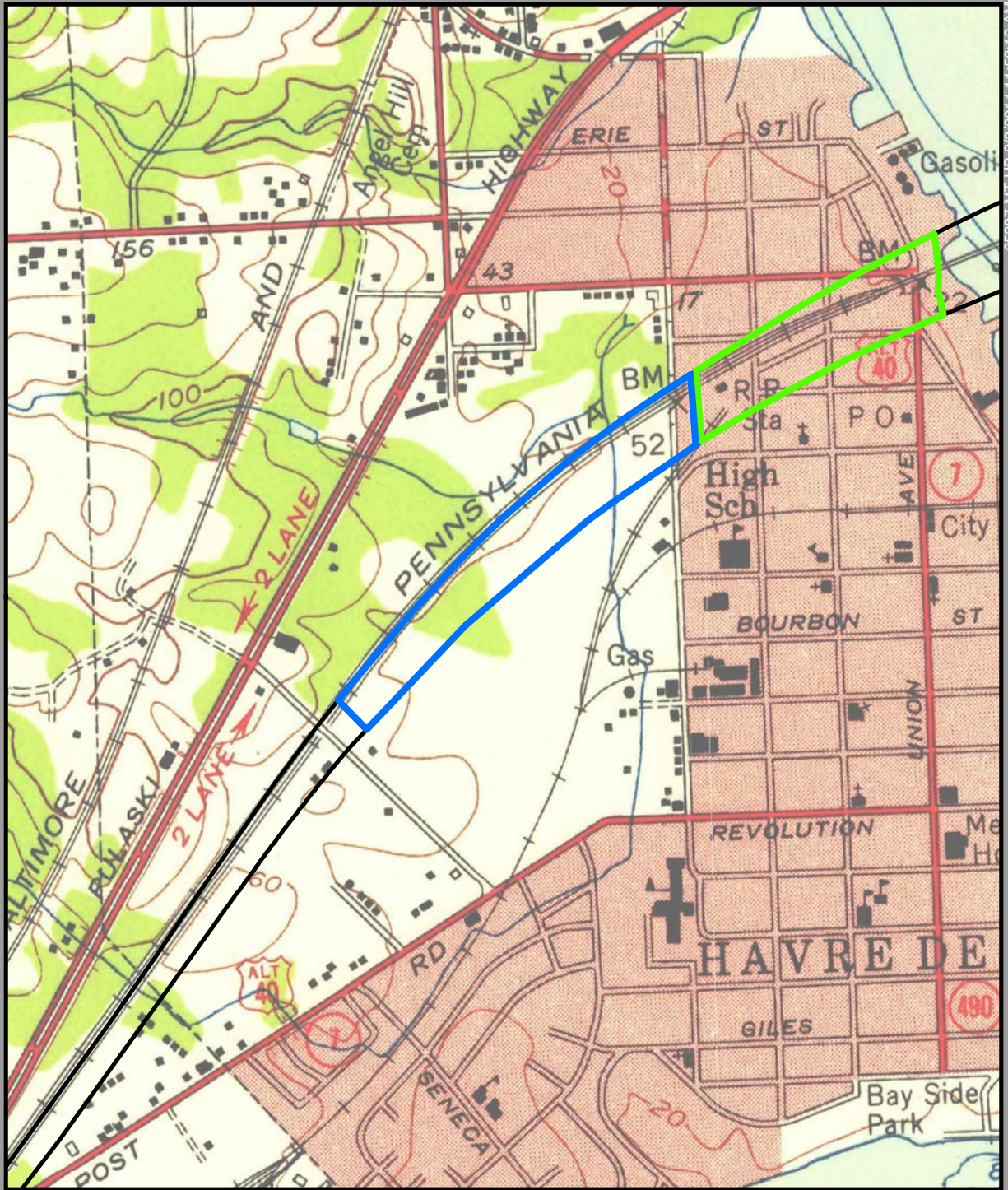
Figure 22
1952 Historic Aerial Photograph Depicting
the Location of Study Area 1 within the Archeological Area of Potential Effects

-  Study Area 1
-  Study Area 2
-  Archeological Area of Potential Effects

Susquehanna River Rail Bridge Project
Harford and Cecil Counties, Maryland

Source: Havre de Grace, MD Historic Aerial, 1952





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Figure 23
1955 Havre de Grace, MD Topographic Quadrangle Map
Depicting the Location of Study Areas 1 and 2 within the Archeological Area of Potential Effects

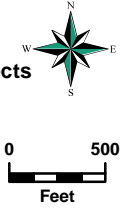
Study Area 1

Study Area 2

Archeological Area of Potential Effects

Susquehanna River Rail Bridge Project
Harford and Cecil Counties, Maryland

Source: Havre de Grace, MD USGS Historic Topographic Map, 1955



0 500
Feet

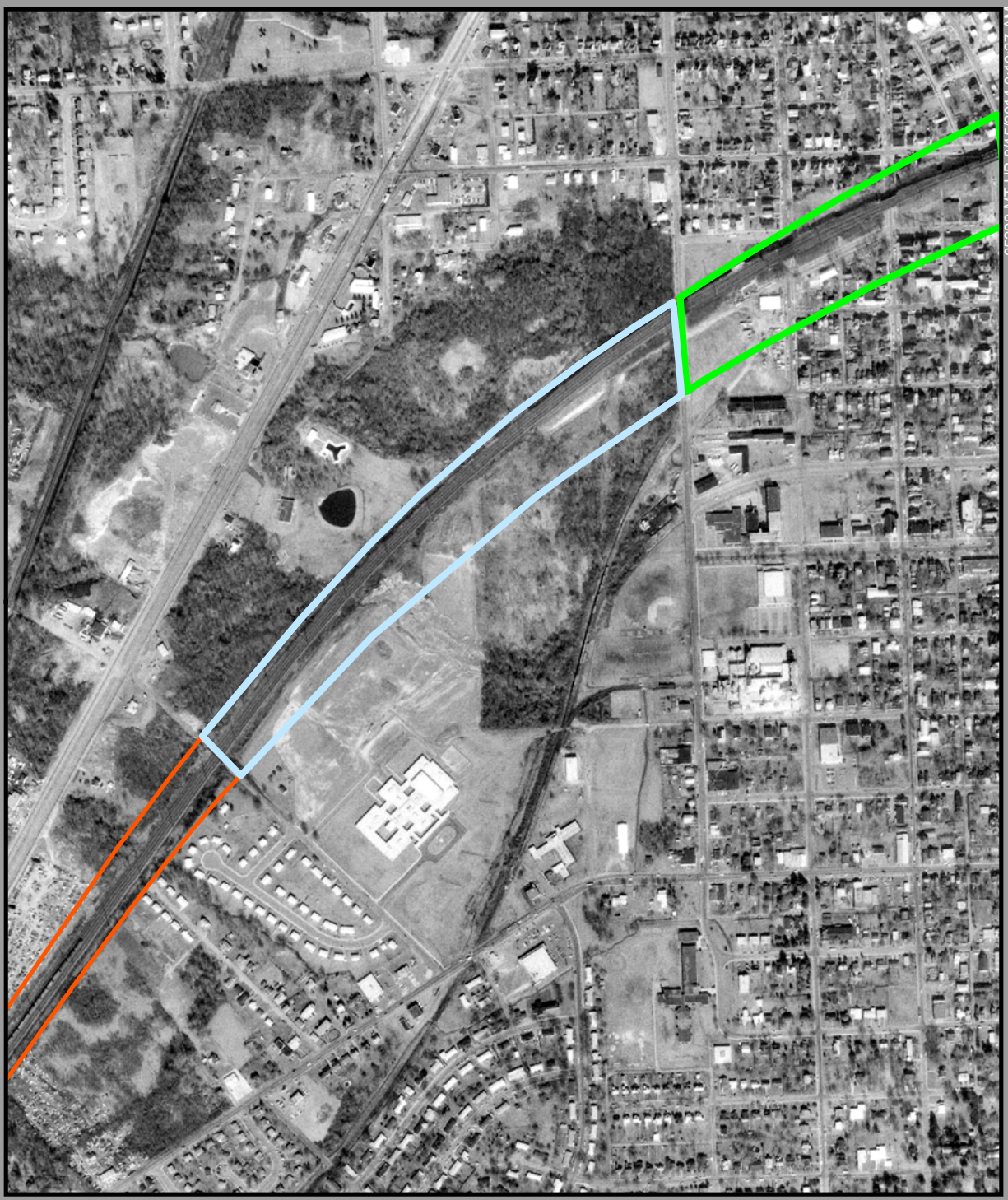





Figure 24
1970 Historic Aerial Photograph Depicting
the Location of Study Area 1 within the Archeological Area of Potential Effects

-  Study Area 1
-  Study Area 2
-  Archeological Area of Potential Effects

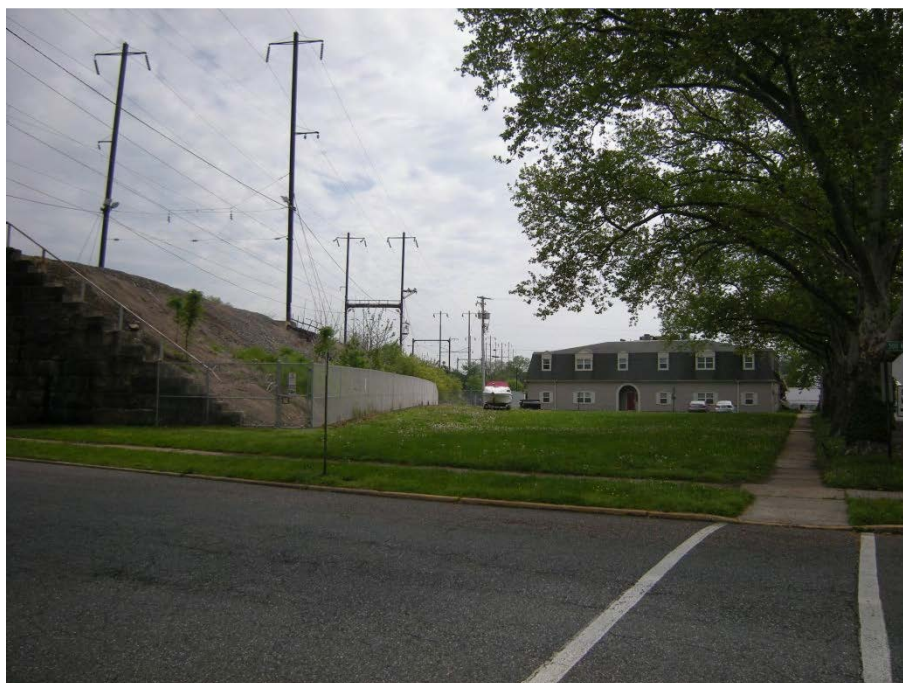
Susquehanna River Rail Bridge Project
Harford and Cecil Counties, Maryland

Source: USGS, Havre de Grace, MD Historic Aerial, 1970





Photograph 15: Representative view of rail corridor within Study Area 2, facing east-northeast.



Photograph 16: Representative view of rail corridor east of N. Stokes Street within Study Area 2, facing east; Note soil probe 2-4 placed within grass lot yielded a disturbed profile.



Photograph 17: View of neighborhood areas south of Warren Street and west of N. Stokes Street, within Study Area 2, facing southeast.



Photograph 18: View of neighborhood areas south of Warren Street along Centennial Lane within Study Area 2, facing southeast.



Photograph 19: Representative view of rail corridor along Warren Street within Study Area 2, facing northeast.



Photograph 20: View of potential remains of Havre de Grace train station within existing embankment, facing southwest.



Photograph 21: View of potential remains of Havre de Grace train station within existing embankment, facing west.



Photograph 22: General view of the location of soil probe 2-6 at the corner of Otsego Street and North Freedom Lane, facing southwest.

6.3 Study Area 3: Havre de Grace Waterfront

Study Area 3 consists of those portions of the archeological APE that are located to the north and south of the existing rail corridor along the Havre de Grace waterfront. These areas are bounded on the west by North Union Avenue and Water Street and on the east by the Susquehanna River. The entirety of this study area is located within the bounds of two city park facilities, the Jean S. Roberts Memorial Park and the David Craig Park. Both of these facilities are located along the water's edge and offer walking and picnic areas as well as boat and kayak launches (**Figure 20; Photographs 23, 24, 25, and 26**).

At present, the majority of the study area is covered with paved parking lots which serve both park facilities. David Craig Park, located south of the bridge is predominantly comprised of a paved parking area. Adjacent to the parking lot, towards the water's edge, are picnic facilities and an observation area. Based on a review of the Sanborn maps from the late nineteenth and early twentieth centuries, these landforms appear to be constructed of fill soils which were most likely placed during the construction of the nineteenth century PW&B railroad bridge. A portion of one of the abutments is still visible within the park. Although the landform on which the David Craig Park is situated is man-made, there may be the potential for these fill deposits to contain intact cultural deposits, specifically related to the earlier PW&B bridge structure or other attendant historic railroad facilities (**Figures 14, 15, 17, and 19; Photographs 23, 24, and 25**).

Jean S. Roberts Memorial Park, located to the north of the current Susquehanna River Bridge, contains a small grassy strip of land located between the parking facilities and the river's edge (**Photograph 26**). Based on a review of the Sanborn maps from the late nineteenth and early twentieth centuries, these landforms appear to be constructed of fill soils designed to either stabilize or add land area to the Havre de Grace waterfront. Similarly, despite the presence of these fill soils, given their age, there may be potential for these artificial landforms to contain cultural deposits associated with the numerous warehouses, coal storage wharves, or other industrial operations which characterized the waterfront area during the latter half of the nineteenth or early twentieth centuries (**Figures 14, 15, 17, and 19**).

Taken as a whole, this area may contain structural remains or trash deposits associated with the industrial waterfront or the foundation remnants of the former PW&B rail alignment. Both the Jean S. Roberts Memorial Park and the David Craig Park should be subjected to systematic subsurface survey.



Photograph 23: View of David Craig Park (Study Area 3), facing east-northeast. Note PW&B abutment in foreground.



Photograph 24: General view of Havre de Grace waterfront at the rear of the current American Legion building, facing southeast.



Photograph 25: General view of built landscape along the Havre de Grace waterfront, facing south.



Photograph 26. General view of Jean S. Roberts Memorial Park (Study Area 3), facing east-northeast.

6.4 Study Area 4: Perryville Waterfront

Study Area 4 is bounded on the west by the Susquehanna River, on the east by Front Street and Avenue D, and on the north and south by the current limits of the archeological APE (**Figure 20; Photographs 27, 28, 29, 30, 31, and 32**).

On the north side of the rail line, the primary feature of the study area is an extant building known as Rodgers Tavern or Stevenson's Tavern. Constructed during the mid-eighteenth century, [REDACTED] (**Figures 11B and 16A**). Limited Phase I and II excavations have been conducted at the site (MHT files; Hopkins and Persson 2005). The archeological component of Rodgers Tavern, 18CE15, is depicted on MHT mapping as being located on the south side of Broad Street [REDACTED]. Phase IB archeological survey is recommended for this area if it is to be impacted by the proposed project in order to verify the current location of 18CE15 as well as to identify if there are additional unrecorded cultural deposits associated with Rodgers Tavern in the general vicinity (**Figure 20; Photographs 27, 28, and 29**).

South of the Northeast Corridor rail line, Study Area 4 is primarily an open, grassy area. The majority of this area is owned by the Perry Point VA Medical Center. A large electrical substation, located just south of the rail corridor and approximately 700 feet (213 meters) from the edge of the river also dominates the Study Area 4 landscape (**Photographs 30, 31, and 32**).

With respect to archeological potential, a large portion of Study Area 4 located to the south of the rail corridor has been previously surveyed at the Phase I and II level as a part of the John Milner Associates' (JMA) 1989 investigation of the VA Medical Center facility at Perry Point (**Figure 20**). These survey efforts were successful in identifying and evaluating one archeological resource, 18CE258, which lies within the bounds of Study Area 4 (**Figure 13**). Identified as the remains of a nineteenth century domestic site, 18CE258 was subjected to Phase I and II testing. Site 18CE258 was determined not eligible for the NRHP following the MHT review of JMA's technical report (Stevens et al. 1989; DOE 9/18/2009). While the 1989 survey was rather comprehensive in its coverage, portions of Study Area 4 within the current APE were not subjected to archaeological survey. JMA investigators appear to have not tested a strip of land extending from the western edge of the electrical substation lot to the river's edge as well as an area east of the substation. Though the strip of land adjacent to the river was most likely located within the corridor of the nineteenth century PW&B rail line, as one of the stone abutments for the bridge is still visible on the surface a short distance to the west of the substation, both locations have the potential to contain intact historic or pre-contact deposits. Phase IB survey is recommended for these portions of the study area which were not subjected to previous archeological identification efforts (**Figure 20**).



Photograph 27: Representative view of northern portion of Study Area 4 with Rodgers Tavern at left, facing east.



Photograph 28: Representative view of northern portion of Study Area 4 south of Broad Street, facing southwest. Note Rodgers Tavern in the background.



Photograph 29: Representative view of northern portion of Study Area 4 south of Broad Street, facing northeast.



Photograph 30: General view of southern portion of Study Area 4 west of Avenue A, facing west; note area not tested as part of previous archaeological survey.



Photograph 31: View of southern portion of Study Area 4 with PW&B abutment, facing east.



Photograph 32: Representative view of Study Area 4 south of Amtrak corridor, facing west-southwest. Note substation in background.

6.5 Study Area 5: Perry Point VA Medical Center and Perryville MARC Station

Study Area 5 is bounded on the west by the eastern edge of Study Area 4, on the east by Firestone Road where the archeological APE returns to being located entirely within the existing Amtrak corridor, and on the north and south by the current limits of the archeological APE as shown on project plans (**Figure 20**). Similar to Study Area 4, south of the Northeast Corridor rail line, Study Area 5 is primarily an open, grassy area interspersed with wooded lots that is owned by the Perry Point VA Medical Center (**Photographs 33, 34, and 35**).

As with Study Area 4, the overwhelming majority of Study Area 5 located to the south of the rail corridor has been previously surveyed at the Phase I and II level during JMA's 1989 investigation of the VA Medical Center facility at Perry Point (**Figure 20**). These survey efforts were successful in identifying one archeological resource, 18CE255, to the south of the limits of Study Area 5 (**Figure 13**). Identified as the remains of a pre-contact lithic scatter of undetermined age, 18CE255 was recommended not eligible for the NRHP. Given the previous comprehensive archeological investigation and extensive areas of disturbance associated with the rail line facilities and the Perryville wastewater treatment plant, no additional archaeological investigations are recommended for that portion of Study Area 5 located south of the existing Northeast Corridor rail line.

On the north side of the rail line, the archeological APE is dominated by the intersection of the Northeast Corridor with the Norfolk Southern Port Road spur line. Much of this area has been previously disturbed due to the construction of the railroad transfer point and its associated parking lots, supply yards, and other support facilities. Located just to the west of this railroad intersection, a group of single and multi-family residences present along the southern edge of the Broad Street corridor. Each of these structures exhibits a small yard area which is located directly adjacent to the rail corridor. These residences and their associated yard areas are depicted on historic Sanborn mapping (**Figures 16 and 18; Photograph 36**). Though no soil probes were placed within these private lots, it is likely that intact yard features or other cultural deposits may still exist within these areas.

In addition, areas immediately north of and adjacent to Study Area 5, north of the rail line and east of the rail line intersection, have been previously surveyed at the Phase I and II level as a part of the recent URS archaeological survey for the proposed Maryland Area Regional Commuter (MARC) maintenance and storage facility (Koziarski and Seibel 2014). Six archaeological sites were identified within the MARC project limits. One site, 18CE383, the archeological component of the extant southern farmstead affiliated with the Woodlands Farm Historic District (MIHP No. CE-145), is eligible for inclusion in the NRHP under Criterion D. Though the MARC project area is located immediately adjacent to the current Susquehanna River Rail Bridge APE, these two project boundaries neither overlap nor intersect. Pending any revision to the current APE limits, NRHP eligible site 18CE383 will not be impacted by the current project (**Figures 13 and 20**).

Within Study Area 5, systematic archeological survey is recommended within the vicinity of the single and multi-family residences identified adjacent to Broad Street.



Photograph 33: Representative view of Study Area 5 south of Amtrak corridor, facing northeast. Note area tested as part of previous archaeological survey.



Photograph 34: Representative view of eastern portion of Study Area 5, Amtrak property boundary at right. View facing west-southwest.



Photograph 35: General view of disturbed Amtrak ROW within Study Area 5, facing southwest. Note photo taken at the intersection of access road and Avenue G.



Photograph 36: General view of houses located on the south side of Broad St. within Study Area 5, facing northeast.

7.0 PROJECT SUMMARY AND RECOMMENDATIONS

7.1 Research Summary

In March 2014, McCormick Taylor conducted a Phase IA archeological assessment on behalf of Amtrak in support of an Environmental Assessment (EA) for the proposed Susquehanna River Rail Bridge project. The existing Susquehanna River Bridge is located on Amtrak's Northeast Corridor (NEC) at Milepost 60 between the City of Havre de Grace in Harford County, Maryland and the Town of Perryville in Cecil County, Maryland (*Figure 1*). The bridge itself is roughly 0.75 miles (1.2 kilometers) in length and is the longest bridge with a movable span on the NEC.

This archeological assessment was comprised of documentary and environmental research, including an archeological site file review and review of comparable sites, visual observations of the existing conditions, and limited soil assessments within select portions of the APE. At the conclusion of this research, it was possible to generate a broad understanding of the developmental history and archeological sensitivity of the APE.

Review of historical atlases and maps revealed two distinct tracks of settlement and development for the Havre de Grace and Perryville sides of Susquehanna River. By the eighteenth century, Havre de Grace had taken its place as an established point of trade and commerce within the upper Chesapeake Bay. Despite this early settlement, however, historic maps revealed that the established street grid pattern has remained rather unchanged since the nineteenth century. This continuity of settlement has the potential to preserve portions of the archeological record in contrast to other more densely settled and urbanized areas where large scale projects have the potential to completely erase all vestiges of subsurface cultural horizons and previous historic occupations. In contrast, the Perryville side of the river, at least for the first several decades of the historic period, was focused on more agrarian pursuits as opposed to the busy commercial and industrial waterfront that developed across the river in Havre de Grace. Following the purchase of the Perry Point property by the United States government, the landform was used as a munition manufacturing facility which evolved into a hospital and medical research facility which still exists to the present day. Even with this history of changing uses and functions, the JMA survey proved that a diverse range of archeological resources still survive.

Placed against this background of industry, commerce, and domestic settlement, potential historical resources inside the project APE may include private residences, yard-related features, or even surviving features from the earlier PW&B rail line. Insurance maps depict the evolving nineteenth and twentieth century neighborhoods that were contained within the Havre de Grace portion of the archeological APE. If intact archeological deposits associated with these occupations were found, in addition to the houses themselves, potential feature types could include outbuildings, privies, cisterns, and sheet refuse (middens).

7.2 Project Recommendations

With this broad understanding in place, the following specific recommendations have been made for the project. In addition to the narrative descriptions provided below, these recommendations are also summarized in *Table 4*. Detailed maps depicting the specific limits of the study areas are included within *Figure 20*. These recommendations are offered in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended.

Study Area 1

Based upon the results of the background research and the field inspection, there is very little potential for archeological features or deposits to survive within this portion of the project APE. Soil testing indicated an overall lack of intact natural soil stratigraphy resulting from the construction of Havre de Grace school system's athletic field complex. Given the large amount of grading and landscape modification that has occurred in this area, there is little potential for intact cultural deposits within this area and no additional archeological survey is recommended for Study Area 1.

Study Area 2

Study Area 2 is dominated by the raised earthen berm that carries the Northeast Corridor rail line through the town of Havre de Grace. A series of stone abutments and retaining walls serve as the support system for this berm, extending several feet to either side of the rail line. A series of soil probes located between the edge of these berms and Warren Street on the south side of the existing rail line confirmed heavy soil disturbance and a lack of intact natural soils. These disturbances may be attributed to not only construction activities associated with the current Northeast Corridor rail line, but also the earlier nineteenth/early twentieth century PW&B rail line which ran immediately to the south of the current railroad alignment, approximately following the modern day course of Warren Street.

Despite these disturbances, however, there are isolated areas within Study Area 2 that could potentially contain intact archeological deposits.

A review of historic mapping indicates that the Havre de Grace street grid pattern within this portion of the project remains mostly intact from a period dating back to the nineteenth century. While the building arrangement on each of these city blocks has changed and evolved over time, there is a high probability that portions of these house lots may contain intact cultural deposits relating to building/structural remains or yard features such as outbuildings, trash pits, or privies. In addition, areas immediately adjacent to the location of the former Havre de Grace Train Station, found on both the north and south sides of the tracks.

Given these findings, once a design alternative is selected, systematic Phase IB archeological survey would be recommended for all areas of proposed ground disturbance in the lot areas located south of Warren Street and along Otsego Street, as well as in the vicinity of the former Havre de Grace Train Station.

Study Area 3

Study Area 3 consists of those portions of the archeological APE that are located to the north and south of the existing rail corridor along the Havre de Grace waterfront. The entirety of this study area is located within the bounds of two city park facilities, the Jean S. Roberts Memorial Park and the David Craig Park.

At present, the majority of the Study Area 3 is comprised of paved parking lots which serve both park facilities. Jean S. Roberts Memorial Park, located to the north of the current Susquehanna River Bridge, contains a small grassy strip of land located between the parking facilities and the river's edge. Sanborn maps from the late nineteenth and early twentieth centuries, indicate that landforms north of the existing railroad corridor appear to have been constructed of fill soils designed to either stabilize or add land area to the Havre de Grace waterfront. Despite the presence of these fill soils, given their age, there may be potential for these artificial landforms to contain cultural deposits from the latter half of the nineteenth or early twentieth centuries.

Similarly, the David Craig Park, located south of the bridge is predominantly comprised of a paved parking area. Adjacent to the parking lot, towards the water's edge, are picnic facilities and an observation area. Like the Jean S. Roberts Memorial Park area, much of the landforms south of the existing railroad corridor are comprised of fill soils which were most likely placed during the construction of the nineteenth century PW&B railroad bridge. A portion of one of the abutments is still visible within the park. Although the landforms upon which the Jean S. Roberts Memorial Park and David Craig Park are situated are man-made, there may be the potential for these fill deposits to contain intact cultural deposits, especially ones related to the earlier PW&B bridge structure and other attendant historic railroad facilities. Once a design alternative is selected, systematic Phase IB archeological survey would be recommended for all areas of project-related ground disturbance within the Jean Roberts and David Craig Parks.

Study Area 4

Study Area 4 is located along the eastern shore of the Susquehanna River, just south of Perryville. Several factors contribute to the limited archeological potential within Study Area 4. These factors include prior disturbances from the construction of the Northeast Corridor rail line and electrical substation as well as previous archeological survey efforts, specifically the 1989 JMA survey of the Perry Point VA Medical Center property (Stevens et al. 1989).

On the south side of the Northeast Corridor, though the majority of Study Area 4 was subjected to archeological survey by JMA, a strip of land extending from the western edge of the electrical substation lot to the river's edge does not appear to have been included within their survey limits. This strip of land was mostly likely located within the corridor of the nineteenth century PW&B rail line as one of the stone abutments for the bridge is still visible on the surface a short distance to the west of the substation. In addition, it should be noted that within the current limits of Study Area 4, the JMA survey did identify Site 18CE258, the archeological remnant of a nineteenth century domestic site. Following the completion of the Phase II survey conducted by JMA, the site was recommended not eligible for the NRHP; MHT concurred with this recommendation

(DOE 3/10/1989). Given this determination, no additional work is recommended for this resource.

On the north side of the rail line, multiple areas which have the potential to contain archeological deposits are focused around the eighteenth century Rodger's Tavern/Stevenson's Tavern [REDACTED]. The archeological component of Rodgers Tavern, 18CE15, is depicted on MHT mapping as being located on the south side of Broad Street [REDACTED]. Given the significance of this resource and the lack of systematic archeological survey in this area, Phase IB investigations are recommended for all areas of ground disturbance associated with the project within this portion of Study Area 4. These investigations may be helpful in verifying the current extent of 18CE15 as well as to identify if there are additional unrecorded cultural deposits associated with Rodgers Tavern in the general vicinity.

Study Area 5

Archeological potential within Study Area 5 is limited to areas for which there is no evidence of prior disturbance from railroad construction and have not yet been subjected to archaeological survey. As with Study Area 4, the overwhelming majority of Study Area 5 located to the south of the Northeast Corridor rail line has been previously surveyed as part of JMA's 1989 investigation of the VA Medical Center facility at Perry Point. No archaeological sites were identified within the current APE. Given the previous comprehensive archeological investigation and extensive areas of disturbance associated with the rail line facilities and the Perryville wastewater treatment plant, no additional archaeological investigations are recommended for that portion of Study Area 5 located south of the existing Northeast Corridor rail line.

On the north side of the rail line, much of this area has been previously disturbed by to the construction of the intersection of the Northeast Corridor with the Norfolk Southern Port Road spur line and its associated parking lots, supply yards, and other support facilities. However, west of this railroad intersection, a group of nineteenth and early twentieth century single and multi-family residences are present along the southern edge of Broad Street. Each of these structures exhibits a small yard area which is located directly adjacent to the rail corridor. These areas have the potential to contain intact yard features such as wells, privies, trash middens or other cultural deposits. If this area is to be impacted by the proposed project, systematic Phase IB archeological survey is recommended.

Underwater Resources

In addition to the terrestrial portions of the APE, additional consideration should be given to that portion of the APE contained within the Susquehanna River waterway. Past archival research efforts and remote sensing surveys have indicated the potential for submerged historic shipwrecks or other vessels as well as potential structural remains associated with the evolution of the Havre de Grace waterfront (Thompson 2000; Bilicki 2003). These surveys have resulted in the identification of several targets that are located within the archeological APE for the project.

According to MHT's Quadrangle Files for Havre de Grace, six resources have been identified within the archaeological APE, ID#s 2, 3, 7, 10, 18, and 19 (**Figures 13 and 20; Table 3**). ID#2 is the approximate location of the first railroad bridge across Susquehanna, identified by the existing PW&B railroad bridge pilings. ID# 3 is the approximate location of a nineteenth century ferry across the Susquehanna River as identified on historic mapping (**Figure 8**). ID#7 is the location of the historic Havre de Grace waterfront. ID#10 is the approximate location of a coal wharf. ID#s 18 and 19 represent the approximate locations of submerged anomalies which were recorded during the 2002 Lower Susquehanna River survey by MMAP. Quad File #18 is located just south of the existing Susquehanna River Bridge, [REDACTED]. Quad File #19 is marked on MHT mapping as running the entire length of the existing Amtrak railroad bridge structure. No additional information is given for these resources.

In addition to the MHT Quad Files, one previously identified archeological site, 18HE266, is located within the Susquehanna River within the vicinity APE. Located to the north of the existing bridge structure [REDACTED], 18HE266 has been identified as the wreckage from a twentieth century barge. This resource has never been formally evaluated for eligibility to the NRHP (**Figures 13 and 20; Table 2**).

Given the previous remote sensing surveys in the lower Susquehanna River vicinity, no additional identification (Phase I) level survey is recommended for the APE. However, as the project planning process moves forward, if any of the resources discussed above are to be impacted by the construction of the new bridge structure, additional underwater archeological studies focusing specifically on these identified targets are recommended in order to determine their condition, integrity, and eligibility for the NRHP. The location of resources identified within the vicinity of the APE, including MHT Quad Files #9 and #11, two historic coal wharfs, and site 18HA266, a submerged barge, should be relocated in order to reconfirm their boundaries and verify their locations outside of the APE (**Figures 13 and 20; Table 2 and 3**). Submerged cultural resources are subject to the natural effects of the environment. In particular, natural river phenomenon are known to have pushed sites out of the main channels and closer to shore (Bilicki 2003:44).

7.3 Conclusions

The goal of this project was to assess the Area of Potential Effect (APE) for the Amtrak Susquehanna River Bridge Replacement/Rehabilitation Project in Harford and Cecil Counties, Maryland in regard to its overall level of disturbance and potential to contain intact archeological resources. This goal was achieved through a two-fold process: 1) a thorough review of historical documentation to determine the types and locations of buildings, sites, and structures that were once present within the APE and 2) a program of field observation and limited subsurface investigation to determine the integrity of the soil deposits within the APE and if conditions are sufficient for the preservation of cultural horizons.

Table 4. Project Summary and Recommendations	
Study Area	Survey Recommendations/Key Issues
1: Havre de Grace Schools Athletic Fields	<p>No potential for pre-contact resources</p> <p>No additional survey recommended due to extensive disturbance from athletic field construction</p>
2: Town of Havre de Grace and Warren Street Vicinity	<p>Additional survey recommended for the following areas:</p> <ul style="list-style-type: none"> • Vicinity of old Havre de Grace train station between Adams and Juniata Street • Residential yard areas south of Warren Street • Residential yard areas in the vicinity of Otsego Street and North Freedom Lane intersection
3: Havre de Grace Waterfront	<p>Additional survey recommended for the following areas:</p> <ul style="list-style-type: none"> • Jean S. Roberts Memorial Park • David Craig Park
4: Perryville Waterfront	<p>Additional survey recommended for the following areas:</p> <ul style="list-style-type: none"> • Strip of land located between electrical substation and eastern shore of river (see map) • Vicinity of Rodgers Tavern (18CE15) <p>No additional work recommended for 18CE258</p>
5: Perry Point VA Medical Center and Perryville MARC Station	<p>Additional survey recommended for the following areas:</p> <ul style="list-style-type: none"> • Residential yard areas south of Broad Street (see map)
Underwater Resources	<p>If impacted by project, additional underwater survey recommended for:</p> <p>Quad Files #2, 3, 7, 10, 18, and 19 If potentially impacted by project, verify the location of resources outside of the APE:</p> <ul style="list-style-type: none"> • Quad File #11 and site 18HE266

The results of these two efforts have been used in this document to explain what types of archeological resources may be found within the APE, and to identify which sections of the APE possess the best potential to contain intact resources. The ability to identify these resources, however, is only part of the cultural resource regulatory framework that guides this portion of the Amtrak Susquehanna River Bridge Replacement/Rehabilitation Project. Once identified, researchers should also provide a preliminary assessment of any given site's condition and integrity in order to evaluate the resource's overall significance and potential to be nominated to the National Register of Historic Places (NRHP).

Historic resources, whether they are buildings, sites, structures, districts, or objects, are evaluated with reference to the four criteria established by the National Park Service. Historical resources that possess integrity of location, setting, design, material, workmanship, feeling, or association must be associated with at least one of the following four criteria in order to be considered for inclusion on the NRHP:

- Criterion A - Resources that are associated with events that have made a significant contribution to the broad patterns of our history; or
- Criterion B – Are associated with the lives of persons significant in our past; or
- Criterion C - That embody distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- Criterion D - That have yielded, or may be likely to yield, information important in prehistory or history (NPS 1990).

Most often, archeological resources are best associated with Criterion D, the potential to yield significant information in regard to the region's prehistory or history. In these cases, an archeological site must possess a configuration of artifacts, soil strata, structural remains, or other cultural features that make it possible to test a hypothesis or answer a specific set of research questions.

In order to provide a framework for evaluating any resources that may be identified during the archeological investigations for the Susquehanna River Bridge Replacement/Rehabilitation Project, the following set of research topics and questions is provided.

Market Participation

Analysis of the ceramic assemblages generated from the excavations of nineteenth century working-class neighborhoods, in Washington, D.C. and New York City for example, have overturned some long-held opinions about the people that inhabited these neighborhoods and their participation in the local economy and society. Due to the close proximity of large market centers, ceramic assemblages reveal that a wide variety of vessel forms and types was available to all classes alike. Although the index values of the ceramics from working-class neighborhoods is on the low end as compared with other New York and Washington, D.C., neighborhoods, the overall value is equal to that of the middle class that lived in rural areas, away from the marketplace (Brighton 2001: 27-28).

Contemporary writers often have depicted the residents of these working-class urban neighborhoods as uneducated at best and, at worst, corrupt and devoid of sensible values. The ceramic assemblages collected from these urban sites seem to paint another picture. It demonstrates that these families placed enough value on projecting an image of domestic beauty and Victorian values that at least a portion of their limited income was spent on these items (Brighton 2001:28).

With respect to the range of possible site types located within the APE, similar topics may be addressed:

- In terms of simple market availability, is the range of ceramic types from the assemblages of Havre de Grace-area sites similar to those found on contemporaneous sites in some of the larger East Coast market centers?
- Does the arrival of the canal or railroad to Havre de Grace change this availability of materials to the families that inhabited these sites?
- Does the ceramic assemblage reflect the makeup of the family household, their food preferences, and/or their socio-economic status?
- How do these assemblages compare with those excavated from other domestic sites, urban and rural, in the Havre de Grace vicinity? How do the families that once lived within the APE compare socio-economically with those who lived in other areas of the region?

Diet and Foodways

As with ceramic vessel fragments, the analysis of faunal remains from urban excavations have shed meaningful light on the lives of individuals and families in working-class neighborhoods. The results of the analysis of faunal remains recovered from kitchen middens and other refuse deposits show a very different reality than the picture of urban, working-class life painted by contemporary writers and columnists. The myth of living a valueless beggar's existence gives way to the reality of families choosing between various cuts of meat or fish, in a sometimes very limited marketplace, while at the same time trying to maintain the specific dietary aspects of their particular ethnic or religious background (Milne and Crabtree 2001:31).

Kitchen deposits dating to the early- and mid-nineteenth century in New York City seem to reflect a somewhat limited market where the predominant items were poor cuts of meat from locally raised pigs and small, locally available fish. As time progressed and food preservation, technology, and transportation networks improved, markets were able to offer a wider range of items in terms of quality and selection. This was reflected in later kitchen and refuse deposits from the New York City excavations. In addition, the majority of Jewish residents within these neighborhoods appeared to have tried their best to maintain kosher households, despite the limitations of the local food markets (Milne and Crabtree 2001:43-44).

With respect to the APE, these questions may be asked of the data:

- Do the faunal assemblages reveal different personal taste preferences amongst the families that lived contemporaneously and do they reflect differing socio-economic status?
- How do the remains reflect availability of foodstuffs in the marketplace of late nineteenth/early twentieth century Havre de Grace? How does the diet of the families that once inhabited these sites compare with similar working-class neighborhoods in other urban centers?
- Is there any evidence for a particular ethnicity or religious belief system amongst the families as it is reflected in the faunal assemblage?

Health and Medicine

During the nineteenth century, city dwellers had to cope with increasingly crowded and unsanitary living conditions, as well as the effects of often difficult and debilitating jobs. For wealthier residents, these conditions could be lessened by their ability to afford a larger, less-crowded home, a healthy diet, the care of a doctor, or even a change of residence during periods of cold or harsh weather. For the poor and middle class, often medicine was the only way to combat sickness, physical pain, or the effects of a limited diet. Medicinal bottles, as well as plant remains that may have been used as part of an herbal remedy, have been especially helpful in shedding light on the overall health and attitudes towards health and sickness that were held by the nineteenth century residents of urban neighborhoods (Bonasera and Raymer 2001:49).

- Where did the former residents of the project area purchase the majority of their medicines—a doctor, local apothecary, street vendors, or did they rely primarily on home or herbal remedies?
- What common physical ailments afflicted the families that once lived in the project area?
- Are there any differences in the treatment of sickness due to the family's ethnicity or religious background?

Settlement Patterns and Subsistence

Within the Havre de Grace portion of the project, intact pre-contact contexts would have to be buried deeply to have avoided disturbance to date. In the case of the current project area, a major river terrace located near several confluences would have been extremely attractive to pre-contact peoples, as demonstrated by the numerous previously recorded pre-contact sites within the MHT database. The potential survival of these original ground surface sites is dubious given the amount and type of modern disturbances in the APE. As discussed earlier, given the overall lack of intense development within the Perryville portion of the project area, there does exist a higher potential for the survival of intact pre-contact deposits.

Additional survey efforts, conducted as a result of this archeological assessment, may result in the better characterization of the pre-contact landscape, its formation processes, and micro environments. Although many previous survey efforts have only been successful in identifying non-diagnostic lithic scatters and short-term occupation procurement camps, additional field

investigation may yield information pertaining to how specific landforms within the APE were utilized throughout the pre-contact period as well as within the lower Susquehanna River region in general.

Site Structure

Finally, additional site investigations should strive to explain the structure and evolution of the entirety of any identified house lot. Through additional machine and hand excavation, the field investigations should seek to identify additional cultural features, such as cisterns, privies, kitchen middens or gardens, outbuildings, former additions to the primary structure, or even an earlier primary dwelling.

- Based upon the types of features recorded, what sorts of occupational activities or functions were being conducted by family members in the yard areas?
- Archival research has shown that some of these families were skilled laborers and tradesmen. Is there any evidence that these individuals were working out of their homes as opposed to a separate workplace?

Unanticipated Discoveries Plan

No archeological planning document, no matter how well conceived, can always unfailingly predict the location of all archeological resources within a given project area. This is especially true within the environments contained within the current project area where a series of localized events may have coalesced in the preservation of a resource within an unlikely or unexpected setting.

It is with this thought in mind that the final recommendation for this technical report is for project designers, engineers, and researchers, in consultation with the Maryland Historical Trust, to establish a plan for dealing with unanticipated archeological discoveries for the Susquehanna River Bridge Replacement/Rehabilitation Project. At minimum, the plan should include:

- A review of the range of site or resource types likely to be found within the project area;
- A work plan and/or framework for evaluating any resources that are identified during the construction process;
- Protocols for the notification of appropriate project personnel and timelines for fieldwork and reporting, and finally;
- Identification of an expedited agency and MHT review process in order to keep construction delays at a minimum.

8.0 REFERENCES CITED

Advisory Council for Historic Preservation

2001 36 CFR Part 800 Protection of Historic and Cultural Properties. Federal Register, Washington, D.C.

Bates, B.

2006 *Havre de Grace*. Arcadia Publishing, Charleston, South Carolina.

Beckermann, I.

1993 *Maryland Department of Transportation State Highway Administration Yearbook of Archeology*. Number 1. Maryland Department of Transportation State Highway Administration. Baltimore, Maryland.

Bilicki, S.R.

2003 *Phase I Underwater Survey on the Susquehanna River in Cecil and Harford Counties, Maryland*. Report on file at the Maryland Historical Trust, Crownsville, MD.

Bonasera, M. C. and L. Raymer

2001 Good for What Ails You: Medicinal Use at Five Points. *Historical Archaeology*, 35(3): 49-64.

Bonfiglio, A. and J. H. Cresson

1982 Geomorphology and Pinelands Prehistory: A Model into Early Aboriginal Land Use. In *History, Culture, and Archeology of the Pine Barrens: Essay from the Third Pine Barrens Conference*, edited by John W. Sinton. Stockton State College Center for Environmental Research. Pomona, New Jersey.

Brighton, S. A.

2001 Prices that Suit the Times: Shopping for Ceramics at The Five Points. *Historical Archaeology*, 35(3): 16-30.

Callahan, E.

1979 The Basics of Biface Knapping in the Eastern Fluted Point Tradition. *Archeology of Eastern North America* 7:1-180.

Catts, W. P., J. F. Custer, and A. Hawley

1994 *A Cultural Resources Reconnaissance Planning Study of the Proposed Beach Access Corridors, Sussex County, Delaware*. Delaware Department of Transportation Archeology Series No. 94. Dover, Delaware.

Catts, W. P., J. Hodny, and J. F. Custer

1989 *Phase I and II Archeological Investigations of Old Baltimore Pike from Four Seasons Parkway to the Christiana Bypass, New Castle County, Delaware*. Delaware Department of Transportation Archeology Series No. 71. Dover, Delaware.

Cinadr, T. J. and R. A. Genheimer

1983 Queensgate II: An Archaeological View of Nineteenth Century Privies. Proceedings of the Symposium on Ohio Valley Urban and Historic Archaeology, 1:72-83.

Coe, J.

1964 Formative Cultures of the Carolina Piedmont. *Transactions of the American Philosophical Society* 54(5). Philadelphia, Pennsylvania.

Curry, D.C.

1977 *Archeological Reconnaissance of Maryland Route 7A, Harford County, Maryland*. Report submitted to the Maryland State Highway Administration. Report on file at the Maryland Historical Trust, Crownsville, MD.

Custer, J. F.

1983 *A Management Plan for the Archeological Resources of the Upper Delmarva Region of Maryland*. Maryland Historical Trust Manuscript Series No. 31. Maryland Historical Trust. Crownsville, Maryland.

1984 *Delaware Pre-contact Archeology, An Ecological Approach*. Associated University Presses, Inc. Cranbury, New Jersey.

1986 *A Management Plan for Delaware's Pre-contact Cultural Resources*. University of Delaware Center for Archeological Research, Monograph 2. Newark, Delaware.

1989 *Pre-contact Cultures of the Delmarva Peninsula: An Archeological Study*. Associated University Presses, Inc. Cranbury, New Jersey.

1994 *Stability, Storage, and Cultural Change in Pre-contact Delaware: The Woodland I Period (3000 B.C.- A.D. 1000)*. Prepared for the Delaware State Historic Preservation Office, Division of Historic and Cultural Affairs. Dover, Delaware.

1996 *Pre-contact Cultures of Eastern Pennsylvania*. Pennsylvania Historical and Museum Commission, Anthropological Series No. 7. Harrisburg, Pennsylvania.

2001 *Classification Guide for Arrowheads and Spearpoints of Eastern Pennsylvania and the Central Middle Atlantic*. Pennsylvania Historical and Museum Commission. Harrisburg, Pennsylvania.

Custer, J. F. and B. H. Silber

1994 *Final Archeological Investigations at the Snapp Pre-contact Site (7NC-G-101), State Route 1 Corridor, Chesapeake and Delaware Canal Section, New Castle County, Delaware*. Delaware Department of Transportation Archeology Series No. 122. Dover, Delaware.

Davidson, T. E.

1981 *A Cultural Resource Management Plan for the Lower Delmarva Region of Maryland*. Maryland Historical Trust Manuscript Series No. 2. Maryland Historical Trust. Crownsville, Maryland.

Dent, Jr., R. J.

1995 *Chesapeake Prehistory: Old Traditions, New Directions*. Plenum Press. New York, New York.

Ebright, C. A.

1989 *Phase II Archeological Investigation at the Denbigh Farm Site, Queen Anne's County, Maryland*. Manuscript on file at the Maryland Historical Trust. Crownsville, Maryland.

1994 Early Native American Prehistory on the Maryland Western Shore: Archeological Investigations at the Higgins Site. In *Maryland Department of Transportation State Highway Administration Yearbook of Archeology Number 3*. C. Hall and M. F. Barse, ed. Baltimore, Maryland.

Fiedel, S. J.

1999 *US 50 from MD 18 to MD 404, Queen Anne's County, Maryland*. Manuscript on file at the Maryland Historical Trust. Crownsville, Maryland.

Ford, T. L.

1976 Adena Sites on Chesapeake Bay. *Archeology of Eastern North America* 4:63-89.

Gardner, W.

1987 Comparison of Ridge and Valley, Blue Ridge, Piedmont, and Coastal Plain Archaic Period Site Distribution: An Idealized Transect (Preliminary Model). *Journal of Middle Atlantic Archeology* 3:49-80.

Gerstell, R.

1998 *American Shad in the Susquehanna River Basin: A Three-hundred Year History*. The Pennsylvania State University Press. University Park, Pennsylvania.

Hahn, T. S.

1988 *Removal, Study, and Drawings of the Lock Gates of the Outlet Lock of the Susquehanna & Tidewater Canal at Havre de Grace, Maryland*. Unpublished manuscript. Report on file at the Maryland Historical Trust, Crownsville, MD.

Hauducoeur, C.P.

1799 *A Map of the Head of Chesapeake Bay and Susquehanna River*. Library of Congress, Washington, D.C.

Hermann, A.

1673 *Virginia and Maryland as it is Planted and Inhabited This Present Year 1670*. The Huntingfield Map Collection, Maryland State Archives, Annapolis, MD.

Hopkins, Joseph W., III, and Ann S. Persson

2005 *Phase I Archeological Investigation of the Rodgers Tavern Site, Perryville, Cecil County, Maryland*. Joseph Hopkins Associates, Inc. Report on file at the Maryland Historical Trust, Crownsville, MD.

Kingsley, R., T. Benedict, and G. Katz

2006 *Phase I Archeological Identification Survey: US 301 at MD 304 Intersection Improvements, Queen Anne's County, Maryland*. John Milner Associates. Manuscript on file at the Maryland Historical Trust. Crownsville, Maryland.

Koziarski, R. and S. Seibel

2014 *Archaeological Survey and Evaluation of the Proposed Perryville MARC Maintenance Facility Location, Cecil County, Maryland*. URS Corporation. Manuscript on file at the Maryland Historical Trust. Crownsville, Maryland.

Lee, T. J. and C. N. Hagner

1856 *Chart of the Mouth of Susquehanna River and Head Waters of Chesapeake Bay, Maryland*. New York Public Library, Digital Collections.
<http://digitalcollections.nypl.org/>

Leedecker, C. H. and C. A. Holt

1991 Archaic Occupations at the Indian Creek V Site (18PR94), Prince George's County, Maryland. *Journal of Middle Atlantic Archeology* 7:67-90.

Lowery, D. L.

1989 The Paw Paw Cove Paleoindian Site Complex, Talbot County, Maryland. *Archeology of Eastern North America* 17:143-164.

1990 Recent Excavations at the Paw Paw Cove Site: A Maryland Coastal Plain Paleoindian Site. *Current Research in the Pleistocene* 7:29-30.

1992 *Archeological Survey of Kent Island*. Manuscript on file at the Maryland Historical Trust. Crownsville, Maryland.

1993 *Archeological Survey of the Chester River, Wye River, and the Prospect Bay Drainages*. Manuscript on file at the Maryland Historical Trust. Crownsville, Maryland.

1995a *Archeological Survey of Interior Queen Anne's County, Maryland*. Manuscript on file at the Maryland Historical Trust. Crownsville, Maryland.

1995b *A Supplementary Archeological Survey of Interior Queen Anne's County, Maryland*. Manuscript on file at the Maryland Historical Trust. Crownsville, Maryland.

Lowery, D. and J. F. Custer

1990 Crane Point: An Early Archaic site in Maryland. *Journal of Middle Atlantic Archeology* 6:75-120.

Marshall, S.

- 1982 Aboriginal Settlement in New Jersey During the Paleo-Indian Cultural Period: ca. 10,000 B.C. - 6000 B.C. In *New Jersey's Archeological Resources from the Paleo-Indian Period to the Present: A Review of Research Problems and Survey Priorities*, edited by Olga Chesler, pp. 10-51. New Jersey State Historic Preservation Office. Trenton, New Jersey.

Maryland Historical Trust (MHT)

- 1991 *Guidelines for Completing the Maryland Inventory of Historic Properties Form: Standing Structures and Non-Archeological Sites*. Maryland Historical Trust. Crownsville, Maryland.
- 1992 *Technical Update No. 1 of the Standards and Guidelines for Archeological Investigations in Maryland, Collections and Conservation Standards*. Maryland Historical Trust. Crownsville, Maryland.
- 2000 *Standards and Guidelines for Architectural and Historical Investigations in Maryland*. Maryland Historical Trust. Crownsville, Maryland.
- 2002 *General Guidelines for Compliance-Generated Determinations of Eligibility*. Maryland Historical Trust, Crownsville, Maryland.

McAvoy, J. M.

- 1992 *Nottoway River Survey Part-I Clovis Settlement Patterns*. Archeological Society of Virginia and Nottoway River Publications. Richmond, Virginia.

McCary, B. C.

- 1983 The Paleoindian in Virginia. *Quarterly Bulletin of the Archeological Society of Virginia* 38:43-70.

Mid-Atlantic Archaeological Research

- 1977 *Archaeological Investigations at the Susquehanna Museum of Havre de Grace, Maryland*. Report on file at the Maryland Historical Trust, Crownsville, MD.

Millis, H and R.D. Wall

- 2006 *Phase I Archeological Survey for Proposed Improvements to the Intersection of US 301 and MD 304, Queen Anne's County, Maryland*. Manuscript on file at the Maryland Historical Trust. Crownsville, Maryland.

Milne, C. and P. J. Crabtree

- 2001 Prostitutes, a Rabbi, and a Carpenter—Dinner at the Five Points in the 1830s. *Historical Archaeology*, 35(3): 31-48.

Munford, B. A.

- 1993 Phase II Cultural Resources Investigation of Site 18PR404, the Surratts Road Site, Prince George's County, Maryland. In *Maryland Department of Transportation State Highway Administration Yearbook of Archeology* Number 1. Ira Beckerman, ed. Baltimore, Maryland.

National Park Service (NPS)

- 1983 The Secretary of the Interior's Standards for Archaeology and Historic Preservation. Federal Register (Fed. Reg.) 44716-68.
- 1988 Guidelines for Federal Agency Responsibilities Under Section 110 of the National Historic Preservation Act. 53 Fed. Reg. 4727-46. Annotated and republished by ACHP as "The Section 106 Guidelines."
- 1990 National Register Bulletin: How to Apply the National Register Criteria for Evaluation. United States Department of the Interior, National Park Service, Philadelphia, PA
- 1992 The Secretary of the Interior's Standards and Guidelines for the Treatment of Historic Properties. Brochure, Preservation Assistance Division, Washington, D.C.
- 1998 The Secretary of the Interior's Standards and Guidelines for Federal Agency Historic Preservation Programs Under Section 110 of the National Historic Preservation Act. 63 Federal Register 20495-20508.

Noll, L.

- 2011 *Havre de Grace*. Arcadia Publishing. Charleston, South Carolina.

Orr, K. and McIntyre, W.

- 1994 *Preliminary Archeological Survey Excavations at The Lightkeeper's House and Property, Concord Point Lighthouse, Havre de Grace, Maryland, The John O' Neill House Site (18HA238)*. Report on file at the Maryland Historical Trust, Crownsville, MD.

Pogue, D. J. and M. A. Smolek

- 1985 *An Archeological Resource Management Plan for the Southern Maryland Region*. Maryland Historical Trust Manuscript Series No. 30. Maryland Historical Trust. Crownsville, Maryland.

Powler and Kelly

- 1907 *Bird's Eye View of Havre de Grace, Maryland*. Library of Congress, Washington, D.C.

Preston, D. J.

- 1983 *Talbot County: a History*. Tidewater Publishers. Centreville, Maryland.

Rappleye, L. and W. M. Gardner

1979 *Reconnaissance and Impact Area Assessment of the Great Dismal Swamp National Wildlife Refuge, City of Suffolk, Chesapeake and Nansemond Counties, Virginia*. U.S. Department of the Interior. Washington, D.C.

Ross, J. A., Child, K., and Williams, M.

2002 *Phase I Archeological Survey of the Perryville Connector Corridor, Cecil County, Maryland*. Report prepared by R. Christopher Goodwin & Associates, Inc. Report on file at the Maryland Historical Trust, Crownsville, MD.

Rubertone, P. E.

1982 *Urban Land Use and Artifact Deposition: An Archaeological Study of Change in Providence, Rhode Island*. In *Archaeology of Urban America, The Search for Pattern and Process*, edited by R. S. Dickens, Jr., pp. 117-141. Academic Press, New York.

Sanborn Insurance and Publishing Company

1886 Sanborn Fire Insurance Map of Havre de Grace, Maryland. Library of Congress, Washington, D.C.

1894 Sanborn Fire Insurance Map of Havre de Grace, Maryland. Library of Congress, Washington, D.C.

1899 Sanborn Fire Insurance Map of Havre de Grace, Maryland. Library of Congress, Washington, D.C.

1904 Sanborn Fire Insurance Map of Havre de Grace, Maryland. Library of Congress, Washington, D.C.

1904 Sanborn Fire Insurance Map of Perryville, Maryland. Library of Congress, Washington, D.C.

1910 Sanborn Fire Insurance Map of Havre de Grace, Maryland. Library of Congress, Washington, D.C.

1910 Sanborn Fire Insurance Map of Perryville, Maryland. Library of Congress, Washington, D.C.

1921 Sanborn Fire Insurance Map of Havre de Grace, Maryland. Library of Congress, Washington, D.C.

1923 Sanborn Fire Insurance Map of Perryville, Maryland. Library of Congress, Washington, D.C.

1930 Sanborn Fire Insurance Map of Havre de Grace, Maryland. Library of Congress, Washington, D.C.

Shaffer, G. D. and E. J. Cole

1994 *Standards and Guidelines for Archeological Investigations in Maryland*. Maryland Historical Trust Technical Report Number 2. Maryland Historical Trust. Crownsville, Maryland.

Shank, W. H.

1982 *Canals of the Lower Susquehanna*. Unpublished manuscript. Report on file at the Maryland Historical Trust, Crownsville, MD.

1988 *The History of the Susquehanna and Tidewater Canal*. Unpublished manuscript. Report on file at the Maryland Historical Trust, Crownsville, MD.

Singley, K.

1987 *Preservation Schemes for Canal Gates at the Lock House Museum, Susquehanna Museum of Havre de Grace, Inc.* Unpublished manuscript. Report on file at the Maryland Historical Trust, Crownsville, MD.

Smith, J.

1608/1612 *A Map of Virginia: With a Description of the Countrey, the Commodities, People, Government and Religion*. J. Barnes. Oxford, England.

Steponaitis, L. C.

1983 *An Archeological Study of the Patuxent Drainage, Volume I*. Maryland Historical Trust Manuscript Series No. 24. Maryland Historical Trust. Crownsville, Maryland.

Stevens, J. S., Cheek, C. D., and O'Bannon, P.W.

1989 *A Phase I and Phase II Archeological Investigation of the Veterans Administration Medical Center at Perry Point, Maryland*. Report prepared by John Milner Associates, Inc., West Chester, PA. Report on file at the Maryland Historical Trust, Crownsville, MD.

Stewart, R. M

1989 The Middle Archaic Period in the Great Valley of Maryland. *Maryland Archeology* 25(1):1-13.

1994 Rethinking Abbott Farm: Oral Tradition, Context, and Historic Perspective. *Bulletin of the Archeological Society of New Jersey*. Vol. 49.

Still, W.

1872 *The Underground Railroad: A Record of Facts, Authentic Narratives, Letters, &c.* Porter and Coates. Philadelphia, Pennsylvania.

Thompson, B.

2000 *A Phase I Survey for Submerged Archaeological Resources Within Maryland's Susquehanna Drainage Basin and Eastern Shore Coastal Plain Province*. Maryland Maritime Archeology Program File Report 005. Report on file at Maryland Historical Trust, Crownsville, MD.

United States Department of Agriculture, Natural Resources Conservation Service
2014 Electronic document, <http://websoilsurvey.sc.egov.usda.gov/default.aspx>

United States Department of the Interior

1983 Department of the Interior, Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines. U.S. Department of the Interior, Washington, D.C.

1991 How to Apply the National Register Criteria for Evaluation. National Register Bulletin 15. U.S. Department of the Interior, Interagency Resources Division, Washington D.C.

United States Department of the Interior, United States Geological Survey

1899 Havre de Grace, Maryland Topographic Quadrangle. Library of Congress, Washington, D.C.

Virta, A.

1998 *Prince George's County, A Pictorial History*. The Donning Company. Virginia Beach, Virginia.

Wall, R. D.

1990 *The Bifurcate Tradition in the Maryland Plateau Region*. Paper presented at the 1990 Middle Atlantic Archeological Conference. Ocean City, Maryland.

Wanser, J. C.

1982 *A Survey of Artifact Collections from Central Southern Maryland*. Maryland Historical Trust Manuscript Series No. 23. Maryland Historical Trust. Crownsville, Maryland.

Watson, S. C. and J. F. Custer

1990 *Phase III Data Recovery Excavations at the Caryatid Site (28-BU-276) and Eckert Farm Site (28-BU-115), Burlington County, New Jersey*. Prepared for New Jersey Department of Transportation. Trenton, New Jersey.

Weeks, C.

1996 *An Architectural History of Harford County, Maryland*. The Johns Hopkins University Press. Baltimore, Maryland.

Weslager, C. A.

1968 *Delaware's Buried Past* (Second Edition). Rutgers University Press. New Brunswick, New Jersey.

1983 *The Nanticoke Indians: Past and Present*. University of Delaware Press, Newark, Delaware.

Wesler, K. W., G. J. Fine, D. J. Progue, P. Sternheimer, A. F. Button, E. G. Furgurson, and A. H. Luckenback

1981 *Maryland Department of Transportation Archeological Resources Survey, Volume I: Eastern Shore*. Maryland Historical Trust Manuscript Series No. 5. Maryland Historical Trust. Crownsville, Maryland.

1981 *Maryland Department of Transportation Archeological Resources Survey, Volume III: Piedmont*. Maryland Historical Trust Manuscript Series No. 7. Maryland Historical Trust. Crownsville, Maryland.

Widmer, K.

1964 *The Geology and Geography of New Jersey*. D. Van Nostrand Company, Inc. Princeton, New Jersey.

Wise, C. L.

1973 *The Nassawango Creek Site: Summary Report*. Manuscript on file at the Maryland Historical Trust. Crownsville, Maryland.

Manuscript and File Sources Consulted

Maryland Historical Trust (MHT)

Internet Resources

www.historicaerials.com

www.mgs.dnr.gov

www.msa.md.gov/megafile/msa/speccol/sc2200/sc2221/000026/html/overview.html

www.nanticokeindians.org/history.cfm

www.sha.md.us/keepingcurrent/maintainRoadsBridges/OPPE/historicBridges/II-E_Rds.pdf

www.stmichaelsmd.org/about/history1.html

Analysis of Captain John Smith Chesapeake National Historic Trail Resources with Respect to the Susquehanna River Rail Bridge Project



Analysis of Captain John Smith Chesapeake National Historic Trail Resources with Respect to the Susquehanna River Rail Bridge Project

INTRODUCTION

The Federal Railroad Administration (FRA), in coordination with the Maryland Department of Transportation (MDOT) and the National Railroad Passenger Corporation (Amtrak) (collectively the Project Team), is performing preliminary engineering (PE) and environmental analysis, in accordance with the National Environmental Policy Act (NEPA), for alternatives to replace the Susquehanna River Rail Bridge between the City of Havre de Grace in Harford County, Maryland and the Town of Perryville in Cecil County, Maryland and provide continued rail connectivity along Amtrak’s Northeast Corridor (NEC). Currently, only this “PE/NEPA” effort has received funding; no funding has been identified for final design and construction of a new railroad bridge(s).

The Project Team is currently finalizing an Environmental Assessment (EA) pursuant to NEPA, which includes a coordinated process to comply with Section 106 of the National Historic Preservation Act. The Project Team prepared the following analysis to assess whether the portion of the Captain John Smith Chesapeake National Historic Trail (Trail) within the architectural (above-ground) and archaeological Areas of Potential Effects (APE) is eligible for inclusion in the National Register of Historic Places (NRHP) (see **Figure 1**).

FRA has selected a Preferred Alternative (Alternative 9A). The Preferred Alternative consists of construction of two new bridges and the removal of the existing bridge. One new bridge would allow train speeds up to 90 miles per hour (mph), while the other new bridge would allow train speeds up to 160 mph. The existing bridge would remain in service while the first new bridge is under construction to maintain operations along the NEC.

METHODOLOGY

This analysis is based on fieldwork and historic research conducted as part of the environmental analyses and cultural resources investigation for the PE/NEPA Project, as well as two National Park Service (NPS) planning documents—the *Captain John Smith Chesapeake National Historic Trail Final Comprehensive Management Plan (CMP) and Environmental Assessment*, February 2011; and the *Captain John Smith Chesapeake National Historic Trail Interpretive Plan*, 2010.

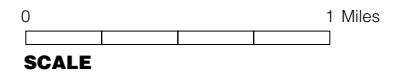
For the majority of the approximately six-mile length of the project corridor along the NEC, the boundary for the APE for architectural history runs parallel to the tracks approximately 600 feet to the north and south. In close proximity to the river, the APE boundary proceeds on a diagonal line to intersect with the river approximately one-quarter of a mile north and south of the project limits (see **Figure 1**).

As a first step in assessing whether the portion of the Trail within the APE meets the criteria for inclusion in the NRHP, FRA and MDOT reviewed the extent to which the Trail portion contains “high potential historic sites,” defined in Chapter 2.0 of the CMP as “those historic sites related



 Project Site Archaeological APE

 Architectural APE



to the route, or sites in close proximity thereto, which provide opportunity to interpret the historic significance of the Trail during the period of its major use. Criteria for consideration as high potential sites include: historic significance, presence of visible historic remnants, scenic quality, and relative freedom from intrusion” (CMP, 2011, p. 2-28).

As identified by the NPS, the categories of high potential historic sites are listed below along with their relevant criteria for determining if they are eligible to be considered “high potential historic sites.”

ANALYSIS

1. SIGNIFICANT VOYAGE STOPS

According to the CMP (CMP, 2011, p. 2-31 and p. 2-32), in order for a voyage stop to be designated a high potential historic site, it must meet all of the following criteria:

- Important historic and interpretive associations, relating to one of the following themes:
 - Smith’s explorations on behalf of the Virginia Company
 - Smith’s adventure and survival and his relationships with the Chesapeake Bay tribes; or
 - Smith’s writings and maps that established his significance and spread the news of North America’s abundant resources
- Scenic quality and relative freedom from intrusion. According to the CMP, “the voyage stop must have a setting that is generally free from intrusion by modern development and that offers visitors and opportunity to vicariously share the experience of John Smith and his crew at that site.”
- Public access, either at the site or within a distance of approximately three miles.

As depicted in Figures 2.2 and 2.7b of the CMP, there is one identified voyage stop within the Project’s APE. This voyage stop is located at Garrett Island, which lies beneath the Thomas J. Hatem Memorial Bridge carrying US 40 over the Susquehanna River. However, this site has not been categorized among the “Significant Voyage Stops that are High Potential Historic Sites” according to Figure 2.2 of the CMP. Although there is no explanation provided for that classification, it appears to be based on the site’s inability to meet the required criteria that it is free from modern intrusions. The presence of the existing Susquehanna River Rail Bridge, the Thomas J. Hatem Memorial Bridge, the City of Havre de Grace, the Town of Perryville, and other modern intrusions have significantly altered the setting of this voyage stop.

2. EVOCATIVE LANDSCAPES

As stated in the CMP (CMP, 2011, p. 2-8): “Evocative landscapes are places possessing a feeling that expresses the aesthetic or historic sense of a particular period of time. This feeling results from the presence of physical features that, taken together, convey a landscape’s historic character. Within the context of planning for managing the Captain John Smith Chesapeake National Historic Trail (NHT), evocative landscapes are areas along the trail where the natural setting of the Chesapeake Bay and its tributaries remains generally free from intrusion by modern development—where the landscape is composed of wetland and forest vegetation, providing habitat for terrestrial and aquatic wildlife, and affording an opportunity for trail visitors to vicariously share the experience of John Smith and his crew in the 17th century.”

The Susquehanna River is not listed in Table 2.2 of the CMP as one of the sites along the Voyage Routes that are highly evocative of the 17th Century. In the CMP, NPS has characterized

four classifications of evocative landscapes (based on their level of fragmentation by modern intrusion) to identify and assess evocative landscapes. These classifications include:

- Relatively intact landscapes
- Somewhat fragmented landscapes
- Extensively fragmented landscapes
- Very limited or absent landscapes

The Project team has conducted extensive field surveys of the APE, along with a comprehensive review of aerials, maps, and local planning documents. Both the Harford County and the Cecil County portions of the APE and vicinity are extensively fragmented landscapes. According to the 2013 NPS document, “*A Conservation Strategy for the Captain John Smith Chesapeake National Historic Trail*,” the classification of “extensively fragmented landscapes” applies to a wide range of conditions along the Trail. Extensively fragmented landscapes are within a “mixed setting of natural, agricultural, and developed areas occurring in a patch-like pattern” and include evocative woodland and wetland landscapes that are between 25 and 65 percent intact.

Both sides of the river have been developed with many modern intrusions, including but not limited to expansive residential, commercial, and industrial development, utility systems, and an extensive modern transportation system. Multiple roadway and rail bridges spanning the Susquehanna River are within the project’s APE and vicinity, and roadway traffic, freight rail traffic, intercity rail traffic, and local commuter rail traffic are all visible and audible. The Thomas J. Hatem Memorial Bridge and the Millard E. Tydings Memorial Bridge respectively carry the US Route 40 and Interstate 95 (I-95) highway networks through Perryville and Havre de Grace. Two operational railroad bridges cross the Susquehanna River within the architectural APE—the CSX Susquehanna River Rail Bridge (which will not be affected by the Proposed Project) and the existing Susquehanna River Rail Bridge, which is the subject of the current PE/NEPA effort.

Within the City of Havre de Grace, the waterfront area consists of approximately three and a half miles of shoreline and land uses including parks and recreational areas, marinas, historic buildings, businesses, and residential uses. The downtown business district falls south of the shoreline and waterfront – within the architectural APE containing commercial/retail shops, restaurants, financial institutions, and mixed-use residential/commercial properties.

The architectural APE north of the Susquehanna River includes the Town of Perryville and portions of Cecil County. Within this part of the architectural APE, waterfront areas along the Susquehanna River include the historic Rodgers Tavern, open space uses (e.g., Lower Ferry Park and Pier), residential uses, and institutional uses.

There are modern intrusions on the river itself including commercial boats, private recreational vessels, tugboats and quarry barges, and construction barges. Visible modern transportation and infrastructure elements surround those who use the river within the APE. The water level elevation of this portion of the Susquehanna River dramatically changed (as compared to historical levels) due to another modern intrusion farther upstream—the construction of the Conowingo Dam. The dam, constructed in 1928 to supply power to the greater Philadelphia region, is located in an area mapped by Captain John Smith in 1608 as Smyth’s Fales. The dam includes a powerhouse and a spillway. Construction of the dam resulted in the creation of a reservoir above the dam. The reservoir flooded the original town of Conowingo, Maryland, which was moved approximately one mile northeast from the dam’s eastern end.

Susquehanna River Rail Bridge Project

The river drops rapidly as it approaches its confluence with the Chesapeake Bay (167 feet over 25 miles), creating rapids, making it an ideal location for hydroelectric turbines (MHC 2001). To circumvent the rapids, crews completed construction of the 30-foot wide and three-foot deep Conowingo Canal (Susquehanna Canal) by 1790. The Canal was never successful and was subsequently abandoned between 1836 and 1840 (MHC 2001; Kapsch 2004; Weigley 1982).

The Project Team's background research identified little information on historic depths of the Susquehanna River, but they likely exceeded four feet deep in spring, based on records of watercraft used during this period. Early settlers constructed arks for hauling goods downriver with a hull of four feet, and came downriver during spring flooding (MHC 2001). At least one ferry, named Smith's Ferry, operated at the Town of Port Deposit, Maryland, in 1729. Boat traffic was also heavy enough to warrant the construction of the Concord Point Lighthouse in 1827 (MHC 2001). A section of the original river near Bald Friar was known for its swift current and depth (MHC 2001). Current depths are typically 9 to 9.5 feet deep, but can spike above 14 feet during elevated discharge (USGS 2016).

After the construction of the dam, trade and lumber transport up and down the river ceased. This was an economic loss for Port Deposit. The dam also blocked herring and shad from their upstream spawning grounds (MCH 2001). Construction of fish lifts constructed in 1972 and 1991 alleviated this problem. The dam helped to regulate the flow of the Susquehanna River, and stop the damaging effects of large ice gorges. Port Deposit recorded six ice gorges ranging from 20 to 30 feet high from 1857 to 1910 (MHC 2001). The lack of ice gorges, however, ceased the disturbance of sediment within the Susquehanna flats, deemed beneficial to water celery and the attraction of waterfowl such as canvasbacks (MHC 2001). This also impacted upstream, where the one-mile-wide, fourteen-mile-long lake currently sits.

At the time of Captain John Smith's arrival, the majority of the eastern seaboard was forested, and the majority of those forests were in mature, old-growth successional stages. While all native species currently found in the APE and surrounding area were likely represented at the time, the density and structure of the forest was likely different than what exists today.

Species composition likely varied on the local topography of the Susquehanna River floodplain and surrounding land features. Waterways and wetlands would likely have contained bald cypress (*Taxodium distichum*), sycamore (*Platanus occidentalis*), black gum (*Nyssa sylvatica*), sweetgum (*Liquidambar styraciflua*), and green ash (*Fraxinus pennsylvanica*), just as coastal wetlands along the bay do today. However, bald cypress-dominated wetlands are now very rare in Maryland, and today's trees do not reach the large sizes present in the early 1600s (NPS 2009). Continued disturbances to the forests since European arrival have resulted in greater populations of pines and maples, largely pioneer and early successional species, which would have had smaller populations in the pre-European settlement era (USGS 2011).

Smith described bald cypress with 18-foot bases, and oak trees large enough to cut 60 feet from a single log. American elms likely were a dominant canopy species, growing as high as 90 feet; today, they exist as minor forest components due to harvesting and introduced Dutch Elm disease. Probably most iconic was the American chestnut (*Castanea dentata*), which are described as growing taller than 120 feet, with canopies of 100 feet in diameter (NPS 2009). The chestnut has since vanished following the chestnut blight introduced in 1904 (Merkel 1906).

Forests along the Susquehanna River likely looked more like the Belt Woods area in terms of diversity and tree sizes and ages. Located in Prince George's County, Belt Woods is a National Natural Landmark that hosts one of the last old-growth forests in the United States. Managed by

Maryland DNR, the site contains white oaks (*Quercus alba*) over 200 years old and tuliptrees (*Liriodendron tulipifera*) ranging from 120-140 years old. There are also 42 documented tree species, some reaching over 100 feet in height (Rucker 2001).

In conjunction with more diversity in species and sizes, there was likely a greater diversity of ages within the stand. Disturbances to the Susquehanna forests were likely driven more by natural forces, ranging in size from a single, mature tree falling, to wind and ice storm events, to larger forest fires in drier areas. However, indigenous peoples would have already been manipulating forest stands, and the same timber and fruit trees sought after by European settlers were encouraged to grow in areas where indigenous settlements occurred, resulting in localized areas of lower species diversity (Williams 2003).

None of the invasive plants species that exist today were likely in the forests of Captain Smith's time. Most invasive species would not be introduced until later voyages and settlements on the eastern seaboard, some long after the Colonial period of American history. Invasive vines like kudzu (*Pueraria montana*, introduced late 1800s), Asiatic bittersweet (*Celastrus orbiculatus*, introduced 1860s), Japanese honeysuckle (*Lonicera japonica*, introduced 1800s), Asiatic tear-thumb (*Persicaria perfoliata*, introduced 1930s), and multiflora rose (*Rosa multiflora*, introduced late 1700s) would not have been overtaking the forest, and no invasive trees, such as Bradford pear (*Pyrus calleryana*, introduced early 1900s), tree-of-heaven (*Ailanthus altissima*, introduced late 1700s), Princess tree (*Paulownia tomentosa*, introduced 1840s), and Norway maple (*Acer platanoides*, introduced 1700s) would have been competing for canopy space (USDA 2016). The wetter forests along the Susquehanna River were not blanketed with Japanese stilt-grass (*Microstegium vimineum*, discovered in 1919) and lesser celadine (*Ficaria verna*, discovered in 1867).

Similarly, the wildlife inhabiting the forest that Smith observed was likely much more varied and abundant than it is today. The aggressive logging that occurred within the eastern United States not only removed the forests, but also the animal species that existed within them. This, combined with aggressive hunting and fur trading by increasing European populations, resulted in extirpations of many wildlife species. This especially includes predator species like black bear, wolves, bobcats, minks, and marten that have been locally or regionally extirpated from the landscape around the Chesapeake Bay. Notably missing today from the Forest Interior Dwelling Species (FIDS) are the passenger pigeons, which were historically described as darkening the sky, and the Carolina parakeet, both having gone extinct by the early 1900s (NPS 2009).

Most notable now along the Susquehanna River is the development and forest loss. What was once dense forest has given way to agricultural and cleared lands, in addition to residential and commercial areas (USGS 2011). The City of Havre de Grace, the Town of Perryville, and the Vulcan Materials quarry did not exist during Smith's time. Cleared areas likely corresponded to indigenous clearing for small agricultural activities, but the large farms present along the river today did not exist. Interestingly, between Captain Smith's visit and the contemporary view of the Susquehanna River, there would have been a time when there was less forest than exists today. While the density and diversity of the Chesapeake Bay's primeval forests will never return, the eastern U.S. has regained forest when compared to the extensive clearing that happened immediately following European arrival. In 1608, an estimated 95 percent of the Bay watershed was woodland; by the end of the 1800s, it was estimated at 40 percent. As of 2011, the estimate was at 55 percent (CBP 2016).

3. INDIGENOUS CULTURAL LANDSCAPES (ICL)

As stated in the document *A Conservation Strategy for the Captain John Smith Chesapeake National Historic Trail* (January 2013, p. 3): “Indigenous cultural landscapes are landscapes that generally encompass cultural and natural resources that would have likely been associated with, and supported, the historic lifestyle and settlement patterns of American Indians and that exhibited their cultural or esthetic values at the time of early European contact.”

An ICL (Late Woodland Habitation and Usage Area), possibly including Garrett Island, exists within the Project’s APE and vicinity, and contributes to the Trail’s interpretation. ICLs are evocative of the resources supporting American Indian lifeways and settlement patterns in the early seventeenth century and can assist in preservation efforts and interpretation.

As described above, both the eastern and western banks of the Susquehanna River segment within the Project’s APE and vicinity are highly developed. Modern intrusions in the vicinity of the Project include: railroad and highway networks, the existing Susquehanna Rail River Bridge, the CSX Susquehanna River Rail Bridge, Thomas J. Hatem Memorial Bridge, Millard E. Tydings Memorial Bridge, and residential, commercial and industrial waterfront developments. A network of paved roads, agricultural developments and residential areas exist beyond the immediate intrusions. The forested and undisturbed areas along the banks of the Susquehanna River have been altered over time due to the modern developments and transportation networks spanning the APE and vicinity. Consequently, any cultural or natural resources associated with the historic settlement patterns of American Indians have been previously impacted by these modern intrusions.

More specifically, the Susquehanna River, its marshes, and surrounding forests were integral to the lives of the indigenous tribes in the area. Prior to construction of the Conowingo Dam and clearing of extensive forests, the salinities of the upper Chesapeake Bay and mouth of the Susquehanna River were likely much higher than today. This is supported by the documentation by early Europeans of expansive oyster beds within the river (15 million square yards in 1883) (MHC 2001). Indigenous tribes took advantage of this abundance, and consumed large quantities of oysters and crabs. With the advent of the bow and arrow, indigenous peoples were also able to hunt abundant game, including deer, elk, wolf, bobcat, raccoon, skunk, waterfowl, and fish, including sturgeon and gar (MHC 2001).

There is also evidence that indigenous people were modifying vegetative landscapes to enhance the growth of specific food plants, such as weeds in the goosefoot family, certain native mustard greens, and amaranth (MHC 2001). Another important plant was the marsh elder shrub in the genus *Iva*. These plants were used for their oily seeds that have a high nutritional content (MHC 2001). Archaeological evidence also suggests that the native cultures consumed every available nut that grew within the area, including hickories, oaks, chestnut, walnut, beech, and others (Dent 1995).

Human-induced changes that occurred to the landscape post-settlement are described in detail under Item 2 above. Many of these changes, such as the construction of the Conowingo Dam and clearing of primary forest, had dramatic effects on the ICL. For example, the increased freshwater and silt runoff following the clearing of forests resulted in a complete loss of oyster beds in the Susquehanna River and reductions in crab populations. Many wildlife species were extirpated from the area or had significant population declines. The loss of mature forest resources greatly reduced the availability of nut trees for food and other practical uses.

Consequently, any cultural or natural resources associated with the historic lifestyle and settlement patterns of American Indians were previously impacted by these modern intrusions.

Garrett Island, owned by the U.S. Department of Interior, is located approximately one-third of a mile north of the Project, at the northern edge of the Project's APE. Garrett Island is relatively undisturbed and less affected by modern development. There is presently no public access to the island from the mainland, except by boat. No elements of the Project would physically be located on the island. Therefore, the Project will not have a direct effect on possible cultural resources on Garret Island, including those potentially associated with the ICL.

Visual effects of the Project on the ICL, including Garret Island, were also considered. The existing bridge which is the subject of the PE/NEPA effort is visible by commercial and recreational boaters near Garrett Island. In addition, the CSX Susquehanna River Rail Bridge for freight rail and Thomas J. Hatem Memorial Bridge cross the island.

The replacement of the existing Susquehanna River Rail Bridge with the two bridges proposed with the Project would somewhat alter views from the boaters' perspective. However, because the alignment, height, and dimensions of the proposed bridges would not differ substantially from the existing bridge, the Project would not block views of Garrett Island or substantially alter views or context of views from near Garrett Island from boaters' perspective as compared to existing conditions. Therefore, the Project will not have a significant visual effect on the island as a component of the ICL.

There is very limited possibility of other ICLs within the architectural APE because of extensive development in both Havre de Grace and Perryville. In addition, a number of historic resources within the APE were identified by the Project Team as part of the NEPA review and associated Section 106 process for the Project. The vast majority of the architectural APE's waterfront falls within a historic resource and has therefore already been thoroughly evaluated in terms of the Project's potential effects on historic and visual resources. On the Havre de Grace side of the Susquehanna River, the only portion of the waterfront not within the Havre de Grace Historic District is the northernmost part where the historic canal, lock, and toll house are located. On the Perryville side, the entire southern portion of the architectural APE's waterfront along the river has been evaluated for potential visual effects as part of either the Perry Point Veterans Administration Medical Center Historic District or the Perry Point Mansion House and Mill. The northern portion of the architectural APE's waterfront on the Perryville side of the river consists of the Rodgers Tavern immediately adjacent to the location of the Project and modern construction to its north.

4. HISTORIC AMERICAN INDIAN TOWN SITES

As defined by the CMP, historic American Indian town sites (both leaders' towns and ordinary towns) include but are not limited to those mapped in John Smith's Chesapeake Voyages 1607 – 1609, John Smith in the Chesapeake, and others, as preliminarily illustrated in Figure 2.4 of the CMP. Based on Figure 2.4 of the CMP and the cultural resources analyses conducted for the Project, there are no previously recorded American Indian towns within the Project's APE. All recorded pre-contact sites within the archaeological APE consist of lithic scatter, encampments, and short-term procurement camps. If funding becomes available to advance the Project through further design and construction, Phase IB archaeological investigations will be conducted; however, the presence of historic American town sites is unlikely based on currently available information.

5. SIGNIFICANT 17TH CENTURY AMERICAN INDIAN ARCHAEOLOGICAL SITES

The goal of the *Phase IA Archeological Assessment for the Susquehanna River Rail Bridge Project* (McDonald et al. 2014) was to evaluate the overall level of disturbance within the APE as well as identify areas within the APE that have the potential to contain archeological resources. This goal was achieved through a two-fold process of reviewing historical documentation and field observations to determine the potential integrity of soil deposits and evaluate whether conditions are sufficient for the potential preservation of cultural deposits.

Due to the location of the Project across a major river terrace overlooking the mouth of the Chesapeake Bay estuary, areas within the current APE would have been an extremely attractive place of settlement to pre-contact peoples. This includes the Nanticoke and Piscataway which were quite active in the region prior to European settlement. Additionally, the Susquehannock extended throughout the Chesapeake Bay area by 1634. However, due to the intensity of the railroad-related ground disturbing activities within the APE, the potential for intact pre-contact deposits is low. Particularly, within Havre de Grace, intact pre-contact contexts would most likely have had to have been deeply buried in order to have avoided disturbance. Given the lower density of settlement during the historic period on the eastern shore of the river (Perryville), this portion of the APE has a higher probability for intact pre-contact period sites. Indeed, several known sites with pre-contact components have already been identified within the vicinity of Perryville. As discussed in the Phase IA report, 23 pre-contact sites had been identified within one mile of the archaeological APE. Archaeological sites that provide information on more intensive occupations of the immediate area, such as encampments and resource procurement camps, have been found on Garrett Island, and outside of the archaeological APE, along the eastern shoreline of the Susquehanna River at Perry Point, and clustered at the mouth of Mill Creek.

Two pre-contact encampment sites have been identified on Garrett Island. However, this 198-acre island is not included in the Project's archaeological APE because no ground disturbing activities associated with the Project would occur on the island. A variety of pre-contact site types from various temporal periods have also been identified at Perry Point.

Within the Susquehanna River, past archival research efforts and remote sensing surveys detailed in the Phase IA report have indicated the potential for submerged historic shipwrecks or other vessels as well as potential structural remains associated with the evolution of the Havre de Grace Waterfront. These surveys have resulted in the identification of several targets that are located within the archeological APE for the project. Submerged cultural resources are subject to the natural effects of the environment. In particular, natural river phenomena, such as currents and erosion, are known to push sites out of the main channels and closer to shore. The Project could affect submerged resources, whose precise locations are not known at this time.

If/when this Project advances, additional archaeological investigations will be necessary to determine the presence and locations of any potential underwater resources, whether they would be impacted by Project construction, what types of resources they are, and their cultural and temporal associations. Based on the Phase IA Archeological Assessment, there is a low potential for the underwater resources to be associated with the theme of the Trail. The resources are more likely associated with 19th and 20th century commercial ships and barges.

From the Susquehanna River's eastern shore, also known as Perry Point, to Front Street on both sides of the existing railroad corridor there are multiple areas of archaeological sensitivity. Like the river itself, the eastern shore is located within the ICL – Late Woodland Habitation and

Usage Area. It should be noted that the APE for this project does not encroach on any protected lands, as defined in the Chesapeake Bay Program in 2000, and referenced on page 15 of *A Conservation Strategy for the Captain John Smith Chesapeake National Historic Trail*. The portion of the Project located within the ICL may have a higher potential for the presence of pre-contact resources including petroglyphs.

There have been previous archeological investigations in the immediate vicinity of the Project's archaeological APE; however, these investigations did not include all areas that may be impacted by the Project. The most significant previously identified resource located within the limits of the archaeological APE is the archeological component of the extant Rodgers Tavern. The Project could potentially disturb the areas west of the railroad and adjacent to the Rodger's Tavern site, which has a high potential for significant archeological resources.

From Front Street to the Project's eastern terminus, the majority of the area has been previously disturbed by the construction of the intersection of the NEC with the Norfolk Southern Port Road rail line and its associated parking lots, supply yards, and other support facilities. However, west of this railroad intersection, a group of nineteenth and early twentieth century single and multifamily residences are present along the southern edge of Broad Street. These areas have the potential to contain intact yard features such as wells, privies, trash middens or other cultural deposits. Should it be determined through additional archeological investigations and Project design that cultural deposits are present and are likely to be adversely impacted by the Project, mitigation measures to address the impact(s) will be developed in accordance with the Section 106 Programmatic Agreement (PA) that is currently being developed for the Project.

Areas Where Phase IB Archeological Testing Will Be Conducted

Prior to construction of the Project, Phase IB archeological investigations will be completed in all portions of the APE that have potential for archeological resources, as determined in the Phase IA Archeological Assessment, and could be affected by the Preferred Alternative. This includes not only terrestrial areas with archeological potential, but underwater locations as well. Areas with archeological sensitivity within APE are reviewed below.

- Between N. Juniata Street and N. Union Street, at the northwest corner of the intersection of Warren Street and N. Adams Street between the existing railroad and Warren Street.
- Between N. Union Street and the Susquehanna Riverfront, an area sensitive for resources relating to waterfront development.
- Within the Susquehanna River, given the lack of certainty regarding the locations and integrity of underwater archeological resources within the river portion of the APE, Phase I underwater archeological studies will examine a buffer zone upstream and downstream.
- From the Susquehanna River's eastern shore, also known as Perry Point, to Front Street, Phase IB investigations will be conducted for all areas of ground disturbance associated with the Proposed Project west of Broad Street/Avenue A. Additionally, portions of the APE within the construction, staging, and access areas that have not already been subjected to archeological investigations on the east side of the railroad within the ICL – Late Woodland Habitation and Usage Area will be considered archeologically sensitive for both pre-contact and historic resources.

Susquehanna River Rail Bridge Project

- From Front Street to the Project's eastern terminus, a systematic Phase IB archeological survey will be conducted. The Preferred Alternative changes the alignment of the wye track and encroaches into the archeologically sensitive areas.

A thorough analysis of the Project's archaeological APE has identified areas that are archaeologically sensitive and will be tested via a Phase IB archaeological survey should the Project advance toward construction and it be determined these areas could be subject to potential effects by the Preferred Alternative. While the ICL is a new, useful tool for assessing the APE and potentially significant resources, the portions of the APE contained within the ICL have been archaeologically evaluated, as concurred upon by Maryland Historical Trust (MHT). Additionally, Amtrak, as the likely project sponsor should this Project advance through further design and/or construction, is committed to testing any archaeologically sensitive areas as part of a Phase IB survey within the Preferred Alternative APE, including within the ICL as will be set forth in the PA.

6. LANDSCAPE FEATURES AND CULTURAL SITES OF SIGNIFICANCE TO MODERN AMERICAN INDIAN TRIBES

The CMP identifies two criteria in order for a landscape feature or cultural site to be designated a high potential historic site. These are:

- Important historic and interpretive associations (to be obtained through consultation with Native American tribes); and
- Scenic quality and relative freedom from intrusion (CMP, 2011, p. 2-9)

In August 2014, FRA, as the lead federal agency for Section 106, in coordination with MDOT, identified and invited over 20 entities, including several non-federally recognized tribes, to participate in the Section 106 process for the Project. There are no federally recognized tribes in Maryland. None of the non-federally recognized tribes accepted FRA's invitation to participate as a Section 106 consulting party.

FRA and MDOT contacted the following tribes: Accohannock Indian Tribe, Inc., Assateague Peoples Tribe, Nause-Waiwash Band of Indians, Inc., Piscataway Indian Nation, Piscataway-Conoy Tribe, Pocomoke Indian Tribe, Inc., Southeastern Cherokee Council, Inc. (Many Waters Band), Youghiogheny River Band of Shawnee Indians, Inc., and the Maryland Commission on Indian Affairs.

The Southeastern Cherokee Council, Inc. declined to participate as a consulting party, stating it is not a federally recognized tribe. The Paramount Chief of the Pocomoke Indian Nation attended two Section 106 meetings (on March 9, 2015 and on August 18, 2015) and expressed interest in archeological resources in the Project area and concern with sensitive handling of such resources, including petroglyphs and human remains. The Project Team shared the Section 106 meeting minutes and the Phase IA Archeological Assessment in response to the request from the Paramount Chief of the Pocomoke Indian Nation.

All tribes that FRA and MDOT contacted were also invited to attend Section 106 Consulting Parties meetings but with the exception of the Pocomoke Indian Nation, the tribes did not respond or provide information regarding potential landscape features or cultural sites of significance within the Project APE.

There are extensive modern intrusions within the APE that limit the possibility for the presence of landscape features or cultural sites of significance to American Indian tribes at present. The

PA that is currently being developed for the Project will include stipulations for further tribal outreach and consultation should future archaeological investigations or Project construction activities encounter resources that may be of religious and cultural significance to tribes.

7. CROSS SITES

As defined in the CMP, a Captain John Smith cross site is a general location in proximity to the trail where Smith's maps indicate that he or others placed a brass cross, marking the limits of their exploration. These sites are generally known on the basis of interpretation of Smith's maps, his journal writings, and scholarly research. There are no such sites in or near the Project APE (See Figure 2.7b of the CMP). The nearest John Smith cross site is approximately four miles north of the Project, on the western shore of the Lower Susquehanna. It would not be affected by the Project.

8. PUBLIC ACCESS SITES

In addition to trail-related resources (listed in 1-7 above), the CMP lists public access to water as important in identifying "high potential route segments" of the Trail. According to the CMP, access sites are places where the public can view Smith's voyage routes from the land or gain physical access to the water along the voyage routes for boating, fishing, swimming or other recreational use. Public access sites are important to the Trail in the context of the other trail-related resources and not significant to the interpretation of the Trail on their own. The public access locations within the APE are also not individually eligible for inclusion in the NRHP.

The Project's APE and vicinity includes several publicly-accessible waterfront parks, as well as several private marinas and municipal boat ramps. There are a boat launch, kayak launch and fishing pier in the Jean S. Roberts Memorial Park (Park), which offers public access to the Susquehanna River. The Preferred Alternative includes the construction of an elevated structure above the Park that would require modification of the existing park infrastructure. This structure would prohibit public access within the Amtrak right-of-way and would require the removal of the boat ramp area and a portion of the pier located at the Park. The Project Team will continue to work with the City of Havre de Grace to ensure that a replacement for the Park's boat launch is provided in a suitable location. In addition, the Perryville Community Park is also located east of the existing NEC along the peninsula between Mill Creek and the Susquehanna River. The Perryville Community Park has a kayak launch that will not be impacted by the Preferred Alternative.

CONCLUSION

To assess whether the portion of the Trail within the Project's APE is eligible for inclusion in the NRHP, FRA evaluated the extent to which the APE contains any of the Trail's eight categories of high potential historic sites, using the criteria defined in the CMP. The following is a summary of the analysis presented in this document:

- **Significant Voyage Stops.** The CMP evaluated the only identified stop in the Project's APE and determined it was not a high potential historic site, presumably due to the fact that the site does not meet the criteria for being generally free from intrusion by modern development.
- **Evocative Landscapes.** The CMP does not list the Susquehanna River as one of the sites that are highly evocative of the 17th century. Based on the Project Team's extensive field surveys, FRA has classified the above-ground APE as containing extensively fragmented

landscapes, and therefore not meeting the criteria of possessing a feeling that expresses the aesthetic or historic sense of a particular period of time.

- **Indigenous Cultural Landscapes (ICL).** An ICL, possibly including Garrett Island, exists within the Project's above-ground APE; however, the amount of modern development in close proximity to Garrett Island limits this resource's ability to meet the criteria for being generally free from intrusion by modern development.
- **Historic American Indian Town Sites.** No previously recorded Native American villages are documented within the limits of the Project's archaeological APE.
- **Significant 17th Century American Indian Archaeological Sites.** Although the Phase IB archaeological investigation for the Project has not yet been conducted, the Phase IA assessment indicated that due to the intensity of the railroad activities within the archaeological APE, the potential for intact pre-contact deposits is low.
- **Landscape Features and Cultural Sites of Significance to Modern American Indian Tribes.** No Tribes contacted regarding the Project responded with any information regarding the presence of such landscape features or cultural sites.
- **Cross Sites.** There are no Captain John Smith cross sites in or near the Project.
- **Public Access Sites.** The Project's APE and vicinity include several publicly-accessible waterfront parks, as well as several private marinas and municipal boat ramps. The presence of public access sites is relevant only in the context of the other seven trail-related resources and on its own does not make the segment of the Trail within the Project's APE eligible for NRHP.

As explained in the CMP, "a high potential route segment must have a much greater than average aggregation of trail-related resources within the trail corridor." Although the CMP designates the Susquehanna River as a high potential route segment (see 2011, Figure 2.7b), based on the Project Team's evaluation to date, the portion of the Trail within the Project's APE does not contain "a much greater than average aggregation of trail-related resources" and therefore does not meet the criteria for inclusion in the NRHP. At this time, no funding has been allocated for Project construction. If/when the Project advances through further design and to construction, additional consideration of the Trail resources may be necessary. Such a reevaluation will include findings of any Phase IB archaeological investigations for the Project. This potential need to reconsider the NRHP eligibility of the portion of the Trail in the Project's APE will be a stipulation in the PA. Such additional evaluation would also utilize any NPS information that may become available in the future. As a Section 106 consulting party, NPS will have the opportunity to review and comment on the draft PA before it is executed, as well as advise FRA of any new or updated information that may be relevant to an NRHP eligibility evaluation of the Trail.

REFERENCES

Berry, D. A. 2009. Maryland's Lower Susquehanna River Valley: Where the River Meets the Bay. Arcadia Publishing.

Chesapeake Bay Program (CBP) 2016. "Bay Watershed Forest Cover." http://www.chesapeakebay.net/indicators/indicator/bay_watershed_forest_cover [Accessed 10/6/16].

Dent, R. J. Jr., 1995. Chesapeake Prehistory: Old Traditions, New Directions. Plenum Press.

- Kapsch, R. J. 2004. Canals, Volume 1. W. W. Norton & Company.
- Maryland Humanities Council (MHC). 2001. *History Matters!:* A History of Maryland's Lower Susquehanna Region.
- Merkel HW 1906. "A Deadly Fungus on the American Chestnut." *Annual Report of the New York Zoological Society, Vol 10 (1906)*. Charleston, SC: Nabu Press, 2011.
- National Park Service (NPS) 2011. "Captain John Smith Chesapeake National Historic Trail Final Comprehensive Management Plan and Environmental Assessment."
<http://smithtrail.net/about-the-trail/planning-process/>
- National Park Service (NPS) 2010. "Captain John Smith Chesapeake National Historic Trail Interpretive Plan."
- National Park Service (NPS) 2013. A Conservation Strategy for the Captain John Smith Chesapeake National Historic Trail." <http://smithtrail.net/about-the-trail/planning-process/>
- National Park Service (NPS) 2009. "Life In and Around the Waters of the Chesapeake Bay – 1608." Captain John Smith Chesapeake National Historic Trail. National Park Service.
http://smithtrail.net/files/Bay_watershed_1608.pdf? [Accessed 10/3/16].
- Rucker CB. "Belt Woods: Tree Heights and Forest Structure in the South Woods." Native Tree Society. http://www.nativetreesociety.org/fieldtrips/maryland/belt_woods_forest_structure.htm [Accessed 10/3/16].
- PR Newswire. March 1, 1993. PEPCO's Conowingo Hydroelectric Station Marks 65th Anniversary, "A Symbol of Progress" in 1928, One of the World's Largest Power Project. (October 7, 2016).
<https://www.thefreelibrary.com/PECO'S+CONOWINGO+HYDROELECTRIC+STATION+MARKS+65TH+ANNIVERSARY+--+A...-a013122701>
- United State Geological Survey (USGS) 2011. Gap Analysis Program (GAP). National Land Cover, Version 2. <http://gapanalysis.usgs.gov/gaplandcover/viewer/> [Accessed 10/6/16].
- United States Dept. of Agriculture (USDA) 2016. "National Invasive Species Information Center (NISIC)."
- United States Geologic Survey (USGS). National Water Information System. (October 7, 2016).
http://waterdata.usgs.gov/nwis/uv?site_no=01578310.
- Weigley, R. F. 1982. Philadelphia: A 300 Year History. W. W. Norton & Company.
- Williams GW 2003. "References on the American Indian Use of Fire in Ecosystems." USDA Forest Service, Washington, D.C.
http://www.wildlandfire.com/docs/2003_n_before/Williams_Bibliography_Indian_Use_of_Fire.pdf [Accessed 10/4/16].

Draft Programmatic Agreement



PROJECT PROGRAMMATIC AGREEMENT

**Among the
FEDERAL RAILROAD ADMINISTRATION,
MARYLAND STATE HISTORIC PRESERVATION OFFICER,
And
NATIONAL RAILROAD PASSENGER CORPORATION,**

**Regarding the
SUSQUEHANNA RIVER RAIL BRIDGE PROJECT
BETWEEN HAVRE DE GRACE, HARFORD COUNTY, MARYLAND
AND PERRYVILLE, CECIL COUNTY, MARYLAND**

WHEREAS, the existing Susquehanna River Rail Bridge, located along the National Railroad Passenger Corporation's (Amtrak) Northeast Corridor (NEC) between the City of Havre de Grace, Harford County, and the Town of Perryville, Cecil County, was constructed in 1906 and is nearing the end of its useful life, with existing structural and operational deficiencies that cannot accommodate projected regional high-speed travel requirements on the NEC; and

WHEREAS, the Federal Railroad Administration (FRA) has provided funding through the High-Speed Intercity Passenger Rail (HSIPR) Program to the Maryland Department of Transportation (MDOT) to carry out preliminary engineering (PE) and environmental assessment in compliance with the National Environmental Policy Act (42 U.S.C. § 4321 et. seq.) (NEPA) for alternatives to replace the existing bridge; and

WHEREAS, FRA is preparing an Environmental Assessment (EA) pursuant to NEPA and has coordinated the NEPA processes with consultation pursuant to Section 106 of the National Historic Preservation Act of 1966 (54 U.S.C. § 306108) (NHPA), as amended, and its implementing regulations at 36 CFR § 800 (hereinafter collectively referred to as Section 106); and

WHEREAS, the Preferred Alternative identified in the EA consists of demolition and replacement of the existing Susquehanna River Rail Bridge and construction of two new two-track bridges over the Susquehanna River with a new track alignment with an embankment and retaining walls (hereinafter referred to as the Project) (**Attachment 1**); and

WHEREAS, Amtrak, owner and operator of the NEC and the existing Susquehanna River Rail Bridge, has acted as the Project designer responsible for carrying out the preliminary engineering in support of the NEPA process; and

WHEREAS, FRA has determined that, should FRA provide financial assistance for the Project, it would be an undertaking pursuant to Section 106, and FRA would be responsible for compliance with Section 106; and

WHEREAS, should FRA provide financial assistance for the Project (which could include financial assistance for further design, property acquisition, demolition, construction, and other related activities), FRA intends to use this Project Programmatic Agreement (PA) to satisfy its Section 106 responsibilities; and

WHEREAS, FRA, in consultation with the Maryland State Historic Preservation Officer (MD SHPO), has defined the Project's area of potential effects (APE) for historic architecture

(Attachments 2 and 3) and conducted technical studies for both historic architecture and archeology pursuant to Section 106 (Attachment 4); and

WHEREAS, FRA invited parties to consult in the Section 106 process and some accepted, and FRA has consulted with 1) Cecil County Government; 2) City of Havre de Grace; 3) Friends of Concord Point Lighthouse, Inc.; 4) Harford County Government; 5) Havre de Grace Decoy Museum; 6) Lower Susquehanna Heritage Greenway; 7) National Park Service (NPS), Chesapeake Bay Office; 8) National Railway Historical Society, Perryville Chapter; 9) Town of Perryville; 10) MDOT; and 11) Maryland Transit Administration (MTA) regarding the effects of the Project on historic properties, and has afforded the public-at-large an opportunity to comment through the concurrent NEPA public involvement process; and

WHEREAS, through consultation, FRA has identified the following thirteen (13) architectural historic properties in the APE that are listed in or eligible for listing in the National Register of Historic Places (NRHP) (see Attachments 2 and 3):

1. Susquehanna River Rail Bridge and nine undergrade bridges (collectively known as the “Susquehanna River Rail Bridge Overpasses”) (HA-1712)
2. Havre de Grace Historic District (HA-1125)
3. Perryville United Methodist Church (CE-1573)
4. Perryville Presbyterian Church (CE-1574)
5. Southern Terminus, Susquehanna and Tidewater Canal – South Lock #1 and Toll House (HA-112; HA-113)
6. Martha Lewis (skipjack) (HA-2189)
7. Rodgers Tavern (CE-129)
8. Principio Furnace (Principio Iron Works) (CE-112)
9. Perry Point Mansion House and Mill (CE-146; CE-244)
10. Perryville Railroad Station (CE-1442)
11. Perry Point Veterans Administration (VA) Medical Center Historic District (CE-1544)
12. Crothers House (Furnace Bay Golf Course Clubhouse) (CE-1566)
13. Woodlands Farm Historic District (CE-145); and

WHEREAS, through consultation, FRA has determined that the Project, if constructed, will have an adverse effect on the following four historic properties:

1. Susquehanna River Rail Bridge and eight of the nine Susquehanna River Rail Bridge Overpasses that carry the NEC (Mill Creek Undergrade Bridge at Milepost 59.00; Perryville Railroad Station Undergrade Bridge at Milepost 59.39; Access Road Undergrade Bridge at Milepost 59.52; North Freedom Lane Undergrade Bridge at Milepost 60.51; North Stokes Street Undergrade Bridge at Milepost 60.56; Centennial Lane Undergrade Bridge at Milepost 60.61; North Adams Street Undergrade Bridge at Milepost 60.69; and North Juniata Street Undergrade Bridge at Milepost 60.77) (HA-1712)
2. Havre de Grace Historic District (HA-1125)
3. Rodgers Tavern (CE-129)
4. Perryville Railroad Station, including the Station, the Perryville Railroad Station Undergrade Bridge at Milepost 59.39, and the Perryville Interlocking Tower (CE-1442)

WHEREAS, through consultation, FRA has determined that the Project is located in an area with the potential for the presence of both pre- and post-contact archeological resources, but that the identification of and effects on archeological resources cannot be fully determined based on the current PE design; and

WHEREAS, through consultation, FRA has elected to complete the final identification, evaluation, and effects assessment on archeological resources in phases, pursuant to 36 CFR § 800.4(b)(2) and 800.5(a)(3), and in accordance with the ongoing consultation process specified in this PA pursuant to 36 CFR § 800.14(b); and

WHEREAS, FRA has invited Amtrak, as the Project designer, and owner and operator of the NEC, to participate in this PA as an invited signatory with responsibilities under this PA, and Amtrak has accepted; and

WHEREAS, FRA intends to invite the following four consulting parties to be concurring parties under this PA: MDOT, MTA, City of Havre de Grace, and Town of Perryville; [will need to update with who accepts the invitation] and

WHEREAS, MD SHPO agrees that fulfillment of the terms of this PA will satisfy the responsibilities of any Maryland state agency under the requirements of the Maryland Historical Trust Act of 1985, as amended, State Finance and Procurement Article §§ 5A-325 and 5A-326 of the Annotated Code of Maryland, for any components of the Project that require licensing, permitting, and/or funding actions from Maryland state agencies; and

WHEREAS, in accordance with 36 CFR § 800.6(a)(1), FRA has notified the Advisory Council on Historic Preservation (ACHP) of its adverse effect determination and intention to enter into a PA with specified documentation by letter dated August 1, 2014, and the ACHP, by letter dated August 22, 2014, declined to participate in the consultation pursuant to 36 CFR § 800.6(a)(1)(iii); and

NOW, THEREFORE, FRA, MD SHPO, and Amtrak (each a signatory and together signatories) agree the Project will be implemented in accordance with the following stipulations in order to take into account the effect of the Project on historic properties.

STIPULATIONS

I. APPLICABILITY

- A. With the exception of the provisions regarding the identification, assessment, and adoption of treatment measures in Stipulations VI, VII, and VIII, this PA applies to FRA's undertaking and only binds FRA if FRA provides financial assistance for activities necessary to advance the Project toward and/or through construction.
- B. Notwithstanding Stipulation I.A., this PA applies to all of Amtrak's activities necessary to advance the Project toward and/or through construction, including, but not limited to, further design, acquisition of property for the Project, demolition, and construction that are funded with any amount of financial assistance from FRA or non-federal funds. Nothing herein shall be interpreted as agreement by Amtrak that Section 106 applies to other Amtrak projects with independent utility that use exclusively non-federal funds. This PA does not apply to actions or activities having independent utility that Amtrak may carry out, including the normal maintenance, upkeep, and continued safe operation of the NEC.
- C. This PA could apply should another federal agency have an undertaking as part of the Project; that agency may adopt this PA and agree to comply with its terms to fulfill its Section 106 responsibilities, as provided for in Stipulation XIV.

II. TIMING

Activities necessary to advance the Project toward and/or through construction may be phased or implemented incrementally, as appropriate, relative to the schedule(s) and funding availability for further design and construction.

III. ROLES AND RESPONSIBILITIES

- A. FRA, as a signatory and the lead federal agency for the NEPA work related to the Project, has authority to execute, amend, and/or terminate this PA. FRA will ensure that the identification, assessment, and adoption of treatment measures are carried out in accordance with the procedures established in Stipulations VI, VII, and VIII, regardless of whether or not FRA provides financial assistance for activities necessary to advance the Project toward and/or through construction. If FRA provides financial assistance for the Project, in addition to ensuring that the identification, assessment, and adoption of treatment measures are carried out in accordance with the procedures established in Stipulations VI, VII, and VIII, FRA will also ensure that all other stipulations and procedures in this PA are carried out, as appropriate, in accordance with the terms prescribed in this PA. If FRA provides financial assistance for activities necessary to advance the Project toward and/or through construction, FRA will continue to consult with all parties identified in the initial Section 106 consultation process resulting in the creation of this PA, and FRA will identify and invite additional consulting parties, as needed, to participate in the implementation of this PA.
- B. MD SHPO, as a signatory with responsibility for regulatory review and compliance, has authority to execute, amend, and/or terminate this PA and is also responsible for providing formal review and comment for actions requiring the same as part of carrying out this PA.
- C. Amtrak, as an invited signatory, has the same rights with regard to seeking amendment and/or termination of this PA as other signatories and will ensure that specified stipulations and procedures, for which it has assumed responsibility, are carried out in accordance with the terms prescribed in this PA.
- D. Consulting parties include certain additional individuals or organizations with a demonstrated interest in the Project who have already participated in, or who may later join in as consulting parties in the Section 106 process due to the nature of their legal or economic relation to the Project or affected properties, or their concern with the Project's effects on historic properties. Consulting parties, who may also have signed this PA as a concurring party, retain their rights as consulting parties to participate in on-going consultation prescribed by this PA, and attain no additional rights relative to this PA.
- E. Concurring parties are consulting parties who have been invited to concur in this PA. Concurring parties to this PA are able to review and comment on draft documentation prepared pursuant to stipulations herein.

IV. PROFESSIONAL QUALIFICATIONS AND STANDARDS

- A. Amtrak will ensure that all work carried out pursuant to this PA will be done by or under the direct supervision of a qualified professional in the disciplines of

Archeology, Architectural History and/or Historic Architecture who meets the relevant standards outlined in the Secretary of the Interior's (SOI) *Professional Qualifications Standards for Archeology and Historic Preservation* (36 CFR § 61) (http://www.nps.gov/history/locallaw/arch_stnds_9.htm).

B. Implementation of the stipulations pursuant to this PA will utilize, as appropriate, the following regulations, policies, standards, and guidelines, or any subsequent replacements of or revisions to same:

- Section 106, NHPA, as amended, and its implementing regulations (36 CFR § 800)
- *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings* (National Park Service 1995)
- *Historic American Buildings Survey Guide to Field Documentation* (National Park Service, May 16, 2011)
- *Historic American Buildings Survey Guidelines for Historical Reports* (National Park Service 2007)
- *Heritage Documentation Programs, HABS/HAER/HALS Photography Guidelines* (National Park Service, November 2011, updated June 2015)
- *Standards and Guidelines for Architectural and Historical Investigations in Maryland* (Maryland Historical Trust, 2000)
- *Guidelines for Compliance-Generated Determinations of Eligibility (DOEs)* (Maryland Historical Trust, 2002)
- *Standards for Submission of Digital Images to the Maryland Inventory of Historic Properties* (Maryland Historical Trust, effective January 2008, revised January 2015)
- *Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines* (48 FR 44716)
- *Section 106 Archaeology Guidance* (ACHP, 2009)
- *Standards and Guidelines for Archeological Investigations in Maryland* (Maryland Historical Trust, 1994)
- *Collections and Conservation Standards, Technical Update No. 1 of the Standards and Guidelines for Archeological Investigations in Maryland* (Maryland Historical Trust, Revised 2005)
- *Curation of Federally-Owned and Administered Archeological Collections* (36 CFR § 79)
- *Native American Graves Protection and Repatriation Act of 1990* (43 CFR § 10, as amended)
- *Maryland Burial Law* (Title 10 Subtitle 4 §§ 10-401 through 10-404 of the Annotated Code of Maryland)
- *Policy Statement Regarding Treatment of Burial Sites, Human Remains and Funerary Objects* (ACHP, February 23, 2007)

V. TREATMENT MEASURES FOR ARCHITECTURAL RESOURCES

A. Amtrak, in consultation with the signatories and other consulting parties and, if using FRA financial assistance for activities necessary to advance the Project toward and/or through construction, as directed by and under the authority of FRA, will mitigate Project effects on architectural historic properties according to the stipulations and procedures outlined below. Amtrak will initiate the architectural stipulations and

complete the stipulations in accordance with the Project phasing and the deadlines established herein.

- B. Prior to initiating construction, Amtrak will complete evaluations of the following three National Historic Trails within the undertaking's APE to determine if any segments of these trails are eligible for inclusion in the NRHP: Captain John Smith Chesapeake National Historic Trail, Star-Spangled Banner National Historic Trail, and the Washington-Rochambeau Revolutionary Route National Historic Trail. As part of the evaluation, Amtrak will consult with the respective NPS trail Superintendent. If Amtrak in consultation with FRA (if providing financial assistance for the Project), MD SHPO, and NPS identify any additional resources listed in or eligible for listing in the NRHP, Amtrak will follow the procedures described in Section VII.
- C. Design Review
1. To the extent practicable, Amtrak will make commercially reasonable efforts to ensure that the design of the Project is compatible with affected historic properties and conforms to the guidance contained in the *Secretary of the Interior's Standards for the Treatment of Historic Properties* ("Standards"). For those components of the Project that may affect historic resources, Amtrak will develop design documents in consultation with MD SHPO and the concurring parties. MD SHPO review of design documents (plans and specifications) will occur at approximately 30% design and 60% design. These reviews will be limited to determining whether proposed designs are compatible with affected historic properties and in conformance with the *Standards*. Amtrak will submit design documents, with an explanation of how the proposed design conforms to the *Standards* to concurring parties and MD SHPO for review and comment. Amtrak, in consultation with MD SHPO and FRA (if providing financial assistance for the Project), will resolve any design and preservation issues identified by MD SHPO during the 30% design review prior to submission of 60% design level documents.
 2. Amtrak will ensure individual historic properties and contributing elements of historic districts are clearly labeled on all relevant Project plan sheets.
 3. Amtrak will consult with MD SHPO and concurring parties to determine which aspects of the design will require additional SHPO coordination regarding exterior appearance. For those features for which MD SHPO or concurring parties request more information, Amtrak will submit to MD SHPO and the concurring parties additional material such as color renderings, catalog documentation, or material samples.
 4. Amtrak will consider design review comments provided by the signatories and concurring parties, but ultimately is responsible for ensuring that the structural and engineering design of bridges and other structures meets engineering and safety standards for passenger and freight railroads.
 5. To the extent practicable, Amtrak will design the proposed new bridges, including the bridge superstructure and piers, to reflect traditional design features and to preserve the existing viewshed from the Havre de Grace Historic District.
 6. Amtrak will design the alterations to the eight Susquehanna River Rail Bridge overpasses in accordance with the *Standards*. The proposed treatment will include design of the new extensions to include a form liner that emulates the look, color, and texture of the bridges' existing stone; the installation of lighting to improve the safety beneath the bridges, and, to the extent practicable, steps to

- eliminate the water infiltration and mineral seepage in the existing stone material.
7. Amtrak will develop an aesthetic treatment for the retaining wall that is to be constructed in close proximity to Rodgers Tavern. The treatment plan will include consideration of utilizing a stone form liner to emulate the look, color, and texture of the stone in the Rodgers Tavern.
 8. For any proposed retaining wall that has the potential to affect a historic property, Amtrak will design the new wall in accordance with the *Standards*.
 9. Amtrak will develop plans in accordance with the *Standards* in order to relocate the Perryville Interlocking Tower to a new location that is within the NEC right-of-way and is in close proximity to the Perryville Railroad Station.
 10. Amtrak will replace in-kind sections of the existing signature sidewalks on Union Avenue, Otsego Street, and Water Street in Havre de Grace damaged during Project construction.
 11. If the bridge construction staging area occurs on the publicly-owned land along Water Street, Union Avenue, and/or St. Johns Street in Havre de Grace, Amtrak will repair portions of the sites damaged during Project staging or construction, including, as needed, removal of hard pack stone and the replanting of lawn areas, the planting of trees and shoreline buffer areas, and the installation (or re-installation) of Jean S. Roberts Memorial Park and/or David R. Craig Park improvements.

D. Historic Properties Construction Protection Plan

1. Amtrak will prepare and enforce a Historic Properties Construction Protection Plan (Protection Plan) to protect against, monitor for, and manage construction-related physical effects on identified historic properties. The Protection Plan will apply to historic properties located inside, adjacent to, or above the Project limits of disturbance, stockpile locations, construction staging areas, tunneling zones, and any other area where Project activities may take place.
2. At minimum, the Protection Plan will: identify and map all historic properties subject to the Protection Plan; require security fencing; establish vibration thresholds; address potential ground displacements; provide monitoring; and create a publicly- accessible telephone hotline and emergency response procedure for reporting and addressing threats or physical damage to historic properties.
3. Amtrak will develop and distribute the draft Protection Plan with the 90% Project plan sheets and specification documents to the signatories and concurring parties for review and comment following the steps described in Stipulation XI. Amtrak will deliver to the signatories and concurring parties the final Protection Plan with delivery of the 100% Project plan sheets and specification documents.

E. Historic American Buildings Survey (HABS)/Historic American Engineering Record (HAER) Documentation

1. Amtrak will prepare individual Level II HABS/HAER written and photographic documentation for deposit with NPS and MD SHPO for the following historic resources:
 - a) Susquehanna River Rail Bridge: Amtrak will prepare a HAER recordation of this historic property focusing on the bridge, which is both individually eligible for the NRHP and a contributing element of the Havre de Grace Historic District. Photographic documentation will record the complete

- bridge structure and its swing mechanism, setting, and wider railroad corridor within the vicinity of the Susquehanna River. Written documentation will focus on the history of transportation in the region, the role of the Pennsylvania Railroad, and the story behind the final location, design, engineering, and method of construction used for building the existing Susquehanna River Rail Bridge.
- b) Eight Overpass Bridges: Amtrak will prepare HAER recordations of these historic resources focusing on the bridges and their settings. All eight bridges contribute to the significance of the Susquehanna River Rail Bridge; the North Freedom Lane Undergrade Bridge at Milepost 60.51; North Stokes Street Undergrade Bridge at Milepost 60.56; Centennial Lane Undergrade Bridge at Milepost 60.61; and North Adams Street Undergrade Bridge at Milepost 60.69 contribute to the Havre de Grace Historic District; and the Perryville Railroad Station Undergrade Bridge at Milepost 59.39 contributes to the Perryville Railroad Station complex. The photographic documentation will record the bridges, their retaining walls, and the surrounding resources, including the Havre de Grace Historic District and the Perryville Station complex. The written documentation will address the bridges' construction as part of the Pennsylvania Railroad's early 20th century construction campaign; the railroad's overall construction and evolution; the importance of the stone architecture construction and the relationship to locally quarried stone; and the importance of alleys in the physical development of Havre de Grace.
 - c) Perryville Interlocking Tower: Amtrak will prepare a HAER recordation of this resource focusing on the structure and setting of the tower, including the Perryville Station and the Perryville Railroad Station Undergrade Bridge at Milepost 59.39. The written documentation will address the structure's significance as part of the Pennsylvania Railroad's early 20th century building campaign as well as the station complex's architectural significance.
2. Amtrak will consult with the NPS Northeast Region HABS/HAER office on the final scope, content, format, and disposition of each recordation effort. This includes consideration of a procedure for an interim submission of the photographic documentation for NPS review and approval, in order to release the structures for construction activities prior to completion of the remaining recordation package. Amtrak will prepare the photographic documentation using digital images consistent with Level II HABS/HAER photography guidelines contained in Stipulation IV.B.
 3. Where possible, the HABS/HAER written documentation will draw upon original construction documents, historic photographs, and oral interviews with local residents or individuals possessing special knowledge. Potential repositories to consult for information on individual buildings, structures, and railroad resources include, but are not limited to, the Amtrak archive, National Archives, Maryland State Archives, Maryland Historical Society, Pennsylvania State Archives, and Hagley Archives.
 4. As relevant, the content of the HABS/HAER documentation will draw upon research and documentation carried out as part of the interpretive displays (Stipulation V.F.).
 5. Amtrak will initiate each HABS/HAER recordation when funds are committed for activities necessary to advance the Project toward and/or through construction that will affect historic properties and/or contributing elements to historic districts. Amtrak will complete the photographic recordation phase prior to

the initiation of construction activities associated with the historic property or contributing element to be documented. Amtrak will leave each building or structure and its associated parcel of land in an unaltered appearance until the photographic documentation phase is completed.

6. Unless otherwise agreed to by NPS and MD SHPO, Amtrak will ensure that all documentation is completed and accepted by HABS/HAER prior to the commencement of construction and/or demolition activities associated with the historic property or contributing element to be documented.
7. Unless otherwise agreed to by NPS and MD SHPO, Amtrak will provide final copies of each HABS/HAER recordation document to NPS and MD SHPO, and offer copies to FRA, the Maryland State Archives, Maryland Historical Society, City of Havre de Grace, the Town of Perryville, the Historical Society of Cecil County, the Historical Society of Harford County, the Lower Susquehanna Heritage Greenway, the B&O Railroad Museum, and the Pennsylvania Railroad Technical & Historical Society.

F. Interpretive Displays

1. Amtrak will prepare historic interpretive material related to the importance of the transportation history of Havre de Grace and Perryville, including a film that documents the Susquehanna River Rail Bridge in operation. In consultation with the signatories and the concurring parties, Amtrak will first develop a plan that specifies what interpretive material will be developed, what historic themes will be included, and where the material will be located. Possible interpretive themes for the displays include, but are not limited to, the area's transportation history and how it affected the development of the area as a regional commercial center; the convergence of multiple forms of transportation, e.g., ferry, canal, rail, and roadway; the history of the Pennsylvania Railroad and its development of the NEC; the architectural and engineering importance of the Susquehanna River Rail Bridge and the associated overpass bridges; the use of locally quarried Port Deposit granite; and relevant themes associated with the Captain John Smith Chesapeake National Historic Trail, the Star-Spangled Banner National Historic Trail, and the Washington-Rochambeau Revolutionary Route National Historic Trail.
2. To the extent practicable, the content of the interpretive displays will draw upon research and documentation carried out as part of the HABS/HAER recordation (Stipulation V.E.) and archeological studies (Stipulation VI) prescribed in this PA. This includes any oral interviews with local residents or individuals possessing special knowledge.
3. Amtrak will submit draft and final outlines, text copy, and exhibition scripts for the interpretive displays to the signatories and concurring parties for review and comment following the steps described in Stipulation XI.

G. Salvage Bridge Components

1. Prior to demolition activities, Amtrak will engage a qualified professional(s) meeting the Secretary of the Interior's *Professional Qualification Standards for Archeology and Historic Preservation* in the disciplines of Architectural History or Historic Architecture to examine the bridge and identify materials recommended for salvage. Examples of appropriate salvage materials include, but are not limited to: part of a deck truss, the swing span pier top with its ring and pinion gear assembly and turning casters, the top layer of granite from the circular pier, the motor and drive assembly, the control house, the dedication

- plaque embedded in an original bridge pier near the Perryville shoreline, and a large dedication plaque mounted into the face of the current westerly abutment.
2. Amtrak will make a reasonable and good-faith effort to ensure standard care is used in removing the materials identified for salvage, transporting them to storage, and securing them from vandalism, theft, and weather, in accordance with all applicable statutes and regulations. If salvage items are found to possess or are judged likely to be contaminated by hazardous material or waste, Amtrak may withdraw the material without making it available for use and handle and dispose of the same in accordance with applicable statutes and regulations. However, Amtrak will not be required to affirmatively certify the condition of salvaged material as safe or appropriate for any particular use.
 3. Amtrak will hold the salvaged material for a period of 12 months from the time it is placed into storage, and make it available free of charge and during reasonable hours. Amtrak will not be responsible for delivering the salvaged material to a party that accepts ownership. At the end of the retention period, Amtrak may sell or dispose of the remaining unused materials in accordance with applicable statutes and regulations. Nothing herein shall be interpreted to require Amtrak to donate material owned by Amtrak in contravention to internal Amtrak policies and procedures relating to the donation or gifting of Amtrak property.
 4. Amtrak will provide for a means of notifying the public as to the availability of the salvaged material. Amtrak will provide all material for salvage on an “as-is, where-is” basis, and will make no warranty as to condition, suitability, serviceability, or degree of contamination for any intended subsequent use. Amtrak will prepare and deliver a written receipt specifying the terms of acceptance of the salvaged material to all recipients for their review and signature. The receipts will become a part of the official Project record. Recipients will be required to indemnify Amtrak and other signatories of this PA against any and all claims arising from the acquisition and use of received salvaged materials.
 5. Amtrak will consult with the signatories and concurring parties on the materials proposed for salvage and the provisions and procedures for notification to the public of the availability of salvage materials following the steps outlined in Stipulation XI. Amtrak will incorporate the same into its final plans and specifications for the removal and staging/storage of the salvaged materials.

VI. TREATMENT MEASURES FOR ARCHEOLOGICAL RESOURCES

- A. Amtrak, in consultation with the signatories and other consulting parties, will identify and assess Project effects on archeological historic properties according to the stipulations and procedures outlined below. Amtrak will initiate the archeological stipulations and complete the stipulations, including mitigation measures, in accordance with the Project phasing and the deadlines established herein. Amtrak will complete mitigation measures as directed by and under the authority of FRA. Amtrak will ensure that no ground-disturbing activities associated with the Project take place in areas subject to archeological investigation until the required fieldwork is completed and reviewed by the MD SHPO and the location is formally released for ground-disturbing activities to commence.
- B. Define Archeological APE
In consultation with FRA and MD SHPO, Amtrak will define the Project APE for archeology (36 CFR § 800.16(d)). The archeological APE will include the Project’s

limits of disturbance, which consists of the area in which ground disturbance is expected to take place, and can include excavation sites, construction staging areas, material disposal sites, temporary access roads, utility and storm water management sites, and off-site mitigation sites. The archeological APE is subject to change as Project plans advance.

C. Supplemental Phase I Survey

1. At such time that Amtrak commences additional phases of engineering design, and subject to available funding, but no later than when funding is available for final design, Amtrak will conduct a Supplemental Phase IA archeological survey to update the initial Phase IA archeological survey completed in August 2014, and to further refine the archeological context, sensitivity, and predictive models for the location of potential sites within the archeological APE.
2. Amtrak will prepare and submit a technical report containing the results of the Supplemental Phase IA archeological survey, together with proposed recommendations and required work plans for Phase IB testing surveys, if any, to FRA for review. Upon FRA's approval, Amtrak will submit the Phase IA report to MD SHPO and other consulting parties for review and comment following the steps described in Stipulation XI.
3. Amtrak will complete one or more Phase IB survey(s), as appropriate, to identify archeological resources.
4. Amtrak will prepare and submit a technical report(s) containing the results of each Phase IB survey, together with proposed recommendations and required work plans for Phase II survey, if any, to FRA for review. Upon FRA's approval, Amtrak will submit the Phase IB report(s) to MD SHPO and other consulting parties, as appropriate, for review and comment following the steps described in Stipulation XI.

D. Phase II Evaluation

1. Amtrak will complete one or more Phase II survey(s), as appropriate, to evaluate the NRHP eligibility of any intact archeological resources that may be affected by the Project.
2. Amtrak will prepare and submit a technical report(s) containing the results of each Phase II survey, together with proposed NRHP eligibility recommendations, to FRA for review. Upon FRA's approval, Amtrak will submit the Phase II report(s) to MD SHPO and other consulting parties, as requested, for review and comment following the steps described in Stipulation XI. The technical document(s) may be combined with the effects assessment as outlined in Stipulation VI.D.3, below.
3. Amtrak will prepare one or more document(s) containing an assessment of Project effects on archeological historic properties according to the criteria of adverse effects (36 CFR § 800.5), and submit the document(s) to FRA for review. Upon FRA's approval, Amtrak will submit the effects assessment document(s) to MD SHPO and other consulting parties, as appropriate, for review and comment following the steps described in Stipulation XI. If FRA, in consultation with the signatories and other consulting parties, determines that an archeological historic property will be adversely affected by the Project, the signatories and other consulting parties, as appropriate, will consult on strategies to avoid, minimize, or mitigate the adverse effect. Examples include, but are not limited to, avoidance, protection, alternative mitigation, or data recovery. The

effects assessment may be combined with the technical report as outlined in Stipulation VI.D.2, above.

4. Amtrak will memorialize the approach and treatment measures to resolve adverse effects to archeological historic properties in a document submitted to the signatories and other consulting parties, as appropriate, for review and comment following the steps described in Stipulation XI.
5. Upon FRA's approval of the approach and treatment measures memorialized in accordance with Section VI.D.4., above, Amtrak will carry out the approved approach and treatment measures.

E. Phase III Data Recovery

1. If an adverse effect cannot be avoided or alternatively mitigated, Amtrak, in consultation with signatories and other consulting parties, will mitigate the adverse effect through a program of data recovery.
2. Amtrak will prepare and submit one or more plan(s) for conducting Phase III data recoveries to the signatories and other consulting parties, as appropriate, for review and comment following the steps described in Stipulation XI. At a minimum, each data recovery plan will include:
 - a) A list of research questions to be addressed, with a discussion of their relevance and importance;
 - b) Methods to be used for fieldwork and laboratory analysis, with a justification of their cost-effectiveness and how they apply to the particular sites and the research questions;
 - c) A schedule for completing field and laboratory work, and submitting draft and final documents for MD SHPO's review and comment;
 - d) Methods to be used in managing and curating artifacts, data, and other records;
 - e) Procedures for evaluating and treating unanticipated discoveries consistent with the provisions of Stipulation VIII;
 - f) A procedure for documenting the completion of fieldwork and releasing sites for construction activities; and
 - g) Provisions for disseminating the research findings to other consulting parties, professional peers, and the general public.
3. Upon FRA's approval of the approach and treatment measures memorialized in accordance with Section VI.E.2., above, Amtrak will execute the Phase III data recovery plan(s).

F. Curation

Amtrak will curate all materials and records resulting from archeological investigations conducted for the Project in accordance with 36 CFR § 79 at the Maryland Archeological Conservation Laboratory (MAC Lab), unless Amtrak cannot obtain clear title, Deed of Gift, or curation agreement for the collection. Amtrak will notify FRA's Federal Preservation Officer in writing regarding any such curation activities. Amtrak will consult with MD SHPO and FRA regarding the appropriate disposition of any materials or records not proposed for curation at the MAC Lab.

G. Protection of Archeologically-Sensitive Information

Amtrak will submit copies of all final archeological documents stipulated in this PA to FRA and MD SHPO. Interim and final archeological reports and related documentation will be distributed to other consulting parties and qualifying agencies only upon request, and in redacted form, as appropriate, in order to ensure the

security of archeological sites.

VII. PROJECT CHANGES

- A. Amtrak will afford the signatories and other consulting parties the opportunity to review and comment on Project changes that are of a nature that could potentially affect historic properties. Amtrak will submit written documentation, including Project plan sheets or sketches showing the modification, a brief explanation why the change is needed, and a plan for any proposed Section 106 work, to the signatories and other consulting parties for review and comment following the steps described in Stipulation XI.
- B. Historic Architecture
1. As needed, and with assistance from FRA and MD SHPO, Amtrak will refine an APE in consultation with the signatories and other consulting parties. Amtrak will conduct an architectural survey to identify historic properties listed in or eligible for listing in the NRHP, and prepare and submit one or more technical document(s) containing the results of the architectural survey, together with the proposed identification of historic properties and recommendations for next steps, if any, to FRA for review. Upon FRA's approval, Amtrak will submit the document(s) to MD SHPO and other consulting parties, as appropriate, for review and comment following the steps described in Stipulation XI.
 2. Amtrak will prepare one or more document(s), containing a proposed assessment of Project effects on architectural historic properties according to the criteria of adverse effects (36 CFR § 800.5), and submit the document(s) to FRA for review. Upon FRA's approval, Amtrak will submit the effects assessment document(s) to MD SHPO and other consulting parties, as appropriate, for review and comment following the steps described in Stipulation XI. If FRA, in consultation with the signatories and other consulting parties, determines that an architectural historic property will be adversely effected by the Project, then the signatories and other consulting parties will consult on strategies to avoid, minimize, or mitigate the adverse effect.
 3. Amtrak will memorialize the approach and treatment measures to resolve adverse effects to architectural historic properties in one or more document(s) submitted to the signatories and other consulting parties, as appropriate, for review and comment following the steps described in Stipulation XI.
 4. Upon FRA's approval of the approach and treatment measures memorialized in accordance with Section VII.B.3., above, Amtrak will carry out the approach and treatment measures.
- C. Archeology
Project modifications with the potential to impact archeological deposits will be addressed pursuant to Stipulation VI.

VIII. UNANTICIPATED DISCOVERIES

- A. Amtrak will develop an Unanticipated Discoveries Plan (UDP) to be included in construction and bidding documents for contractor/team use in the event of unanticipated discoveries. The plan will incorporate a procedure for interacting with the media, a chain of contact, and other relevant provisions, as needed. Amtrak will submit the UDP to the signatories and concurring parties for review and comment following the steps described in Stipulation XI.

- B. In the event any previously unidentified historic architectural or archeological resource is discovered, Amtrak will require the contractor to halt all work that may affect the resource. For any discovered archeological resources, Amtrak will also halt work in surrounding areas where additional subsurface remains can reasonably be expected to be present. Work in all other areas of the Project may continue.
- C. Amtrak will notify the signatories and other consulting parties, and FRA will notify appropriate federally recognized Native American tribes, if appropriate, within 48 hours of the discovery (36 CFR § 800.13(b)(3)). As needed, FRA will also identify and invite additional consulting parties to confer on unanticipated discoveries.
- D. Amtrak, in consultation with the signatories and other consulting parties, will investigate the discovery site and resource(s) according to the professional standards and guidelines contained in Stipulation IV. Amtrak will prepare and submit a written document containing a proposed determination of NRHP eligibility of the resource, an assessment of project effects on historic properties, if appropriate, and any recommended treatment measures to FRA for review. Upon FRA's approval, Amtrak will submit the determination of NRHP eligibility, effects assessment, and/or recommended treatment measures document, if appropriate, to MD SHPO and other consulting parties, as appropriate, for review and comment. If the potential resource is associated with Native American prehistory or history, FRA will provide the documentation to federally recognized Native American tribes within five 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.
- E. If it is necessary to develop treatment measures in accordance with Stipulation VIII.D., above, Amtrak will carry out the approach and treatment measures after approval by FRA.
- F. Amtrak will ensure construction work within the affected area does not proceed until FRA, in consultation with MD SHPO and federally recognized Native American tribes, as appropriate, determines that either 1) the located resource is not NRHP-eligible or 2) the agreed upon treatment measures for historic properties have been implemented.

IX. TREATMENT OF HUMAN REMAINS

- A. If human remains are encountered during archeological investigations or construction, Amtrak will require the contractor to immediately halt subsurface disturbance in that portion of the Project area and immediately secure and protect the human remains and any associated funerary objects in place in such a way that minimizes further exposure or damage to the remains from the elements, looting, and/or vandalism.
- B. Amtrak will immediately notify the appropriate Police Department to determine if the discovery is subject to a criminal investigation by law enforcement, and notify the signatories within 24 hours of the initial discovery.
- C. If a criminal investigation is not appropriate, Amtrak will apply and implement all relevant laws, procedures, policies, and guidelines contained in Stipulation IV.B

concerning the treatment and repatriation of burial sites, human remains, and funerary objects.

- D. In the event the human remains encountered could be of Native American origin, whether prehistoric or historic, FRA will immediately notify the appropriate federally recognized Native American tribes and the Maryland Commission on Indian Affairs (MCIA), and consult with them and MD SHPO to determine the treatment plan for the Native American human remains and any associated funerary objects.
- E. If the remains are not of Native American origin, Amtrak will, as appropriate, develop a research design/treatment plan for the appropriate treatment of the remains and any associated artifacts, consistent with procedures and guidelines contained in Stipulation IV.B. and submit the design and plan for review and comment by the signatories and other consulting parties following the steps described in Stipulation XI.
- F. Amtrak will ensure the contractor will not proceed with work in the affected area until FRA, in consultation with MD SHPO and federally recognized Native American tribes, as appropriate, determines the development and implementation of an appropriate research design/treatment plan or other recommended mitigation measures are completed. However, work outside the area may continue.

X. EMERGENCY SITUATIONS

- A. Should an emergency situation occur that represents an imminent threat to public health or safety, or creates a hazardous condition and has the potential to affect historic properties, Amtrak will contact the appropriate Police Department, as needed, as soon as possible and notify the signatories and other consulting parties within 24 hours of the condition which created the emergency, the immediate action taken in response to the emergency, the effects of the response to historic properties, and, where appropriate, further plans to address the emergency. This will include any further proposals to avoid, minimize, or mitigate potential adverse effects to historic properties.
- B. The signatories and other consulting parties will have seven days to review and comment on the plan(s) for further action. If FRA, MD SHPO, and other consulting parties do not object to the plan within the review period, then Amtrak will implement the proposed plan(s).
- C. Where possible, Amtrak will ensure that emergency responses allow for future preservation or restoration of historic properties, take into account the *SOI Standards for the Treatment of Historic Properties*, and include on-site monitoring by the appropriate qualified professional as contained in Stipulation IV.
- D. Immediate rescue and salvage operations conducted to preserve life or property are exempt from these and all other provisions of this PA.

XI. DOCUMENT REVIEW

- A. Unless otherwise stated elsewhere in this PA, the signatories, other consulting parties, and/or concurring parties will provide comments on the documents they review to either FRA or Amtrak, as appropriate, and as set forth herein.

- B. The signatories, other consulting parties, and/or concurring parties will have up to 30 calendar days from the date of receipt to review and provide written comments to FRA or Amtrak on documents stipulated in this PA.
- C. FRA and/or Amtrak will consider and incorporate any written comments received within the timeframe, as appropriate, into the documentation.
- D. If the signatories, other consulting parties, and/or concurring parties do not submit written comments to FRA and/or Amtrak within 30 calendar days of receipt of any document, it is understood the non-responding parties have no comments on the submittal.
- E. If the signatories, other consulting parties, and/or concurring parties object to or recommend extensive revisions to submissions stipulated in the PA, FRA and/or Amtrak will work expeditiously to respond to the recommendations and resolve disputes.
- F. If FRA and/or Amtrak cannot resolve the disputes, and if further consultation with the signatories, other consulting parties, and/or concurring parties is deemed unproductive by any party, the parties will adhere to the dispute resolution procedures detailed under Stipulation XV, below.
- G. The signatories, other consulting parties, and/or concurring parties acknowledge the timeframes set forth in this PA will be the maximum allowed under normal circumstances. In exigent circumstances (e.g., concerns over construction suspensions or delays), all parties agree to expedite their respective document review and dispute resolution obligations.

XII. COMMUNICATIONS

Either paper or electronic mail (email) will serve as the official method of correspondence for all communications regarding this PA and its provisions. **Attachment 5** contains a list of signatories, consulting parties, and concurring parties with contact information. Contact information may be updated, as needed, without an amendment to this PA. It is the responsibility of each signatory, consulting party, and/or concurring party to immediately inform FRA and Amtrak of any change in name or contact information for any point of contact. Amtrak will forward this information to the other signatories and consulting parties by email.

XIII. ANTI-DEFICIENCY ACT

FRA's obligations under this PA are subject to the availability of appropriated funds, and the stipulations of this PA are subject to the provisions of the Anti-Deficiency Act (31 U.S.C. § 1341 et seq.). FRA will make reasonable and good faith efforts to secure the necessary funds to implement this PA in its entirety. If compliance with the Anti-Deficiency Act alters or impairs FRA's ability to implement the stipulations of this agreement, or if another federal agency does not assume responsibility as lead federal agency, signatories will consult in accordance with the amendment or termination procedures found in Stipulations XVI and XVII of this PA.

XIV. ADOPTABILITY

In the event that another federal agency not initially a party to the PA receives an application for a license, permit, or funding for the Project as described in this PA, that

agency may fulfill its Section 106 responsibilities by stating in writing it concurs with the terms of this PA and notifying the signatories that it intends to do so. Such an agreement will be evidenced by an amendment to this PA, which must be filed with ACHP, that describes the roles and responsibilities of the new signatory and affirms the party's concurrence with the terms of the PA.

XV. DISPUTE RESOLUTION

- A. In the event any signatory, consulting party, and/or concurring party to this PA objects in writing to any actions proposed or the manner in which the terms of this PA are implemented, FRA will consult with the objecting party and other signatories, other consulting parties, and/or concurring parties as appropriate, within 30 calendar days to resolve the objection. If FRA determines that such objection cannot be resolved, FRA will proceed as set forth herein.
- B. FRA will forward all documentation relevant to the dispute, including FRA's proposed resolution, to the ACHP within 15 calendar days of the determination and request that the ACHP provide FRA with its advice on the resolution of the objection within 30 calendar days of receiving the documentation. Concurrently, FRA will also provide the signatories, other consulting parties, and/or concurring parties with the same documentation for review and comment following the steps described in Stipulation XI. FRA will prepare a written response to the objection, which will constitute FRA's decision regarding the objection, that takes into account any timely advice or comments regarding the dispute from the ACHP, signatories, other consulting parties, and/or concurring parties, and provide them with a copy of the written response. FRA will then proceed according to its decision.
- C. If the ACHP does not provide its advice regarding the dispute within the thirty (30) calendar day time period, FRA may make a decision on the dispute and proceed accordingly. FRA will document its decision in a written response to the objection that takes into account any timely comments regarding the dispute from the signatories, other consulting parties, and/or concurring parties and provide the ACHP, signatories, other consulting parties, and/or concurring parties with a copy of such written response.
- D. Should disputes arise under exigent circumstances (e.g., concerns over construction suspensions or delays), all parties agree to expedite their respective document review and dispute resolution obligations.
- E. The signatories remain responsible for carrying out all other actions subject to the terms of this PA that are not the subject of the dispute.

XVI. AMENDMENTS

Any signatory to this PA may request that it be amended, whereupon that party will immediately consult with the other signatories within 30 calendar days (or another time period agreed to by all signatories) to consider such an amendment. FRA will be responsible for developing and executing any resulting amendment among the signatories in the same manner as the original PA. The amendment will be effective on the date FRA files a copy signed by all signatories with the ACHP.

XVII. TERMINATION

- A. If any signatory to this PA determines its terms will not or cannot be carried out, that party will immediately consult with the other signatories to attempt to develop an amendment per Stipulation XVI. If within 30 calendar days (or another time period agreed to by all signatories) an amendment cannot be reached, any signatory may terminate the PA upon written notification to the other signatories.
- B. If the PA is terminated, then, prior to work continuing on the Project, FRA must either, 1) execute a new Memorandum of Agreement or PA (36 CFR § 800.6(c) or 800.14(b)) or 2) request, take into account, and respond to the comments of the ACHP under 36 CFR § 800.7. FRA will notify the signatories and other consulting parties as to the course of action it will pursue.

XVIII. MONITORING AND REPORTING

- A. Each year, following the effective date of this PA until it expires or is terminated, Amtrak will provide the signatories, other consulting parties, and/or concurring parties a summary report detailing work undertaken and any tasks completed pursuant to its terms. This includes activities necessary to advance the Project toward and/or through construction. Such a report will include any scheduling changes proposed, problems encountered, and disputes and their resolution in the signatories' efforts to carry out the terms of this PA.
- B. Ten business days before commencing any activity necessary to advance the Project toward and/or through construction, Amtrak will provide FRA notice of the activity and any actions to be taken in accordance with this PA.

XIX. EXECUTION AND EFFECTIVE DATE

This PA will go into effect on the date FRA signs the document, which will be the final signature among all the signatories. Execution of this PA by the signatories, its subsequent filing with the ACHP, and implementation of its terms demonstrate FRA has taken into account the effect of the Project on historic properties and afforded the ACHP an opportunity to comment.

XX. DURATION

This PA will expire when all its stipulations have been completed or in 10 years from the effective date, whichever comes first, unless the signatories agree in writing to an extension using the amendment stipulation (Stipulation XVI) herein.

SIGNATORIES

Federal Railroad Administration
Maryland State Historic Preservation Officer

INVITED SIGNATORY

National Railroad Passenger Corporation

CONCURRING PARTIES (TO BE INVITED)

Maryland Department of Transportation
Maryland Transit Administration
Town of Perryville, Maryland
City of Havre de Grace, Maryland

SIGNATORY

FEDERAL RAILROAD ADMINISTRATION

By: _____
[insert agency official name and title]

Date _____

SIGNATORY

MARYLAND STATE HISTORIC PRESERVATION OFFICER

By: _____
[insert agency official name and title]

Date _____

INVITED SIGNATORY

National Railroad Passenger Corporation

By: _____
[insert agency official name and title]

Date _____

CONCURRING PARTY

Maryland Department of Transportation

By: _____
[insert agency official name and title]

Date _____

CONCURRING PARTY

Maryland Transit Administration

By: _____
[insert agency official name and title]

Date _____

CONCURRING PARTY

Town of Perryville

By: _____
[insert official name and title]

Date _____

CONCURRING PARTY

City of Havre de Grace

By: _____
[insert official name and title]

Date _____