Chapter 3: Transportation

A. INTRODUCTION AND METHODOLOGY

This chapter assesses the potential benefits and impacts of the Proposed Project on transportation conditions in the project area compared with the No Action Alternative. This transportation analysis also includes a discussion of the current and future regional transportation infrastructure, including intercity rail (Northeast Regional, long distance, Acela, and future high-speed rail), commuter rail, bus service, freight service, navigable waters, and the roadway system. For planning purposes and in anticipation of future increased capacity along the NEC, the passenger rail analysis (including intercity and commuter rail) assumes implementation of the Preferred Alternative from the NEC FUTURE Tier I Final EIS in the 2040 Build condition.[1] The Proposed Project would be consistent with the service goals considered in the NEC FUTURE Tier 1 FEIS Preferred Alternative along this section of the NEC. It is important to note that the analysis is based on rail traffic volumes that would not result solely from the Proposed Project, but represent the sum of proposed enhancements all along the Northeast Corridor (NEC) that enable the service levels assumed by NEC FUTURE. The Federal Railroad Administration's (FRA) *Procedures for Considering Environmental Impacts* (64 Federal Register [FR] 28545 [May 26, 1999]) states that a transportation assessment should consider all modes of transportation, including bicycle and pedestrian modes. The non-motorized transportation network in the study area, consisting of trails and greenways, is discussed in Chapter 6, "Parks and Recreational Resources." Construction period impacts to transportation in the project area and overall region are documented in Chapter 19, "Construction Effects." As discussed in Chapter 2, "Project Alternatives," this Environmental Assessment (EA) evaluates two Build Alternatives: Alternative 9A and Alternative 9B. Alternative 9A was selected as the Preferred Alternative.

B. AFFECTED ENVIRONMENT

INTERCITY RAIL

The NEC is the most heavily used passenger rail line in North America, both in terms of ridership and service frequency, and one of the most frequently traveled rail corridors in the world.[2,3] The NEC is a 457-mile rail transportation system extending from Boston's South Station to

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[1] FRA, NEC FUTURE Tier I Final EIS, December 2016. NEC FUTURE is not an approved project as of this writing.

[2] https://www.amtrak.com/ccurl/998/601/Amtrak-National-Fact-Sheet-FY2015.pdf, accessed April 22, 2016.

[3] Source: BGL Rail Associates, for the Amtrak Reform Council, "A Recommended Approach to Funding the Estimated Capital Investment Needs of the Northeast Corridor Rail Infrastructure," April 2002.

Washington D.C.'s Union Station. In 2011, the U.S. Department of Transportation (USDOT) designated the NEC as a high-speed rail corridor.

As stated in Chapter 1, "Purpose and Need," the NEC is a key component of the Northeast region's transportation system. It is vital to the sustained economic growth of the region, which includes the economic and political centers of the United States—Boston, New York, Philadelphia, Baltimore, and Washington, D.C.—all of which are connected by the NEC. Increasing congestion and capacity constraints on the region's interstate highways affect commuters, intercity travelers, and the delivery of goods to and from the region, resulting in the growing popularity of rail as an attractive mode of passenger and freight transportation.

Table 3-1 presents existing train traffic over the Susquehanna River Rail Bridge.

Table 3-1
Existing Volumes Across the Susquehanna River Rail Bridge (Average Weekday)

Types of Service		Current Utilization (2015)	
		Daily	**Peak***
Amtrak Intercity	Northeast Regional and Long Distance	57	7
	Acela	32	2
MARC Commuter		18	3
NS Freight		8	2
TOTAL		**116**	

Notes: * "Peak" is defined as 4:10-5:10 PM weekdays for Amtrak, and 5:40-6:40 AM and 6:20-7:20 PM weekdays for MARC. For freight, the timing of the peak hour varies but it generally occurs at night.
Based on 2016 data, considered to be representative of the existing condition.

Source: Service volumes provided by Amtrak.

FREIGHT SERVICE

Norfolk Southern Railway (NS) operates freight service throughout the eastern United States and has rights to run freight trains along the NEC in the study area, including over the Susquehanna River Rail Bridge. NS operates approximately eight trains per day across the bridge moving between the NS Port Road Branch[4] and the Port of Baltimore. Approximately six NS trains per day do not cross bridge, instead traveling north between the NS Port Road Branch and the Port of Wilmington. In addition, CSX Corporation (CSX) operates freight service on a separate structure, the CSX Susquehanna River Rail Bridge, approximately 0.9 mile northwest of the Amtrak Susquehanna River Rail Bridge. CSX has rights to use the Amtrak Susquehanna River Rail Bridge in the event of failure or closure of its own structure. See Figure 1-4 for a map of rail and other transportation routes in the project area. Freight operations across the Amtrak Susquehanna River Rail Bridge are currently limited to 30 miles per hour (mph).

[4] The NS Port Road Branch connects with the Amtrak NEC via a "WYE" connection at Perry interlocking, just north of the Susquehanna River Bridge. This connection allows freight to move between the Harrisburg, Pennsylvania area and locations north and south of Perryville.

PUBLIC TRANSPORTATION

COMMUTER RAIL SERVICE

As stated in Chapter 1, "Purpose and Need," Maryland Area Regional Commuter (MARC) is a 202-mile, 42-station commuter rail system. MARC rail service connects Cecil County, MD; Baltimore, MD; Washington D.C.; Brunswick, MD; Frederick, MD; and Martinsburg, WV. The Penn Line has the greatest ridership of MARC's three lines (average weekday ridership of 23,430 in 2015)[5] and runs from Washington Union Station over the Susquehanna River Rail Bridge to Perryville, MD. MARC currently operates 18 trains over the bridge each weekday, including three trains during the peak hour. There is currently no weekend service to Perryville. MARC tickets are honored on certain Amtrak trains; however, only one daily Amtrak train services Perryville MARC Station.

BUS SERVICE

Bus service in the study area consists of local transit services provided by Harford County, MD and Cecil County and a commuter bus line to Baltimore provided by the Maryland Transit Administration (MTA). Harford County Transit provides service to and within Havre de Grace and serves Perryville.[6] Cecil County provides a "Perryville Connection" bus which provides service within Perryville and connects to the nearby towns of North East and Elkton. There is also a countywide door-to-door transit service, the C.T. Cruiser, which is available to all residents and must be scheduled in advance.[7] Commuter bus service from Havre de Grace into Downtown Baltimore is provided by MTA via its Route 420.[8]

TRANSPORTATION FOR THE ELDERLY AND DISABLED

FRA's *Procedures for Considering Environmental Impacts* require that an environmental analysis assess impacts on transportation and general mobility of the elderly and disabled. In the study area, transportation options for the disabled are provided by Harford and Cecil Counties.[1,2] Both counties provide curb-to-curb paratransit services by appointment. Additionally, the "Perryville Connection" bus, discussed above, will deviate up to 0.75 mile for functionally disabled passengers.[2] The Perryville MARC Station is equipped with a wheelchair lift to ensure accessibility by disabled passengers. MARC and Amtrak trains are designed to accommodate most wheeled mobility devices in use today, as required by the Americans with Disabilities Act.

NAVIGABLE WATERS

The existing Susquehanna River Rail Bridge is located at Susquehanna River Mile 1.0. The movable swing span is located over the twin navigation channels and provides a 52-foot vertical clearance above mean high water (MHW) in the closed position and a 127-foot vertical

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[5] Maryland Open Data Portal, https://data.maryland.gov/Transportation/MTA-Average-Weekday-Ridership-by-Month/ub96-xxqw/data, accessed 10/27/2016.

[6] Harford County Transit. http://www.harfordcountymd.gov/services/transportation/, accessed 12/22/2014.

[7] Cecil County Community Transit. http://www.ccgov.org/dept_aging/communitytransit.cfm, accessed 12/22/2014.

[8] MTA Commuter Bus. http://mta.maryland.gov/commuter-bus, accessed 12/22/2014.

clearance in the open position, limited by overhead electric transmission lines. The horizontal clearance is 100 feet in each of the two navigation channels.

In the vicinity of the project site, the Susquehanna River is technically navigable up to the Conowingo Hydroelectric Dam, at approximately River Mile 9.9; however, parts of the river south of the dam are too shallow to navigate with larger vessels, with depths of less than 10 feet north of Port Deposit (approximately River Mile 5.0).[9] **Table 3-2** lists those bridges that cross the navigable portion of the Susquehanna River. The Susquehanna River Rail Bridge typically opens fewer than 10 times per year to accommodate marine traffic requiring vertical clearance greater than 52 feet.

Table 3-2
Susquehanna River Bridges South of the Conowingo Dam

Bridge Name	Location (Miles from Mouth of River)	Bridge Type	Vertical Clearance		Horizontal Clearance (ft)
			Open* (ft)	Closed (ft)	
Susquehanna River Rail Bridge	1.0	Swing Rail Bridge	127	52	100
Thomas J. Hatem Memorial Bridge	1.5	Fixed Auto Bridge (Rt. 40)	87		320
CSX Susquehanna River Rail Bridge	1.9	Fixed Rail Bridge	85		500
Millard E. Tydings Memorial Bridge	3.2	Fixed Auto Bridge (I-95)	90		119-245

Sources: National Oceanic and Atmospheric Administration (NOAA). *Chart 12274: Head of Chesapeake Bay* [map]. "Office of Coast Survey." Last updated November 2014. http://www.charts.noaa.gov/OnLineViewer/12274.shtml (accessed February 4, 2015).
HNTB Corporation. Susquehanna River Bridge Reconstruction and Expansion Project Navigation Study, dated January 21, 2014.

To assess current navigation conditions in this stretch of the Susquehanna River, Amtrak conducted a Navigation Study in 2013.[10] The study focused on vessels greater than 50 feet in height. The required vertical clearance for a marine vessel depends upon the size and weight of the vessel and the tide conditions. Commercial vessels typically require the most vertical clearance when traveling empty at high tide, and the least vertical clearance when traveling fully loaded at low tide. Currently, in accordance with federal law (33 CFR 117.575), Amtrak opens the Susquehanna River Rail Bridge on signal if notice is provided at least 24 hours in advance.

[9] NOAA Office of Coast Survey, Navigational Chart 12274.
http://www.charts.noaa.gov/OnLineViewer/12274.shtml, accessed 3/8/2016.
[10] Susquehanna River Bridge Reconstruction and Expansion Project Navigation Study, dated January 21, 2014, HNTB Corporation.

In practice, local marinas and commercial users provide up to several days' notice to Amtrak when the need arises for a navigation span opening.

Coordination with U.S. Coast Guard, as a Cooperating Agency, has been ongoing, as detailed in Chapter 20, "Coordination and Consultation" and in **Appendix H**, "Public Involvement and Agency Correspondence." The Coast Guard has been involved in the approval of every project milestone, and has provided input for the Navigation Study. The Navigation Study determined that many of the bridge openings are related to transporting barge cranes for rehabilitation of the existing upstream structures. Some of the bridge openings are for recreational boating. Most tall vessels (greater than 50 feet in height) in the study area are docked at downstream marinas during the boating season. Many of the upstream marine facilities are not limited by the existing bridge's vertical clearance since they: (1) are winter storage facilities that request a group bridge opening once per season; (2) do not store boats taller than can be accommodated by the existing vertical clearance; or (3) are exclusively boat launches and are limited by upland road and bridge clearances. The Navigation Study identified one vessel, the skipjack Martha Lewis, which is currently undergoing a restoration and is expected to be 65 feet in height upon completion; however, this vessel rarely travels upstream. The Navigation Study concluded that the existing navigation channels (both height and width) address the needs of most mariners and vessels.

REGIONAL HIGHWAY SYSTEM

As shown in **Table 3-2**, two regional highways cross over the Susquehanna River in the vicinity of the Susquehanna River Rail Bridge. The Pulaski Highway (U.S. Route 40) traverses the recently renovated Thomas J. Hatem Memorial Bridge, located 0.5 miles from the Susquehanna River Rail Bridge. The John F. Kennedy Memorial Highway (I-95) utilizes the Millard E. Tydings Memorial Bridge, located 2.0 miles north of the Susquehanna River Rail Bridge. The two highways run roughly parallel to each other and to the Chesapeake Bay shoreline between Baltimore and Wilmington, with I-95 providing limited-access highway service, and U.S. Route 40 providing local service to towns along the corridor. See Figure 1-4 for a map of regional highways and other transportation routes in the project area.

LOCAL ROADWAYS

Several existing local roads cross the NEC within the study area, representing a mix of ownership between the State Highway Administration (SHA), the counties, the municipalities, and other public owners (see **Figure 3-1** for a map of these road crossings). In Havre de Grace, Lewis Lane (local/Harford County) and Post Road/Revolution Street (SHA) pass over the NEC, while N. Juniata Street, N. Adams Street, Centennial Lane, N. Stokes Street, N. Freedom Lane (all local/Harford County roads), and N. Union Avenue (SHA) cross underneath the NEC. In Perryville, Avenue A[11] (part of the Perry Point Veterans Administration [VA] Medical Center) and two Amtrak access roads cross beneath the NEC.[12] Broad Street (SHA) crosses below the north and south wye tracks, which connect the NEC to the NS Port Road Branch. Ikea Road (SHA) crosses over the NEC in Perryville, as do several roadways which are not publicly accessible, including the three Amtrak-owned former Philadelphia, Wilmington and Baltimore

[11]Avenue A becomes Broad Street/Route 7 directly beneath the Susquehanna River Rail Bridge overpass.

[12]Final Feasibility Report: Susquehanna River Rail Bridge Project. Prepared by HNTB Corporation for Amtrak, January 30, 2015.

Legend

Susquehanna River Rail Bridge Overpasses

1. Lewis Run Undergrade Culvert 61.72
2. Lewis Lane Overhead Bridge 61.35
3. Lily Run Undergrade Culvert 60.85
4. North Juniata Street Undergrade Bridge 60.77
5. North Adams Street Undergrade Bridge 60.69
6. Centennial Lane Undergrade Culvert 60.61
7. North Stokes Street Undergrade Bridge 60.56
8. North Freedom Lane Undergrade Culvert 60.51
9. Amtrak access road Undergrade 59.52
10. Broad Street Undergrade Bridge - South Wye Track
11. Perryville Train Station Overpass (Amtrak Access Road Undergrade 59.39)
12. Mill Creek Undergrade Bridge 59.00
13. Coudon Road South Overhead Bridge 58.34
14. Coudon Road North Overhead Bridge 57.85
15. Chesapeake View Road Overhead Bridge 57.60

Data Sources

Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

N

0 1,300 2,600 Feet

Susquehanna River Rail Bridge Project

Figure 3-1
Undergrade and Overhead Bridges in the Project Area

Railroad (PW&B) overpasses. One of the PW&B bridges (at Chesapeake View Road) is used by golf carts on the Furnace Bay Golf Course, while the other two (at Coudon Road North and Coudon Road South) are disused.[13]

C. NO ACTION ALTERNATIVE

As discussed in Chapter 2, "Project Alternatives," the No Action Alternative assumes the Susquehanna River Rail Bridge will remain in service as-is, with no intervention besides minimal repairs and continuation of the current maintenance regime. Service over the bridge is already speed-restricted to 90 mph due to the age and deteriorated condition of the bridge, and would continue to worsen in the future under the No Action Alternative, potentially requiring stricter speed and weight restrictions that will further impact the movement of passengers and freight. Cost associated with bridge maintenance would continue to increase over time. The bridge would continue to age, problems would occur more frequently, and the bridge would remain as a bottleneck; it would eventually need to be taken out of service. Without the bridge, local, regional and national rail networks would be disrupted with resultant detrimental effects on the economic activity.

A number of transportation projects are planned within the study area and would be developed by 2040 under the No Action Alternative. These projects are described in Chapter 2, "Project Alternatives," and they include Amtrak's ongoing state of good repair work and service improvements; components of MTA's *MARC Growth and Investment Plan*; and MTA's MARC Northeast Maintenance Facility. The MARC Northeast Maintenance Facility would entail construction of a new operation, maintenance, and storage facility located on a 115-acre site in Perryville, adjacent to the NEC. The Federal Transit Administration (FTA) issued a Finding of No Significant Impact to conclude the NEPA review for this project, but MTA currently lacks funding for final design, right of way acquisition or construction. This EA nevertheless assumes that the project would be completed by 2040. Projects that would be developed after 2040 are discussed in Chapter 18, "Indirect and Cumulative Effects." **Table 3-3** summarizes the expected train traffic across the Susquehanna River Rail Bridge in 2040.

In 2040 with the No Action Alternative, a new high-speed rail category replaces today's Acela service, filling a similar role but with faster speeds and various other enhancements. MARC plans to phase out electric locomotives and move to an all-diesel fleet. Currently, 10 out of 18 daily MARC trains across the bridge are electric. The overall number of MARC trains crossing the Susquehanna River Rail Bridge with the No Action Alternative is projected to decrease to 14 by 2040, assuming the implementation of the MARC Northeast Maintenance Facility. The Maintenance Facility project will eliminate the need to run deadhead trains north over the bridge in the morning and south over the bridge in the evening.

This Environmental Assessment (EA) assumes that freight rail traffic across the Susquehanna River Rail Bridge will increase modestly as a result of additional rail traffic to and from several regional refineries that are expanding their operations. NS does not have any plans in place to increase traffic; rather, the expectation of increased traffic is an assumption based on a generally accepted 1.5 percent annual rate of typical growth in freight rail. Approximately 10 freight trains

[13] "National Historic Preservation Act Section 106 Consultation for MARC Maintenance and Layover Facility, Perryville, Cecil County, Maryland Cultural Resources Management Report: Above-Ground Historic Properties." Prepared by URS Corporation for MTA, February 2014.

per day will cross the bridge en route to Baltimore. The EA further assumes that traffic on local and regional roadways and highways, as well as bus and paratransit ridership will increase naturally due to growth in the regional population. Under the No Action Alternative, navigational traffic near the Susquehanna River Rail Bridge is expected to remain steady.

Table 3-3
Projected 2040 Volumes Across the Susquehanna River Rail Bridge Without the Proposed Project (Average Weekday)

Types of Service		Projected Utilization (2040) Daily	Peak*
Amtrak Intercity	Northeast Regional and Long Distance	58	4
	High-Speed Rail	44	4
MARC Commuter		14	3
NS Freight		10	2
TOTAL		**126**	

Notes: * "Peak" is defined as 4:10-5:10 PM weekdays for Amtrak, and 5:40-6:40 AM and 6:20-7:20 PM weekdays for MARC. For freight, the timing of the peak hour varies but it generally occurs at night.

Source: Service volumes provided by Amtrak, MDOT and FRA, November 2015.

D. POTENTIAL IMPACTS OF THE BUILD ALTERNATIVES

This section discusses the potential impacts to transportation from the Proposed Project. The Proposed Project would enhance the reliability of the Susquehanna River Rail Bridge and thereby provide benefits to Amtrak service, MARC service, freight operations and marine traffic. **Table 3-4** summarizes the expected train traffic across the Susquehanna River Rail Bridge in 2040. As noted earlier in this chapter, rail traffic volumes presented here do not result solely from the Proposed Project, but represent the sum of proposed enhancements all along the NEC which enable the service levels assumed by the NEC FUTURE Preferred Alternative. [14]

INTERCITY RAIL

The Proposed Project will cause no adverse impacts to intercity rail operations, and, in fact, could offer benefits to rail passengers. The Proposed Project involves construction of two fixed (non-movable) replacement bridges that would be used for rail service. Design speeds over the new bridges would be 90 mph on the new west bridge (Alternatives 9A and Alternative 9B), and either up to 160 mph (Alternative 9A) or 150 mph (Alternative 9B) on the new high-speed bridge, which would be built on the approximate alignment of the existing bridge. As design progresses, speeds up to 100 mph could be provided on the new west bridge. The Proposed Project would eliminate bridge malfunctions resulting from the opening of the existing movable span. This would improve the reliability of the Susquehanna River Rail Bridge and increase speed and capacity over the river. The Proposed Project would remove the bottleneck caused by the existing bridge and would reduce unscheduled train delays, thereby improving service. FRA

[14] NEC FUTURE forecasts are being used as a reasonable assumption but do not represent an approved project, nor are these numbers included in the No Action Alternative.

expects traffic across the river to increase by 2040, including the addition of high-speed rail and a new metropolitan service (envisioned as an intermediate-level service between high-speed rail and existing Northeast Regional service), as shown in **Table 3-4**. Projections indicate more than double the total number of peak period trips over the No Action Alternative, from 102 trips without the Proposed Project, to 222 trips with the Proposed Project.

Table 3-4
Projected 2040 Volumes Across the Susquehanna River Rail Bridge With the Proposed Project and Enhancements Along the NEC (Average Weekday)

Types of Service		Projected Utilization (2040) Daily	Peak*
Amtrak Intercity	Northeast Regional and Long Distance	48	4
	High-Speed Rail	82	8
	Metropolitan Service	92	8
MARC Commuter		44	3
NS Freight		12	2
TOTAL		**278**	

Notes: * "Peak" is defined as 4:10-5:10 PM weekdays for Amtrak. For MARC the daily peak occurs 5:40-6:40 AM. For freight, the timing of the peak hour varies but it generally occurs at night.

Source: Service volumes provided by Amtrak, MDOT and FRA, November 2015.

FREIGHT SERVICE

Improved reliability, speed, and capacity afforded by the Proposed Project would result in an overall benefit to freight service, with no adverse impacts projected. Future projections with the Proposed Project indicate an approximate daily increase of two freight trains over the No Action Alternative; both additional trains would traverse the bridge moving between the NS Port Road Branch and Baltimore. The Proposed Project would eliminate bridge malfunctions resulting from the opening of the existing movable span. This would improve the reliability of the bridge and increase speed and capacity, resulting in a long-term benefit to freight rail service. Connections between the NEC and NS Port Road Branch would remain via the wye track, which would be slightly realigned.

The Proposed Project has been designed so as not to preclude construction of the proposed Chesapeake Connector project on the eastern edge of the project limits, which would alleviate a freight rail bottleneck by adding a third track between Perryville and North East, MD.

PUBLIC TRANSPORTATION

COMMUTER RAIL SERVICE

No adverse impacts to commuter rail operations would result from the Proposed Project. The Proposed Project would improve the reliability of the Susquehanna River Rail Bridge and increase speed and capacity, thereby improving the reliability of MARC service to Perryville. MARC is studying the extension of service northward beyond Perryville for eventual

connections to Southeastern Pennsylvania Transportation Authority (SEPTA) service, presumably at the current SEPTA terminus in Newark, Delaware.[15] This EA assumes that such extensions would not occur until after the Susquehanna River Rail Bridge Project. With the extension in place, service would likely increase to 44 daily MARC trains across the river by 2040. The Project Team will coordinate the final design and construction of the Proposed Project with the MARC Northeast Maintenance Facility project, located on the eastern edge of the project limits.

BUS SERVICE

As described below under "Local Roadways," there would be no adverse impacts to the local street network upon which bus service relies. Additionally, the Proposed Project would not affect any bus depots or stations. Therefore, no impacts to bus service would result from operation of the Proposed Project.

TRANSPORTATION FOR THE ELDERLY AND DISABLED

No impacts to paratransit service would result from operation of the Proposed Project. As described below under "Local Roadways," there would be no adverse impacts to the local street network upon which paratransit service relies. Additionally, the Proposed Project would not affect any depots where paratransit vehicles are stored or maintained.

NAVIGABLE WATERS

No significant adverse impacts to navigation would result from the Proposed Project. Under either Alternative 9A or Alternative 9B, the Proposed Project would provide a 60-foot vertical clearance and, at minimum, a 230-foot horizontal clearance. This would provide sufficient vertical clearance while widening the horizontal clearance. A wider horizontal clearance would improve safety by reducing the potential for conflicts between the rail bridge and marine traffic. The Proposed Project would also eliminate the need for bridge openings and closings by replacing the Susquehanna River Rail Bridge as two high-level fixed bridges. This would constitute an improvement to navigation along this segment of the Susquehanna River.

The Navigation Study described earlier in this chapter recommended that bridge design consider a 60-foot vertical clearance. While a 60-foot clearance may limit taller vessels, such as the aforementioned skipjack Martha Lewis (expected to be 65 feet in height upon completion), from traveling upstream of the bridge, it would allow for the bridge to be designed at a lower grade that would not affect freight rail operations, since heavy freight trains typically require lower grades. Furthermore, conceptual design has indicated that a 60-foot clearance would help reduce the need for right-of-way acquisitions and other potential community impacts as compared with bridge designs providing a higher vertical clearance.

The Navigation Study also determined that, while the existing horizontal clearance is sufficient, further widening of the horizontal clearance could increase sight distance, reduce vessel congestion, and aid tug boat and barge navigation through the bridge opening, increasing safety and resilience against potential bridge and fender system strikes by boats. The conditions of the USCG bridge permit, when received, will finalize the legal navigation clearances for a new or reconstructed bridge.

[15] "MARC Growth and Investment Plan Update 2013-2050", dated September 9, 2013, MTA.

REGIONAL HIGHWAY SYSTEM

Impacts to the regional highway system from the Proposed Project would be largely beneficial, with no adverse impacts projected. The Proposed Project has the potential to reduce future vehicle miles traveled (VMT) regionally when compared with the No Action Alternative. This is described further in Chapter 18, "Indirect and Cumulative Effects." This VMT reduction would constitute a benefit to regional highways, which would experience lower congestion levels as a result of reduced VMT, as well as less wear and tear on road surfaces.

LOCAL ROADWAYS

TRAFFIC

While the Proposed Project does not include any additional service to or from Perryville station, FRA and MDOT anticipate there being additional MARC service to Perryville as a result of a number of proposed enhancements along the NEC. The combined effect of these various improvements would be to more than triple service from 14 daily trains under the No Action Alternative to 44 daily trains in the 2040 Build Condition. The potential for additional MARC service is further discussed in Chapter 18, "Indirect and Cumulative Effects." While on a regional level, VMT would decrease as a result of the Proposed Project as described in the previous paragraph, the increased MARC service would likely result in additional traffic on local roadways in Perryville due to the presence of additional MARC commuters traveling to and from the station. A future environmental review for the extension of MARC service northward beyond Perryville would analyze any such traffic increases.

DIRECT ROADWAY IMPACTS

Alternative 9A would require a slight realignment of Warren Street between N. Adams Street and N. Stokes Street in Havre de Grace. In Perryville, a slight realignment of Avenue A may be necessary under Alternatives 9A and Alternative 9B to accommodate the enlarged bridge abutment. These minor roadway realignments would not have any permanent adverse impacts on local roadway traffic. As described in Chapter 17, "Construction Effects," a construction access plan would be put in place to ensure that there would be no adverse impacts to local roadways during construction.

With Alternative 9A and Alternative 9B, seven bridges where local roadways cross beneath the NEC would require modification **(**see **Figure 3-1)**. The existing crossings at N. Juniata Street, N. Adams Street, Centennial Lane, N. Stokes Street, and Freedom Lane in Havre de Grace, and the Amtrak access roads in Perryville would each need extending to accommodate the final track alignments. Extension of these crossings would not have any negative impacts on local roadway traffic.

Alternative 9A and Alternative 9B could require changes to the PW&B overhead bridge at Chesapeake View Road and the unused PW&B overhead bridges at Coudon Road North and Coudon Road South to accommodate the new track profile and train clearance. For Alternative 9A, the Lewis Lane overhead bridge will require significant reconstruction with a temporary detour during a portion of the project, similar to what was done during its last reconstruction.

LOCALLY SPONSORED ROADWAY PLANS

As discussed in Chapter 21, "Public Participation and Agency Coordination," the City of Havre de Grace has developed plans to redesign the downtown gateway area at the intersection of Otsego Street and N. Union Avenue, adjacent to the existing bridge abutment. The City has requested that the new Susquehanna River Rail Bridge abutment be located as far to the south as possible in order to accommodate these improvements and provide for a more open gateway to the downtown Havre de Grace commercial district. The Project Team designed the Proposed Project to accommodate these improvements, and the City of Havre de Grace will undertake any necessary traffic studies as part of the intersection improvement project. ✷