Welcome!

Susquehanna River Rail Bridge Project

Public Outreach Information Session

Project Purpose and Need

The primary purpose of the Susquehanna River Rail Bridge Project is to provide continued rail connectivity along the Northeast Corridor (NEC).

The project goals 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
- Maintain adequate navigation and improve safety along the Susquehanna River

The Northeast Corridor merges from four tracks to two tracks (heading south from Perryville to Havre de Grace).

Project Purpose and Need

The problems posed by the existing Susquehanna River Rail Bridge include:

- Functionally obsolete and aging infrastructure
- Speed and capacity constraints
- Operational inflexibility
- Maintenance difficulties
- Conflicts with maritime uses

Amtrak crew manually opening the movable bridge span to accommodate marine traffic.

Project Limits (defined by grant)

Recent Project Activity

STAKEHOLDERS

- Coordinated with key stakeholders:
  - Susquehanna River Rail Bridge Project Advisory Board (3/26/15)
  - Harford County Public Schools (7/8/15 & 8/17/15)
    - Discussed impacts to the HdG HS/MS and reviewed proposed redevelopment plans for the school
- Conducting Bicycle/Pedestrian Crossing Hazard Analysis and Security Risk Assessment

SECTION 106

- Coordinated with MHT to confirm potentially eligible historic resources
- Held Section 106 Consulting Parties Meetings:
  - Havre de Grace – 3/9/15
  - Perryville – 8/18/15
    - Discussed known and potentially eligible historic resources
    - Discussed potential impacts to historic and archaeological resources and conceptual mitigation

AGENCY

- Submitted preliminary Alternatives Retained for Detailed Study (ARDS) report
- Held Interagency Review Meeting field visit
- Submitted Refined ARDS report
- Obtained ARDS report concurrence
- Presented at Interagency Review Meetings 2/18/15, 4/15/15, 6/17/15, 9/16/15

Environmental Considerations
National Environmental Policy Act (NEPA)

Requires that we take appropriate measures to protect and enhance the natural, cultural and human environment. A complete study of all reasonable alternatives (including measures to avoid and minimize impacts) must be prepared, and the results must be made available to public officials and citizens before decisions are made.

Natural Environment

- Geology / Groundwater Resources
- Soils
- Surface Water
- Floodplains
- Wetlands
- Aquatic Life
- Wildlife

Socio-Economic Environment

- Demographics
- Community Facilities
- Economic Setting and Land Use
- Noise
- Air

Section 404 of the Clean Water Act, Nontidal Wetlands Protection Act

Regulates dredge and fill of Waters of the United States. Guidelines published by the Environmental Protection Agency for evaluating alternatives require that the Corps of Engineers evaluate the proposed project for environmental impacts (including historic and rare/threatened/endangered species impacts) and select the least environmentally damaging, practicable alternative.

Endangered Species Act

Ensures that actions are not taken to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of the critical habitat of such species.

Section 106 of the National Historic Preservation Act / Cultural Environment

Requires that agencies take into account the effects of a project on properties that are included in or eligible for the National Register of Historic Places. Cultural Resources include both historic structures and archaeological sites.

Section 4(f) of the US Department of Transportation Act

Requires that special effort be made to preserve publicly owned public parks and recreation areas, wildlife / waterfowl refuges and historic sites. No project which requires land from these resources may be approved unless 1) there is no feasible and prudent alternative to the use of the land and 2) the action includes all possible planning to minimize harm to the property resulting from such use.

Clean Air Act and Clean Air Act Amendments

An air quality analysis must be performed to determine if there are violations of the State or National Ambient Air Quality Standards.

Farmland Protection Policy Act

Requires that federal programs minimize conversion of farmland to non-agricultural uses (does not apply to farmland that is zoned or committed (planned) for urban development).

Executive Order 12898 (Environmental Justice)

Requires that agencies identify and address disproportionately high and adverse human health or environmental effects on minority or low-income populations.

Two-Step Alternatives Screening Process

Step 1: Fatal Flaw Screening—criteria developed from Purpose & Need

➤ ***Pass/fail test—alternative must satisfy all criteria to advance***

- Provides rail connectivity
- Meets navigation requirements
- Has logical termini
- Is feasible & constructible
- Avoids critical property impacts (developed from community input)

Step 2: Detailed Screening—based on specific project goals

➤ ***Relative test—compare/contrast each alternative's ability to meet goals & objectives***

- Optimizes existing and planned infrastructure
- Considers operational, design, construction requirements
- Minimizes environmental/cultural/socioeconomic/property impacts

Alternatives Comparison Matrix - Environmental Considerations

EVALUATION CRITERIA		Units	Alternative 1B	Alternative 4B	Alternative 4C	Alternative 4D	Alternative 4E	Alternative 8A	Alternative 8B	Alternative 9A	Alternative 9B	VE
HUMAN ENVIRONMENTAL CONSIDERATIONS												
Permanent Impacts to Land Use and Community Facilities (Where structure demolition is required, a full parcel acquisition is assumed) *The Lafayette Senior Living Center accounts for 15 residential displacements.	Total Number of Parcels	#	3	8	5	8	5	3	3	6	4	5
	Total Acreage	Acres	0.35	4.69	0.98	4.72	0.98	0.10	0.10	2.71	0.32	0.36
	Potential Number of Residential and/ or Commercial Relocations	#	0	16	15	16	15	0	0	1	0	0
Permanent Impacts to Parks and Recreational Resources (Parks avoided include Lower Ferry Park & Pier, Trego Field/Mini-Park, Perryville Community Park, and Existing bike/ped trails)	Total Number of Parks Affected	#	0	2	1	2	1	0	0	2	1	1
	Total Acreage	Acres	0	2.52	0.14	2.56	0.14	0	0	2.29	0.79	0.79
Potential Impacts to Cultural Resources	Number of Impacted Historic Properties	#	2-3	2-3	2-3	2-3	2-3	2-3	2-3	3	3	2-3
	Total Acreage of Potentially Sensitive Archaeological Areas	Acres	0.20	0.20	0.20	0.11	0.11	0.20	0.11	0.31	0.31	0.31
Potential Impacts to Section 4(f) Resources	Total Number of Section 4(f) Resources with Potential Impacts	#	3	5	4	5	4	3	3	5	4	4
NATURAL ENVIRONMENTAL CONSIDERATIONS												
Number of Stream Crossings		#	3	3	3	3	3	3	3	3	3	3
Impacts to Streams***	Total Stream Impacts	Linear Feet	330	450	292	430	271	290	269	376	308	333
Impacts to Wetlands****		Acres	0.65	0.66	0.68	0.60	0.59	0.65	0.59	0.18	0.18	0.65
Impacts to Natural Wetland Buffers			1.41	1.47	1.71	0.78	0.72	1.41	0.72	1.15	1.15	1.42
Impacts to Floodplains	100 year floodplain		2.40	3.29	2.23	2.94	1.87	2.23	1.91	2.70	2.15	2.48
	500 year floodplain		52.66	58.99	51.27	56.44	48.43	50.21	47.63	55.45	51.67	56.07
Impacts to Chesapeake Bay Critical Area			6.90	7.27	7.13	7.25	6.98	6.79	6.46	6.23	6.09	8.01
Impacts to Submerged Aquatic Vegetation			0.63	0.57	0.57	0.57	0.57	0.63	0.64	0.60	0.59	0.74
Number of known / suspected contaminated properties directly impacted		#	2	3	2	3	2	2	2	2	2	2
Impacts to Rare, Threatened or Endangered Species Habitat		Y/N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Impacts to Forest****		Acres	1.74	2.75	0.59	2.34	0.17	0.63	0.23	2.92	2.08	2.08
Bridge Deck Acreage over Susquehanna River*****			6.30	6.30	6.30	4.30	4.30	6.30	4.30	6.30	6.30	6.30
Existing Pier Removal Acreage			0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Retained for further evaluation			No	No	No	No	No	No	No	Yes	Yes	No
Elimination Rationale			Lower maximum allowable speed than 9B with comparable environmental impacts	Impact to Lafayette Senior Housing Facility	Impact to Lafayette Senior Housing Facility and low maximum authorized speed	Impact to Lafayette Senior Housing Facility; provides three tracks only	Impact to Lafayette Senior Housing Facility; offers low maximum authorized speed and three tracks only	Undesirable maximum authorized speed	Undesirable maximum authorized speed	N/A	N/A	Higher property and natural environmental impacts, but lower speed than 9B

*** Does not include the Susquehanna River. All alternatives cross the Susquehanna River.

**** Based on preliminary field survey

*****Actual impacts to be determined by bridge type.

First Tier of Impacts | Second Tier of Impacts | Third Tier of Impacts

Alternatives Comparison Matrix - Operational and Engineering Considerations

EVALUATION CRITERIA	Units	Alternative 1B	Alternative 4B	Alternative 4C	Alternative 4D	Alternative 4E	Alternative 8A	Alternative 8B	Alternative 9A	Alternative 9B	VE
IMPROVE RAIL SERVICE RELIABILITY AND SAFETY											
Eliminates operational disruptions/delays	Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Connects to NS wye and provides grades acceptable for freight operations		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of bridge structures	#	2	2	2	1	1	2	1	2	2	2
IMPROVE OPERATIONAL FLEXIBILITY AND ACCOMMODATE REDUCED TRIP TIMES											
Reduces operational conflicts	Level at which alternative meets criteria	Excellent	Excellent	Excellent	Fair	Fair	Excellent	Fair	Excellent	Excellent	Excellent
Eliminates or reduces existing speed restrictions for intercity trains		Eliminates	Eliminates	Eliminates	Eliminates	Eliminates	Reduces	Reduces	Eliminates	Eliminates	Eliminates
Provides flexibility for operational and maintenance work windows		Very Good	Very Good	Very Good	Good	Good	Very Good	Good	Very Good	Very Good	Very Good
Ability to provide for NS/MARC Operations during Construction		Good	Good	Good	Good	Good	Good	Good	Excellent	Excellent	Good
OPTIMIZE EXISTING AND PLANNED INFRASTRUCTURE											
Eliminates two-track section in this portion of NEC and meets corridor wide improvement needs along NEC	# of tracks provided by alternative	4 tracks	4 tracks	4 tracks	3 tracks	3 tracks	4 tracks	3 tracks	4 tracks	4 tracks	4 tracks
Meets future planned 160 mph corridor-wide improvement without future speed restrictions for intercity trains	Y/N - Maximum allowable speed (mph)	No - 140 mph	Yes - 160 mph	No - 135 mph	Yes - 160 mph	No - 135 mph	No - 120 mph	No - 120 mph	Yes - 160 mph	No - 150 mph	No - 140 mph
Impacts to Perry Electrical Substation	Level of impact	Major	Major	Major	Major	Major	Major	Major	Minor	Minor	Major
Allows shared corridor with Bike/Ped path (feasibility evaluation in progress)	Whether alternative precludes	Does not preclude	Does not preclude	Does not preclude	Does not preclude	Does not preclude	Does not preclude	Does not preclude	Does not preclude	Does not preclude	Does not preclude
MAINTAIN ADEQUATE NAVIGATION AND IMPROVE SAFETY ALONG THE SUSQUEHANNA RIVER											
Provides suitable vertical clearance (at least 60')	Y/N - Clearance provided (feet)	Yes - 60'	Yes - 60'	Yes - 60'	Yes - 60'	Yes - 60'	Yes - 60'	Yes - 60'	Yes - 60'	Yes - 60'	Yes - 60'
Maintains or widens horizontal clearance (at least 200')		Yes - 200' +	Yes - 200' +	Yes - 200' +	Yes - 200' +	Yes - 200' +	Yes - 200' +	Yes - 200' +	Yes - 200' +	Yes - 200' +	Yes - 200' +
Requires temporary winter closure of movable span?	Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Retained for further evaluation		No	No	No	No	No	No	No	Yes	Yes	No
Elimination Rationale		Lower maximum allowable speed than 9B with comparable environmental impacts	Impact to Lafayette Senior Housing Facility	Impact to Lafayette Senior Housing Facility and low maximum authorized speed	Impact to Lafayette Senior Housing Facility; provides three tracks only	Impact to Lafayette Senior Housing Facility; offers low maximum authorized speed and three tracks only	Undesirable maximum authorized speed	Undesirable maximum authorized speed	N/A	N/A	Higher property and natural environmental impacts, but lower speed than 9B

First Tier of Impacts Second Tier of Impacts Third Tier of Impacts

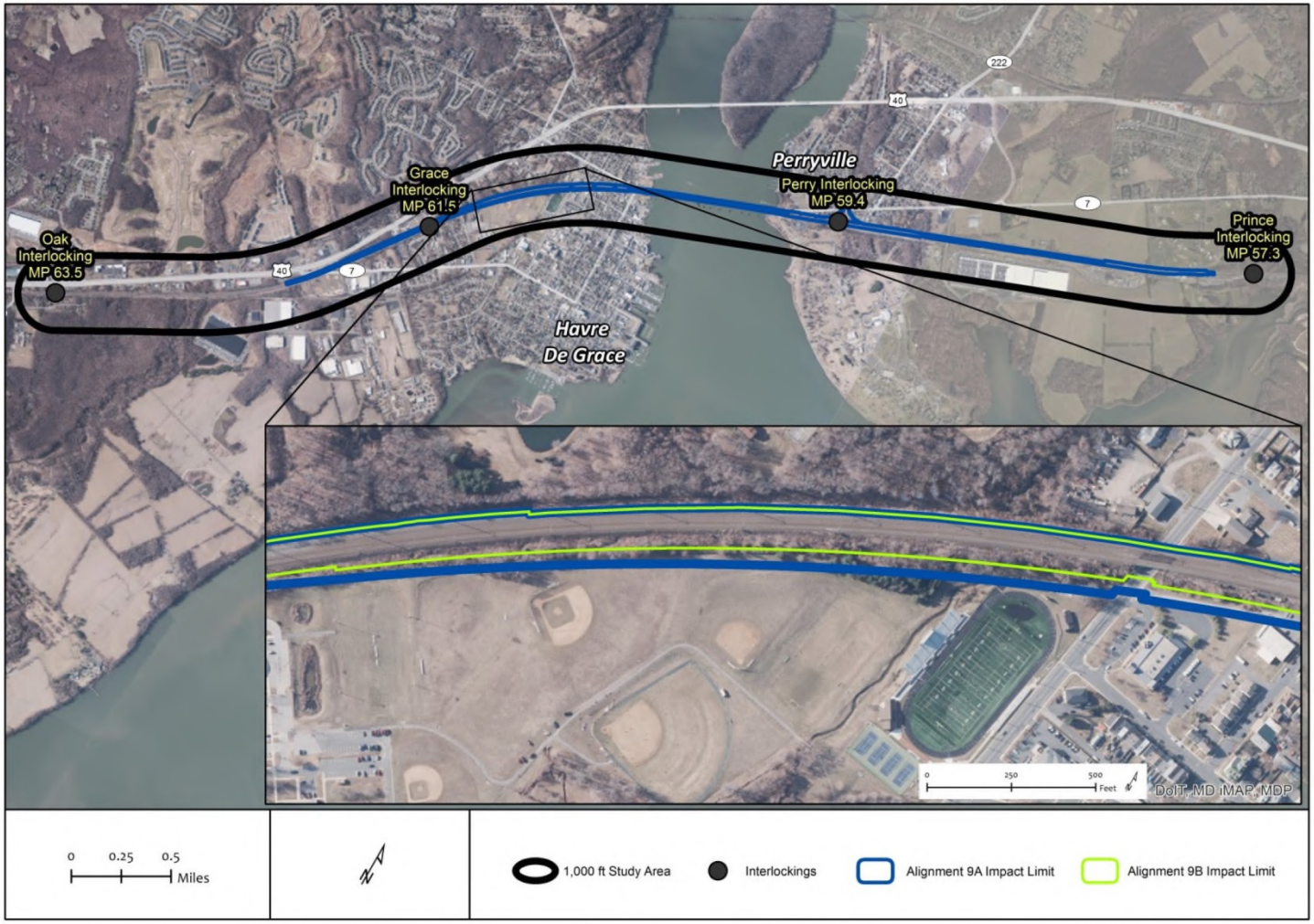
Two-Step Alternatives Screening Results

- ***Fatal Flaw Screening—25 conceptual alignments were evaluated and 15 were eliminated***
  - Rehabilitation of existing bridge was eliminated; not feasible from construction and engineering perspective; will fail to provide continued rail connectivity and meet navigational requirements
- ***Detailed Screening—9 remaining alignments and 1 value engineering alignment were evaluated; all but 2 alignments were eliminated***
  - Alignments were eliminated based on the following factors:
    - Natural and Human Environmental Impacts
    - Operational and Engineering Considerations
- ***Alternatives Retained for Detailed Study—Alignments 9A and 9B***

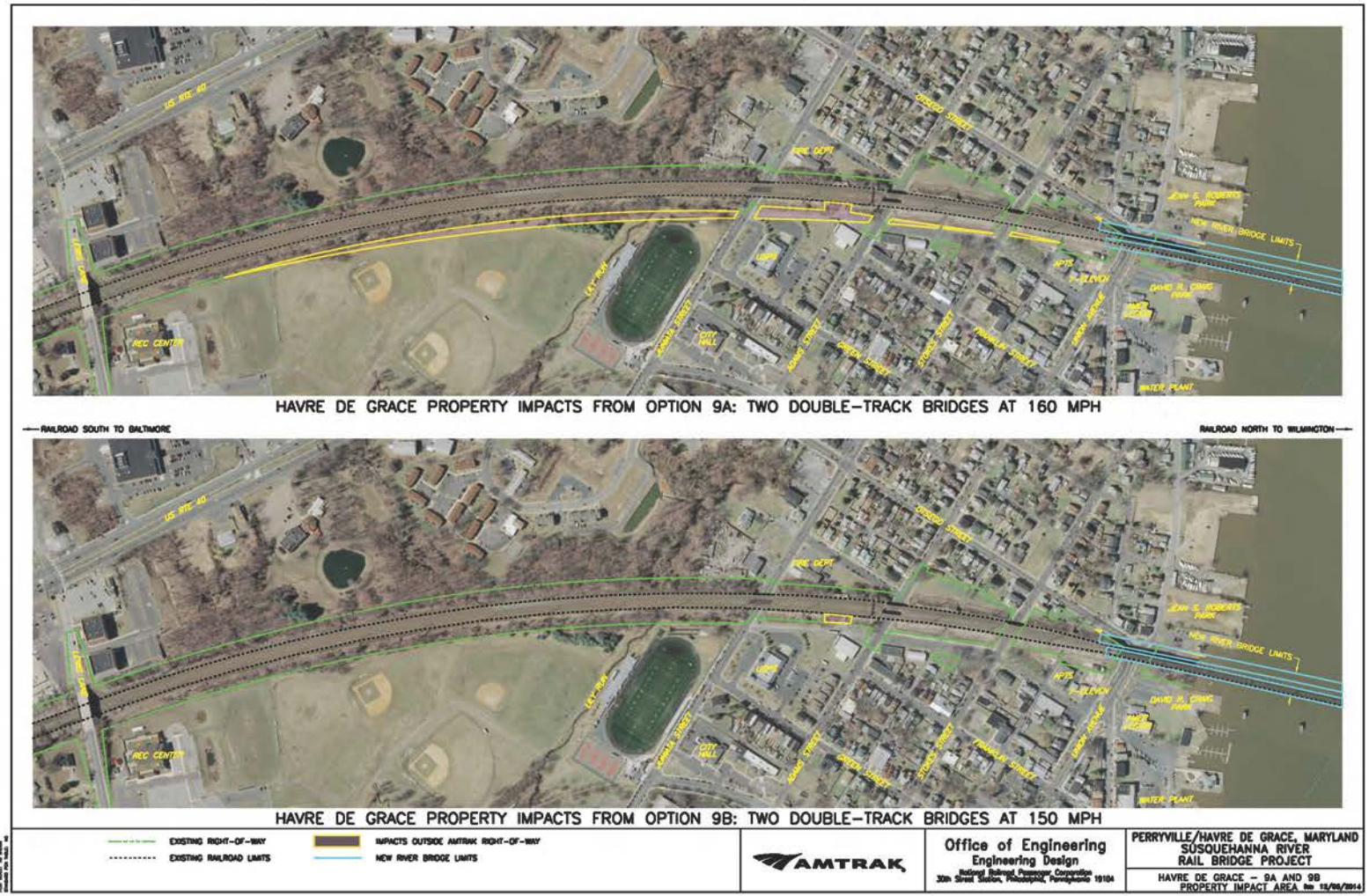
Alternatives Retained for Detailed Study

- ***Alternative 9A***
  - Provides for a four-track crossing with max authorized speed of 160 mph, consistent with the operational goals and with broader plans along the NEC
  - Environmental impacts are comparable or less than other alternatives with similar benefits
  - Investigating potential impact avoidance/minimization and mitigation opportunities (i.e. Perry Interlocking Tower and Havre de Grace MS/HS complex)
- ***Alternative 9B***
  - Provides for a four-track crossing with max authorized speed of 150 mph
  - Environmental impacts are comparable or less than other alternatives with similar benefits
  - Does not require property from Havre de Grace MS/HS complex

Alternatives Retained for Detailed Study Design Limits



Potential Property Impacts from Retained Alternatives



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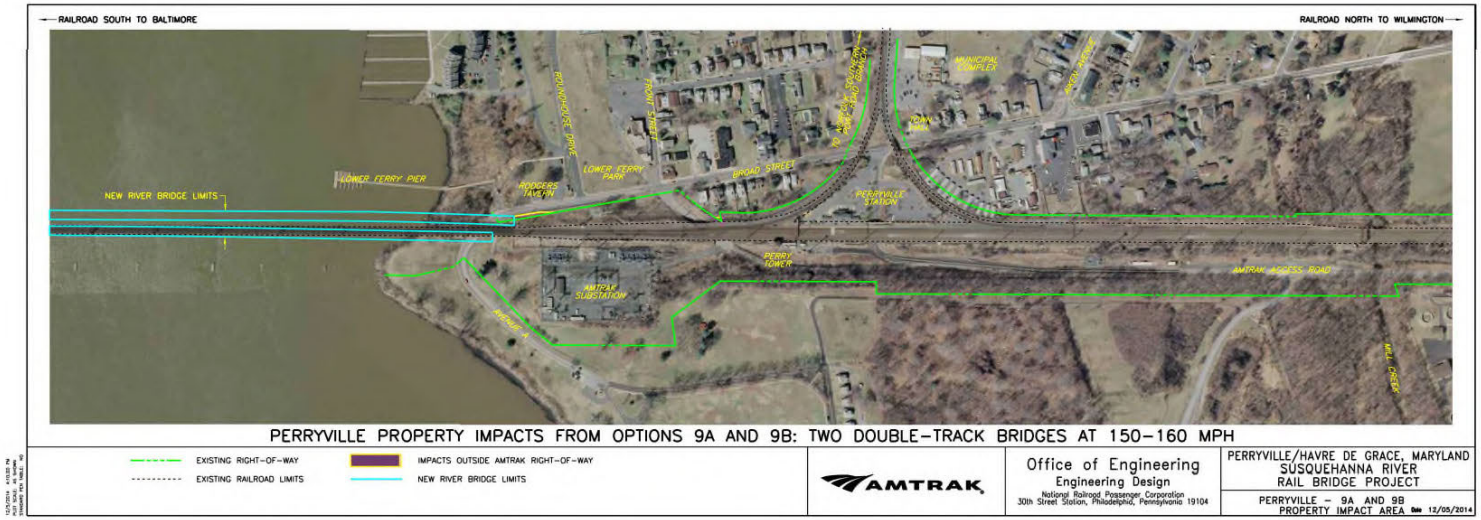

Bridge Design Type Renderings - Approach Span / Channel Span

Bridge Type Comparison Matrix

	DELTA / ARCH	TRUSS / TRUSS	GIRDER / ARCH	GIRDER / TRUSS
INPUT RECEIVED				
Incorporates Mariners Input	YES	YES	YES	YES
Incorporates Public Input on Design Aesthetic	More Favorable	Less Favorable	More Favorable	Less Favorable
ENVIRONMENTAL RESOURCE CONSIDERATIONS				
Number of In-Water Pier Pairs	13	13	19	19
Size of In-Water Piers	More Favorable	Less Favorable	Less Favorable	Less Favorable
Impact to Surface Water	More Favorable	Less Favorable	More Favorable	More Favorable
Impact to Mud Line (river bottom)	Less Favorable	Less Favorable	More Favorable	More Favorable
Compatibility with Historic Bridge	Less Favorable	More Favorable	Favorable	Favorable
ENGINEERING AND OPERATIONS CONSIDERATIONS				
Ease of Maintenance - Approach Spans	Very Good	Good	Excellent	Excellent
Ease of Maintenance - Channel Span	Very Good	Good	Very Good	Good
Structural Redundancy - Approach Spans (key factor)	Excellent	Fair	Excellent	Excellent
Structural Redundancy - Channel Span (key factor)	Very Good	Fair	Very Good	Fair
Ease of Construction	Fair	Good	Excellent	Excellent
Trespasser Resistent From Water	Fair	Good	Excellent	Excellent
Side Span Navigation Clearance	Good	Very Good	Excellent	Excellent
Estimated Cost (2015 $)	$577 Million	$623 Million	$494 Million	$516 Million

LEGEND

- Excellent
- Very Good
- Good
- Fair
- Less Favorable

Bridge Design Renderings - viewed from Havre De Grace

Existing View


Delta Frame Pier Design


Fluted Pier Design


Key Hole Pier Design

Bridge Design Renderings - viewed from Perryville

Anticipated Project Schedule

Summer 2013
- **Early Coordination**
  - Agency Coordination Meeting
  - Meet with Havre de Grace and Perryville Officials

Winter 2014
- **Agency Coordination Meeting**
  - Project Introduction
  - Present Project's Purpose & Need

Spring 2014
- **Agency Coordination Meeting**
  - Obtain Input on Project's Purpose & Need
  - Existing Environmental Conditions
  - Conceptual Alternatives
- **Public Outreach Information Session**
  - Obtain Input on Project's Purpose & Need
  - Existing Environmental Conditions
  - Conceptual Alternatives

Summer 2014
- **Agency Coordination Meeting**
  - Summarize Public Input
  - Present Feasible Alternatives
- **Public Outreach Information Session**
  - Meet with Local Officials and Stakeholders
  - Present Feasible Alternatives

Fall 2014 / Winter 2015
- **Agency Coordination Meeting**
  - Present Alternatives Retained for Detailed Study
- **Public Outreach Information Session**
  - Present Alternatives Retained for Detailed Study

Spring / Summer 2015
- **Agency Coordination Meeting**
  - Agency Field Visit
  - Refine Alternatives Retained for Detailed Study
- **Public Outreach and Stakeholder Coordination**
  - Website Update
  - Stakeholder Coordination

Fall 2015 — We are Here
- **Agency Coordination Meeting**
  - Refined Alternatives Retained for Detailed Study
  - Bridge Type Evaluation
- **Public Outreach Information Session**
  - Refined Alternatives Retained for Detailed Study
  - Bridge Type Evaluation

Winter 2016
- **Agency Coordination Meeting**
  - Analysis of Retained Alternatives / Conceptual Mitigation
- **Public Outreach Information Session**
  - Analysis of Retained Alternatives
  - Alternative Impact Evaluation
  - Public and Stakeholder Meetings

Spring / Summer 2016
- **Prepare Environmental Assessment (EA)**
- **Public & Stakeholder Meetings**

Fall 2016
- **Publish Environmental Assessment (EA)**
- **Agency Coordination Meeting**
  - NEPA Document Findings
- **Public Outreach Information Session**
  - NEPA Document Findings

Winter 2017
- **Complete Preliminary Engineering and NEPA Process**

Spring 2017
- **Complete Federal Railroad Administration Grant Requirements**

Stay Connected

- Visit the project website at **www.susrailbridge.com** to get project updates, learn more about the project, submit a comment, or join the project mailing list.
- Send a letter to:
  Susquehanna River Rail Bridge
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