

**Appendix A**  
**ALTERNATIVES ANALYSIS**

## **A.1 INTRODUCTION**

To identify the solution that will best address the vulnerability of the existing Raritan River Drawbridge to storm events, the New Jersey Transit Corporation (NJ TRANSIT) developed a list of potential alternatives to address that need. The list of potential alternatives considered the project's logical termini, constructability requirements, navigability requirements, and other design criteria. The alternatives development process, which was performed in accordance with FTA guidance, also includes the development of screening evaluation criteria based on the goals and objectives established for the project, and screening the potential alternatives to determine reasonableness by separating those that are unreasonable from those that are reasonable and must be carried forward for detailed study. An alternative that does not meet the project's purpose and need is, by definition, unreasonable and can be eliminated from further consideration. An alternative that does meet the project's purpose and need can still be rejected as unreasonable based on other factors, including environmental impacts, engineering considerations, and cost. If there are two alternatives that both meet the project's purpose and need to a similar degree, but one of them is higher-impact and more costly, those factors can be cited as a basis for rejecting the higher-impact alternative as unreasonable.

## **A.2 PURPOSE AND NEED**

The purpose of the proposed project is to address the vulnerability of the existing Raritan River Drawbridge to major storm events, which will enhance the reliability of the North Jersey Coast Line (NJCL). The existing bridge is more than 100 years old and suffered damage during Sandy that resulted in the suspension of service across the bridge for three weeks after the storm.

The NJCL, which runs from Penn Station New York at its northern terminus to Bay Head, New Jersey at the New Jersey shore at its southern terminus, is NJ TRANSIT's third most heavily use line (of 10 lines), carrying some 26,500 daily commuters on weekdays. It is a vital link in northern New Jersey's transportation infrastructure and the potential loss of both passenger and freight service on the NJCL would have significant implications for daily mobility among Jersey shore communities and local businesses. Loss of the NJCL service would impose traffic congestion, higher costs of travel, and longer travel times. It is therefore critical that the NJCL remain in service, safely and reliably.

The proposed project will improve the reliability of the NJCL and minimize delays to rail and maritime traffic by reducing the risk of bridge failures during storm events and as a result of mechanical failures.

## **A.3 PROJECT GOALS AND OBJECTIVES**

Based on needs identified above as well as its own operational requirements, NJ TRANSIT has developed goals and objectives for the proposed project. The proposed project has four goals: 1) improve the resilience of River Draw to severe storms; 2) provide rail improvements that minimize service disruption and optimize operations; 3) maintain and improve maritime navigation beneath the bridge; and 4) minimize adverse impacts on the built and natural environment. These goals, and their supporting objectives, are shown in Table A-1 below.

**Table A-1**  
**Raritan River Bridge Replacement Project Goals and Objectives**

Goal	Objective
Improve resilience of the Raritan River Bridge to severe storms	Address damage sustained during Sandy and bring bridge to state of good repair
	Reduce vulnerability of the bridge to ocean surges
	Raise tracks and electrical and mechanical systems above NJ TRANSIT's Design Flood Elevation (2.5 feet above the Federal Emergency Management Agency (FEMA) Base Flood Elevation (BFE)) <sup>1</sup> to the extent practicable
	For any bridge elements that will be beneath NJ TRANSIT's Design Flood Elevation, design components to be resistant to saltwater and ocean surge
	Provide adequate structural capacity to comply with current code requirements
Provide rail improvements that minimize service disruption and optimize operations	Minimize loss of service on the NJCL during and following storm events
	Optimize design speeds for trains on the bridge, up to 60 miles per hour (mph)
	Avoid substantial compromises to existing NJCL timetables
	Accommodate heavier freight trains of 286,000 pounds and potentially up to 315,000 pounds
	Minimize capital and operating and maintenance (O&M) costs
Maintain and improve marine navigation beneath the bridge	Implement within a reasonable timeframe
	Avoid impacts to NJCL and Conrail operations during construction
	Minimize delays to marine traffic due to bridge malfunctions
	Align channel to minimize the risk of collisions with marine vessels
Minimize adverse impacts on the built and natural environment	Enable the safer and faster passage of boats beneath the structure
	Avoid impacts to marine traffic during construction
	Avoid property acquisition to the maximum extent feasible
	Avoid, minimize, or mitigate adverse impacts on historic resources
	Avoid impacts on parklands, open space, natural features, and coastal waters
	Maintain access to nearby residences and businesses during construction
	Minimize construction impacts to the extent feasible

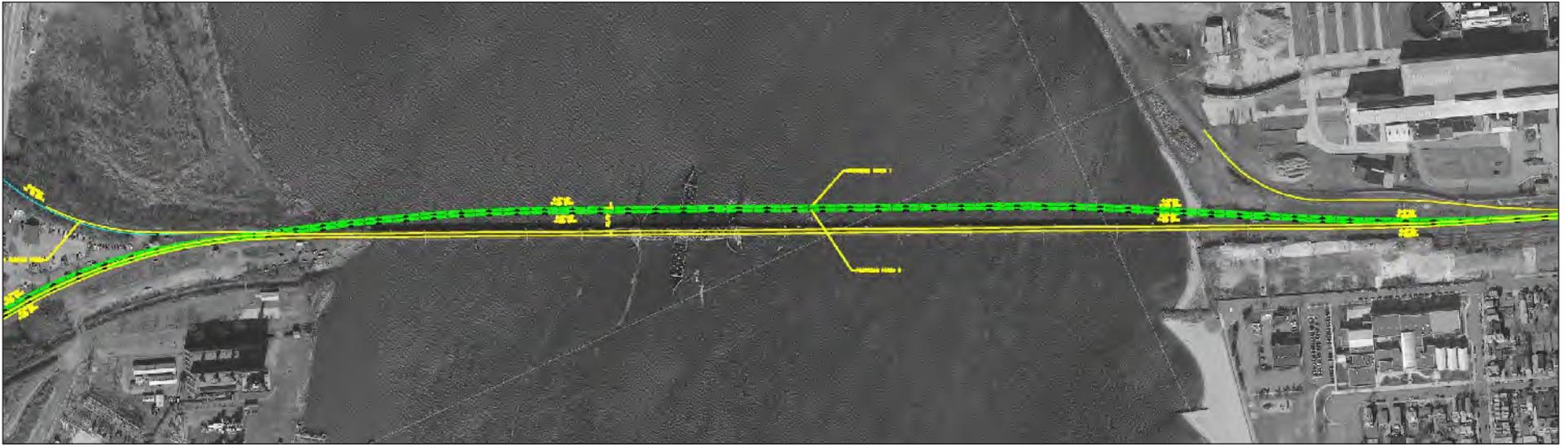
#### A.4 IDENTIFICATION OF ALTERNATIVES

To identify reasonable alternatives to address the vulnerability of the existing Raritan River Drawbridge to major storm events, NJ TRANSIT and its consultant team identified and evaluated a number of alternatives, including the:

- No Action Alternative;
- Rehabilitation Alternative; and
- Bridge replacement alternatives, as follows:
  - Bridge alignment within the footprint of the existing bridge;
  - Fixed span (non-moveable) bridge alignment (to the east or west of existing bridge);
  - Moveable span bridge to the west of the existing alignment (**Figure A-1**);

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<sup>1</sup> Based on preliminary flood information released by FEMA following Sandy, the BFE at the bridge location is 18 feet (using the North American Vertical Datum of 1988 [NAVD88]).



- Moveable span bridge to the east of the existing alignment (**Figure A-2**);
- Moveable span bridge to the west of the existing alignment with center span perpendicular to the navigation channel (**Figure A-3**).

For the bridge replacement alternatives, three options were identified and evaluated for the superstructure (**Figure A-4**):

- Use of steel multi-girders, which generally require relatively small bridge piers located approximately 95 feet apart;
- Use of steel through-girders, which generally require larger bridge piers located approximately 140 feet apart;
- Use of steel through-trusses, which generally require relatively large bridge piers located approximately 190 feet apart.

For the bridge replacement alternatives with moveable spans, three bridge types were identified and evaluated (**Figure A-5**):

- Swing Bridge (similar to the existing bridge);
- Bascule Bridge, with consideration of single and double leaf bascules; and
- Vertical Lift Bridge.

## **A.5 DESIGN GUIDELINES FOR REPLACEMENT BRIDGE ALTERNATIVES**

The design of any replacement bridge for Raritan River Bridge must meet certain railroad operating requirements and should optimize the horizontal and vertical alignments to improve marine navigation and the resiliency of the bridge, and its railroad operations, to severe weather events.

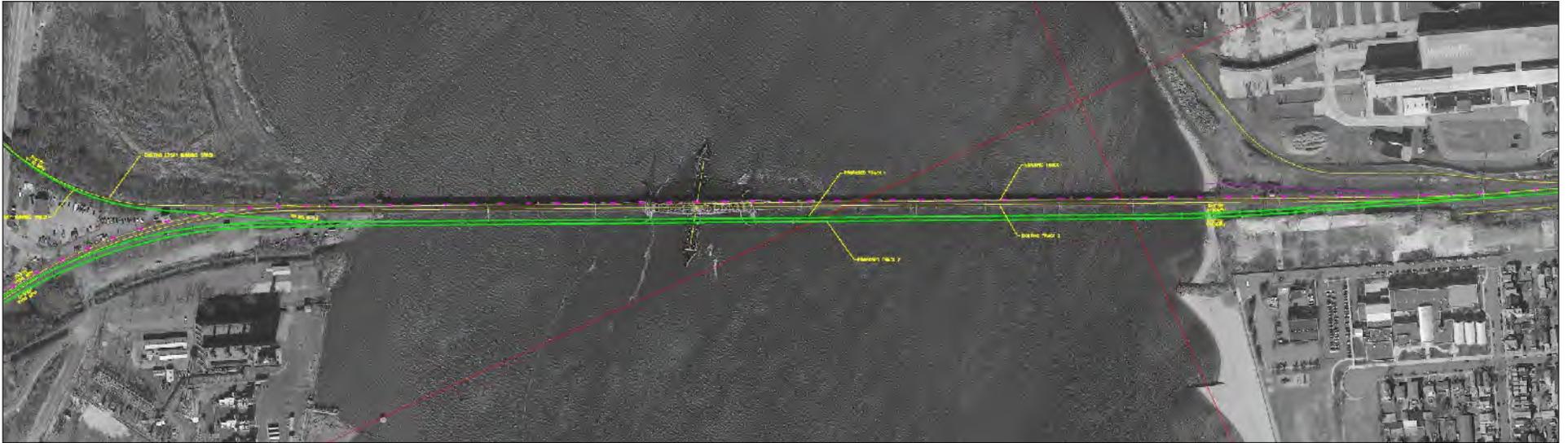
### **A.5.1 HORIZONTAL ALIGNMENT**

The horizontal alignment should be as straight as practicable, to avoid the need to slow trains for a curve, and should reconnect to the existing main line tracks of the NJCL as soon as practicable, to limit the need for work outside the railroad right-of-way and acquisition of property.

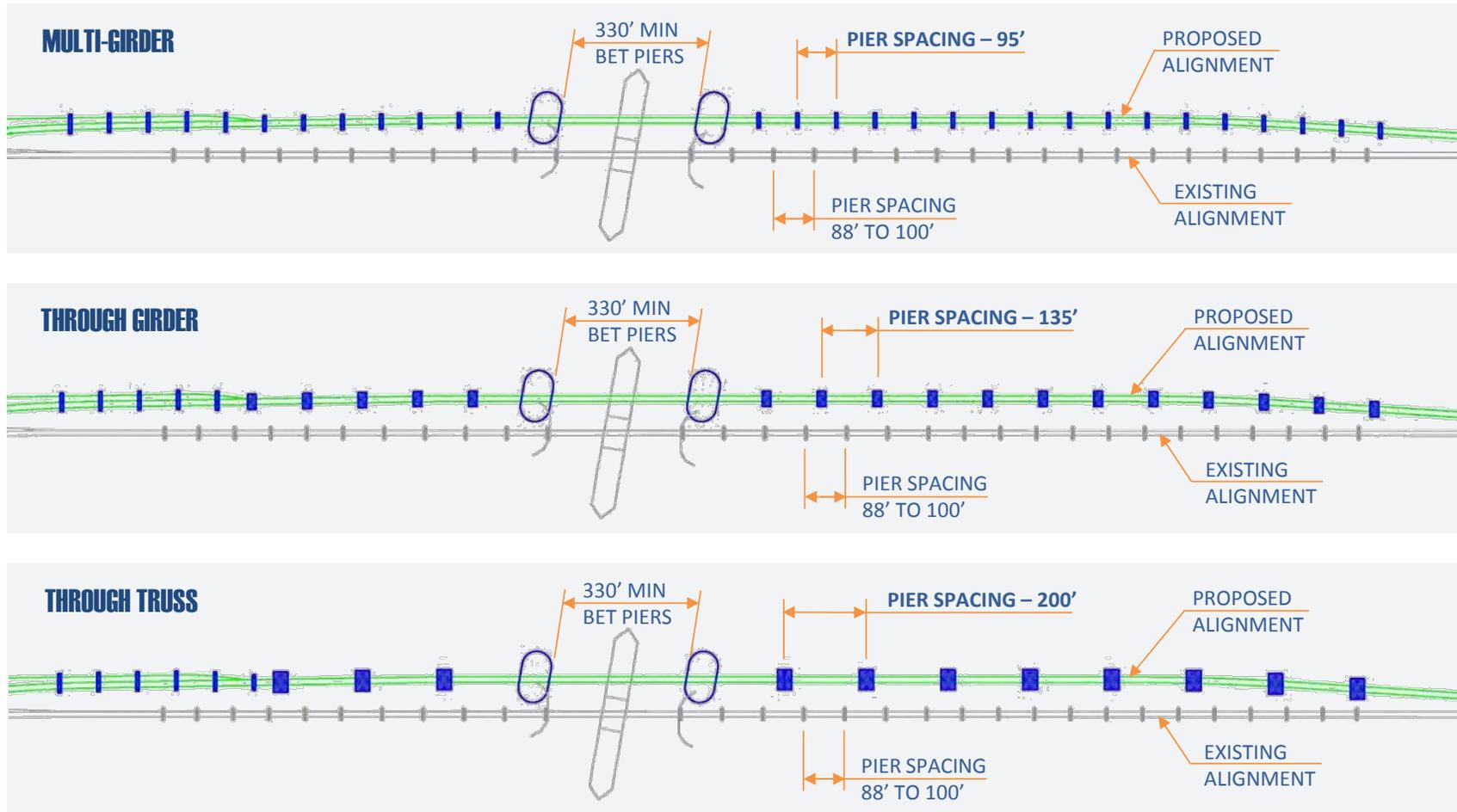
### **A.5.2 VERTICAL ALIGNMENT**

The vertical alignment should be raised as high as practicable, to raise the bridge above NJ TRANSIT's Design Flood Elevation. However, the maximum elevation that can be achieved is limited by the need to maintain a shallow grade of no more than 1.5 percent, to accommodate both passenger and freight trains, and the need to reach existing grade to the north and south of the bridge within a fairly short distance. The tracks should meet the existing grade prior to the Perth Amboy and South Amboy rail stations (to the north and south of the bridge, respectively), to avoid the need for modifications to those historic stations. The tracks should also meet the existing grade in South Amboy prior to the roadway overpass near Main Street, to avoid the need for changes of this crossing.

The new bridge should provide for a minimum of 110 feet of vertical clearance within the navigational channel. This criterion is based on the height of the adjacent Victory Bridge, which is upstream of the Raritan River Bridge. The Victory Bridge, which carries Route 35 across the Raritan River, is a fixed bridge constructed in 2003-2004 to replace a moveable bridge.







**Vertical Lift**



**Bascule Span**



**Swing Span**



### **A.5.3 RESILIENT DESIGN**

Any new bridge must also be designed to be resilient to severe storm events. As indicated above, bridge elements should be raised above NJ TRANSIT's Design Flood Elevation, which is 2.5 feet above the FEMA BFE where practicable, and/or all bridge components should be designed to be resilient to saltwater and ocean surges.

### **A.5.4 NAVIGATIONAL IMPROVEMENTS**

The existing navigational channel on either side of the bridge is 300 feet wide. As it passes beneath the bridge, the channel divides around the bridge's center pier (i.e., the location of the swing span when the bridge is open), creating two narrow channels: a 124-foot-wide north channel and a 125-foot-wide south channel. This creates an obstacle for maritime traffic. In addition, the alignment of the bridge is such that the marine channel is slightly skewed in comparison to the bridge's fenders and central pier. The combination of the obstacle created by the center pier, the narrower channels, and this misalignment has contributed to numerous collisions at the bridge channel in which both bridge and marine vessels have been damaged. The new bridge should improve this condition by addressing the skew of channel relative to the bridge, or by removing the center pier altogether.

### **A.5.5 OPERATING REQUIREMENTS**

To optimize operations on the NJCL, the target design speed for passenger trains on the bridge is up to 60 miles per hour. Additionally, the new bridge should accommodate freight trains with heavier rail cars, up to 315,000 pounds per rail car, a key goal identified in the *New Jersey Statewide Freight Rail Strategic Plan* (2014)<sup>2</sup> and a goal identified by Conrail, which operates freight rail trains over the bridge.

## **A.6 EVALUATION CRITERIA**

The alternatives identified above were evaluated to determine the degree to which they would meet the goals and objectives established for the proposed project. The evaluation criteria described below are based on the proposed project's goals and objectives and are designed to differentiate between the alternatives, and facilitate decision-making and the selection of a preferred alternative.

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<sup>2</sup> New Jersey Department of Transportation, *New Jersey Statewide Freight Rail Strategic Plan, Moving New Jersey Forward*, June 2014. <http://www.state.nj.us/transportation/freight/plan/pdf/FRSP.pdf>

**Table A-2**  
**Raritan River Bridge Replacement Project: Evaluation Criteria**

Criterion	Evaluation Metric
<b>Criterion 1: Improve resilience of Raritan River Bridge to severe storms</b>	
✓	Alternative would meet current structural design standards (AREMA <sup>3</sup> ) and NJ TRANSIT's Design Flood Elevation criteria
—	Alternative would meet current structural design standards (AREMA) or NJ TRANSIT's Design Flood Elevation criteria
✗	Alternative would not meet the current structural design standards (AREMA) or NJ TRANSIT's Design Flood Elevation criteria
<b>Criterion 2: Provide rail improvements that minimize service disruption and optimize operations</b>	
✓	Alternative would allow for 60 mph design speed and accommodate heavier freight trains
—	Alternative would <b>either</b> allow for 60 mph design speed <b>or</b> accommodate heavier freight trains
✗	Alternative would not allow for 60 mph design speed or accommodate heavier freight trains
<b>Criterion 3: Avoid impacts to NJCL and Conrail operations</b>	
✓	Alternative would avoid impacts to NJCL and Conrail operations
—	Alternative would avoid impacts to NJCL <b>or</b> Conrail operations
✗	Alternative would not avoid impacts to NJCL or Conrail operations
<b>Criterion 4: Minimize capital and O&amp;M costs and construction schedule risks</b>	
✓	Alternative would minimize capital costs, O&M costs, and construction schedule risks
—	Alternative would minimize capital costs and O&M costs, <b>or</b> construction schedule risks
✗	Alternative would not minimize capital costs, O&M costs or construction schedule risks
<b>Criterion 5: Maintain and improve marine navigation beneath the bridge</b>	
✓	Alternative would enable safer and faster passage of boats during construction and operation
—	Alternative would enable safer and faster passage of boats during construction <b>or</b> operation
✗	Alternative would not enable safer and faster passage boats during construction or operation
<b>Criterion 6: Minimize delays to marine traffic due to bridge malfunction</b>	
✓	Alternative would minimize delays to marine traffic
—	Alternative would somewhat minimize delays to marine traffic
✗	Alternative would not minimize delays to marine traffic
<b>Criterion 7: Minimize adverse impacts and property acquisition</b>	
✓	Alternative would minimize adverse impacts and property acquisition
—	Alternative would somewhat minimize adverse impacts and property acquisition
✗	Alternative would not minimize adverse impacts and property acquisition
✓ Meets criterion — Somewhat meets criterion ✗ Does not meet criterion	

<sup>3</sup> The American Railway Engineering and Maintenance-of-Way Association (AREMA) 2016 Manual for Railway Engineering.

## **A.7 EVALUATION OF ALTERNATIVES**

The No Action, Rehabilitation, and Bridge Replacement alternatives were evaluated with respect to the evaluation criteria established for the proposed project. The results of the screening analysis are shown on Table A-3 and described below.

### **A.7.1 NO ACTION ALTERNATIVE**

In the No Action Alternative, the existing Raritan River Drawbridge would remain in service as is, with continued maintenance to address conditions as they arise. In this alternative, the track bed would retain its existing elevation (8 feet above mean high water and 13 feet above mean low water). In this alternative, the elevation of the tracks at top of rail is 19 feet, only 1 foot above the FEMA BFE. This means that in a severe storm, the bridge girders would be well below the ocean surface and vulnerable to powerful ocean water surges driven by tides and winds, such as occurred during Sandy. The bridge's operating machinery would remain below the FEMA BFE and subject to continued damage from water infiltration. Prolonged service disruptions would be expected to occur after severe weather events for emergency repairs and inspections.

The No Action Alternative would require trains to be operated at the reduced speed limits that have been in place since Sandy, with passenger trains operating at 30 mph and freight trains operating at 20 mph.

This alternative was eliminated from further consideration due to its failure to meet any of the evaluation criteria established for the proposed project.

### **A.7.2 REHABILITATION OF THE EXISTING BRIDGE**

Rehabilitation of the existing bridge on the existing alignment while maintaining train operations across the bridge during construction is not feasible. Rehabilitation to address the damage caused by Sandy and to upgrade the bridge to meet current standards and requirements for storm resilience would require extensive retrofitting of substructure and foundation. However, there is inadequate clearance beneath the bridge to drive the required sheet piles, and retrofitting of the main span piers would require narrowing the navigational channel.

In addition, the existing bridge girders, mechanical equipment, and rail would remain in place and therefore the bridge would continue to be vulnerable to storm damage. The track bed would retain its existing elevation (8 feet above mean high water and 13 feet above mean low water). In this alternative, the elevation for the tracks at top of rail is 19 feet, only 1 foot above the FEMA BFE. This means that in a severe storm, the bridge girders would be well below the ocean surface and vulnerable to powerful ocean water surges driven by tides and winds, such as occurred during Sandy. The bridge's operating machinery would remain below the FEMA BFE and subject to continued damage from water infiltration. Prolonged service disruptions can be expected to occur after severe weather events to for emergency repairs and inspections.

This alternative was eliminated from further consideration due to its failure to meet any of the evaluation criteria established for the proposed project.

### **A.7.3 REPLACEMENT BRIDGE ALTERNATIVES**

#### *A.7.3.1. ALIGNMENT WITHIN FOOTPRINT OF CURRENT BRIDGE*

Replacing the existing bridge within the existing alignment while maintaining train operations across the bridge during construction is not feasible. It would require a complete shutdown of train operations across the river for approximately three years while the new bridge is being constructed. The existing piers and bridge deck cannot be replaced in part while maintaining train operations. Shutting down train operations would result in significant adverse impacts to the regional roadway network and affect regional economic productivity due to time spent in increased traffic congestion.

This alternative was eliminated from further consideration due its failure to meet criteria 3 and 7.

#### *A.7.3.2. FIXED SPAN ALIGNMENT*

On the west side of the existing bridge, NJ TRANSIT evaluated the potential for a fixed bridge, which would be high enough above the navigational channel to allow maritime traffic to pass beneath the bridge without a bridge opening. As indicated above, the fixed bridge would need to provide vertical clearance of 110 feet, the same height as the Victory Bridge, which is the next bridge upstream of the Raritan River Drawbridge.

Because of the need to provide a shallow grade of no more than 1.5 percent to accommodate freight trains, the fixed bridge alternative would require new landside approach tracks extending more than a mile north of the river in Perth Amboy (approximately 4,300 feet north of the Perth Amboy rail station) and approximately a mile south of the river in South Amboy (approximately 2,100 feet past the South Amboy station) before tying back into the existing NJCL tracks. This is far longer than the new approach tracks that would be needed for a moveable span, which would be less than 1,000 feet on either side of the bridge in either a western or an eastern alignment. This in turn would result in the need for acquisition of portions of up to 48 properties. In addition, the Perth Amboy and South Amboy stations would need to be raised approximately 65 feet and 55 feet, respectively, to align with the new higher tracks. Subsequently, a fixed bridge alignment would result in the loss of the historic Perth Amboy and South Amboy train station buildings. Moreover, the higher tracks could be visually intrusive to the surrounding neighborhoods, especially in the Perth Amboy residential neighborhoods close to the railroad tracks.

A fixed span bridge alignment to the east of the existing bridge was also eliminated from further consideration for the same reasons discussed above. The long track approaches would require acquisition of portions of up to 23 properties on this alignment.

Given the magnitude of environmental impacts that would result under this alternative and the extensive property acquisitions that would be required, the fixed span bridge alternative was eliminated from further consideration (criterion 7).

#### *A.7.3.3. MOVEABLE SPAN BRIDGE TO THE WEST OF EXISTING BRIDGE*

This alternative provides for a bridge on an alignment west of the existing structure generally parallel to the existing alignment. This alternative would be designed to meet current structural design standards and NJ TRANSIT's Design Flood Elevation criteria, would meet the 60 mph operating requirement, and accommodate freight trains with heavier rail cars. The proposed alignment would be between 80 to 210 feet away from the existing center span of the bridge, depending on the moveable span option selected for the center span. River access to the bridge would be from upriver (the inland side of the

bridge), which would allow for the movement of construction materials without impact to railroad operations during construction, since the existing swing span would not have to be opened for most of the material and equipment movement. The existing bridge would remain in operation throughout the construction phase of the project, and impacts to rail operations and marine navigation would be relatively minor. Depending on the moveable span option selected, to varying degrees, marine navigation would be maintained and/or improved during construction and operation. The alignment would be primarily within the railroad's right-of-way with minor property acquisition requirements on the north and south shore. The alignment on the South Amboy south of the river would have minor impacts on wetlands, which would be mitigatable. Since this alternative meets all of the criterion established for the proposed project it was retained for detailed analysis in the Environmental Assessment.

**A.7.3.4. MOVEABLE SPAN BRIDGE TO THE EAST OF EXISTING BRIDGE**

This alternative provides for a bridge on an alignment east of the existing structure generally parallel to the existing alignment. This alternative would be designed to meet current structural design standards and NJ TRANSIT's Design Flood Elevation criteria, and accommodate freight trains with heavier rail cars. However, the track geometry of the alignment does not allow for the 60 mph operating requirement to be met due to a curve on the South Amboy side of the river. Trains would operate at slower speeds than pre-Sandy conditions (30 mph instead of the 45 mph operation prior to Sandy). The proposed alignment would be between 80 to 210 feet away from the existing center span of the bridge, depending on the moveable span option selected for the center span. River access to the bridge during construction would be from upriver (the inland side of the bridge), which would impact the construction schedule and/or railroad operations due to the need to open and close the swing span of the existing bridge for construction access. Depending on the moveable span option selected, to varying degrees, marine navigation would be maintained and/or improved during construction and operation. An eastern alignment would require greater property acquisition than the western alignment, including active businesses, the site of a proposed park (2nd Street Community Park), and potentially a small area of an existing park (Sadowski Parkway Waterfront Park). Construction on the eastern alignment would require the removal of old pier foundations from an old bridge that was in place prior to the existing Raritan River Drawbridge. This additional in-water work could result in a range of potential aquatic impacts. This alternative was eliminated from further consideration based on its relative performance, compared to the western alignment, with respect to criteria 2, 3, 4, and 7.

**A.7.3.5. MOVEABLE SPAN BRIDGE PERPENDICULAR TO THE NAVIGATION CHANNEL**

This alternative provides for a bridge on an alignment west of the existing structure and perpendicular to the existing navigation channel at the main span. This alternative would be designed to meet current structural design standards and NJ TRANSIT's Design Flood Elevation criteria, and would accommodate freight trains with heavier rail cars. This alignment would achieve the 60 mph curve on the South Amboy side, however, track geometry to the east of the curve may lead to reverse curvature, which is a less than ideal operating condition. The proposed alignment would be approximately 80 feet from the existing alignment across the southern half of the river, but would swing out to a maximum of approximately 400 feet from the bridge just north of the existing swing span. River access to the bridge would be from upriver (the inland side of the bridge), which would allow for the movement of construction materials without impact to railroad operations during construction, since the existing swing span would not have to be opened for most of the material and equipment movement. The existing bridge would remain in operation throughout the construction phase of the project, and

impacts to rail operations and marine navigation would be relatively minor. While this alignment would optimize marine navigation by addressing the skew of the channel relative to the bridge, its construction would lead to increased construction cost and longer construction durations due to the complex girder configurations and non-uniform sections dictated by the curves in the alignment. This alternative would require more property acquisition and impact wetlands on the South Amboy shore to a greater degree than the western alignment described above.

This alternative was eliminated from further consideration based on its relative performance, compared to the western parallel alignment, with respect to criteria 4 and 7.

## **A.8 EVALUATION OF REPLACEMENT BRIDGE OPTIONS**

A number of viable options for the superstructure and moveable span for a replacement bridge are detailed below. If any were to be implemented in the western replacement bridge alignment, the alternative would meet all of the evaluation criteria established for the proposed project. Highlighted below are the advantages and disadvantages of each replacement bridge option, in relation to the proposed project's evaluation criteria. NJ TRANSIT's preferred options are identified in order to define a Preferred Alternative for the proposed project. The Preferred Alternative will be analyzed in detail in the EA as the Build Alternative.

### **A.8.1 SUPERSTRUCTURE OPTIONS**

Steel multi-girders would accommodate relatively short spans (95 feet) and require the most bridge piers of relatively small size. Steel multi-girders would provide a redundant and reliable superstructure system, at relatively low cost. Steel multi-girders are easy to maintain, typically requiring localized steel repairs and/or replacement of a girder. Due to the redundant nature of this system, repairs are relatively easy to make since temporary support systems would typically not be required. Steel multi-girders can be shop fabricated in any length and transported to the site relatively easily. Structural resiliency would be provided by designing the superstructure and bearings with adequate structural resistance to the forces imposed by a storm. Steel multi-girders would replicate the appearance of the existing bridge.

Steel through-girders would accommodate longer spans (approximately 140 feet) than the steel multi-girder option and require fewer, but larger bridge piers, at a higher cost. Steel through-girders provide for a reliable structure but maintenance needs are more complicated since temporary support systems would be required to replace individual girders. Steel through-girders can also be shop-fabricated and transported to the site relatively easily.

Steel through trusses would accommodate the longest spans (approximately 190 feet) and require the fewest and largest bridge piers at the highest cost. Comparatively, this option requires significant maintenance throughout the structures lifespan. Unless site constraints dictate the use of a long span, one of the other options is usually chosen over the steel through truss option due to the significant inspection and maintenance requirements.

Potential impacts on natural resources would not be appreciably different under any of these options. The total cubic yards of fill in the river related to the installation of bridge piers would be similar under each option.

As a result of these considerations, steel multi-girders are NJ TRANSIT's preferred option for the superstructure.

## **A.8.2 MOVEABLE SPAN OPTIONS**

### *A.8.2.1. SWING BRIDGE*

The existing moveable bridge is a swing bridge, which rotates around a center pivot pier to allow vessels to pass beneath the bridge (see **Figure A-4**). A major issue with constructing another swing bridge at the Raritan River Bridge location is the need to construct a new center pivot pier within the existing navigation channel, which would require closing off half of the channel during construction. In addition, this moveable span option would require a 210-foot distance between the existing and new bridges, since the new and existing swing bridges would be in place at the same time during testing and commissioning of the new bridge. During this period, the new swing bridge would have to be opened simultaneously with the existing bridge. Simultaneous operations would be at a slower than normal speed to ensure clearance, which would impact rail operations and marine navigation. A swing bridge also requires more maintenance and associated costs compared to the other moveable span options due its mechanical components, which would be located below track level. Watertight machinery enclosures would need to be incorporated into the design to ensure adequate flood resiliency. Finally, the swing bridge would require a center pivot pier with an extensive fender system. The new piers and fender system could be designed to follow the alignment of the channel, thus eliminating the channel taper effect that currently exists. However, this bridge type option would still divide the channel into two, and provide only marginal benefits to marine navigation.

### *A.8.2.2. BASCULE BRIDGE*

A bascule bridge is operated by rotating about a transverse horizontal axis on one or both sides of the navigation channel (see **Figure A-4**). Because of the size of the channel and the relatively low vertical profile of the bridge, one single bascule is not feasible. Therefore, two single-leaf bascules which share a common center rest pier would be required. Similar to the swing bridge, this option would require closure of one half of the navigation channel during construction and would provide only marginal benefits to marine navigation.

### *A.8.2.3. VERTICAL LIFT BRIDGE*

A vertical lift bridge operates by raising and lowering the main span through the use of lifting apparatus situated in towers located on each side of the main span (see **Figure A-4**). This option is the most resilient since the mechanical equipment would be located well above NJ TRANSIT's Design Flood Evaluation criteria. Unlike the swing and bascule span options, the vertical lift design does not rely on rotation of the main span to clear the navigation channel. This option would result in long-term improvements for marine navigation since it would accommodate unobstructed passage of the entire width of the 300-foot-wide channel. During testing and commissioning the vertical lift bridge would be left in the open position, allowing the existing swing bridge to operate freely. Once the vertical lift bridge is in operation, but prior to demolition of the existing bridge, the two bridges would operate in succession, which would have the least impact on railroad operations and marine navigation.

As a result of these considerations, a vertical lift bridge is NJ TRANSIT's preferred option for the bridge type.

## A.9 IDENTIFICATION OF PREFERRED ALTERNATIVE

Based on the alternatives analysis performed for the proposed project, the Preferred Alternative is a vertical lift bridge with a steel multi-girder superstructure located to the west of, and approximately 50 feet from, the existing bridge.

**Table A-3**  
**Screening Results: Alternatives' Ability to Meet Evaluation Criteria**

Project Goal	No Action Alternative	Rehabilitation Alternative	REPLACEMENT BRIDGE ALTERNATIVES				
			In Existing Location	Fixed Span	Moveable Span Western Alignment	Moveable Span Eastern Alignment	Moveable Span Perpendicular to Channel
<b>Criterion 1:</b> Improve resilience of Raritan River Bridge to severe storms	✘	✘	✔	✔	✔	✔	✔
<b>Criterion 2:</b> Provide rail improvements that minimize service disruption and optimize operations	✘	✘	✔	✔	✔	—	✔
<b>Criterion 3:</b> Avoid impacts to NJCL and Conrail operations	✘	✘	✘	✔	✔	—	✔
<b>Criterion 4:</b> Minimize capital and O&M costs and construction schedule risks	✘	✘	✔	✔	✔	—	—
<b>Criterion 5:</b> Maintain and improve maritime navigation beneath the bridge	✘	✘	✔	✔	✔	✔	✔
<b>Criterion 6:</b> Minimize delays to marine traffic due to bridge malfunction	✘	✘	✔	✔	✔	✔	✔
<b>Criterion 7:</b> Minimize adverse impacts and property acquisition	✘	✘	✘	✘	✔	—	—
<b>Recommended for further study?</b>	NO	NO	NO	NO	YES	NO	NO
✔ Meets criterion — Somewhat meets criterion ✘ Does not meet criterion as per Table A-2							

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**Appendix B**  
**SECTION 106 COORDINATION**

**Appendix B**

**SECTION 106 COORDINATION**

**B-1: Section 106 Correspondence**

**Chris Christie**, Governor  
**Kim Guadagno**, Lieutenant Governor  
**James S. Simpson**, Board Chairman  
**Veronique Hakim**, Executive Director

**NJ TRANSIT**  
One Penn Plaza East  
Newark, NJ 07105-2246  
973-491-7000

September 28, 2015

Daniel Saunders  
Deputy State Historic Preservation Officer  
Mail Code 501-04B  
NJDEP-Historic Preservation Office  
5 Station Plaza  
501 East State Street, P.O. Box 420  
Trenton, NJ 08625-0420

Attention: Patty Chrisman

RE: Initiation of Section 106 Consultation  
Phase IA Archaeological Survey and  
Historic Architectural Resources Background Study (HARBS) and Effects Assessment  
NJ TRANSIT Coast Line Raritan River Draw Bridge Replacement Project  
City of Perth Amboy and City of South Amboy, Middlesex County, New Jersey

Dear Mr. Saunders:

New Jersey Transit Corporation (NJ TRANSIT), using funds provided through the Federal Transit Administration (FTA), plans to replace the NJ TRANSIT North Jersey Coast Line Raritan River Draw Bridge between the City of Perth Amboy and the City of South Amboy, Middlesex County, New Jersey. The project is in the early stages of development, and a preferred alternative has not yet been selected, although the alignment of the replacement bridge is expected to run proximate with the present structure (Figures 1 and 2). This document has been prepared in conjunction with RGA, Inc., cultural resources consultants, pursuant to Section 106 of the National Historic Preservation Act of 1966 (36 CFR Part 800) and the National Environmental Policy Act (NEPA). The purpose of this letter is to initiate Section 106 consultation with the New Jersey Historic Preservation Office (NJHPO), delineate the project's Area of Potential Effects (APE), identify consulting and interested parties, and outline a Public Participation Plan for the consultation process.

The area of general study is highly urbanized and characterized by relatively flat terrain gradually descending toward the banks of the Raritan River. It includes various railroad-related facilities; sidings; late nineteenth-century industrial buildings; mid-twentieth-century manufacturing and commercial structures; residential properties; and vacant land (See Plates 1-17). The Section 106 consultation process will evaluate the potential for the presence or absence of pre-historic and historic archaeological resources, survey and evaluate all above-ground resources more than 50 years of age for possible eligibility for listing in the National Register of Historic Places (NRHP), and assess project effects on any NRHP listed or eligible properties once a Preferred Alternative has been identified. The results of the survey will be presented in a combined report that meets the survey and reporting guidelines of the NJHPO.

The APE-Archaeology includes the area that will be directly impacted by associated ground disturbances. As noted above, preferred alignment has not been selected, but in general, the APE-Archaeology extends within the existing railroad right-of-way from the Market Street over-grade bridge in Perth Amboy to approximately 400 feet from the river’s edge on the South Amboy side (Figure 3; Plates 1-17).

The APE-Architecture includes the geographic area in which the project may directly or indirectly cause changes in the character or use of historic properties, if they exist in the project area, and has been delineated using current tax parcel data to determine the survey boundaries. This ensures that the full contents of each parcel are properly identified, documented, and evaluated.

To delineate the recommended APE-Architecture, RGA investigators conducted a field reconnaissance of the project site on June 19, 2015, to assess existing conditions and to check sightlines from various vantage points on both sides of the Raritan River. In the absence of more advanced design plans, and to take into account the maximum extent of the undertaking, RGA has assumed that the replacement structure will not exceed the height of the existing high-voltage transmission towers currently standing on each side of the Raritan River Draw swing span, and that possible visual impacts will not extend beyond present-day tower sightlines. Under this model, the viewshed of the proposed APE-Architecture boundaries was spot-verified from all locations to ensure proper coverage.

Anticipated project impacts vary from location to location. On the Perth Amboy side of the river, for example, the impacts are limited mainly to realignment of track and catenary support structures within the existing right-of-way and a portion of the properties west of Second Street. Accordingly, the APE-Architecture in this section of the project area is drawn narrowly to include only bordering properties. Among these is the entire Raritan Copper Works (Former Anaconda Copper Works) (SHPO Opinion: 12/23/1977; DOE: 3/7/1978; SR: 11/27/1998). Anticipated impacts in South Amboy are more complex, because they contemplate shifts in the current right-of-way and possible demolition of structures. Here, the APE-Architecture widens to include large tracts that may experience direct physical impacts. To account for possible visual effects stemming from the replacement bridge itself, the APE-Architecture also widens along the river’s edge in Perth Amboy, where a public park and open space give buildings fronting on these areas a clear view of the current and future structures. Beyond that point, however, the effects of distance and perspective, as well as the presence of intervening shade trees, serve to limit potential visual impacts outside the recommended APE-Architecture (See Figures 3a -3b; Plates 1-17).

Preliminary background research indicates the presence of seven previously identified historic properties inside the proposed APE for both Archaeology and Architecture (Table 1). Field reconnaissance has also identified approximately forty un-surveyed resources over 50 years of age warranting architectural survey and evaluation according to National Register guidelines. The circa 1930 former Jersey Central Power and Light South Amboy Generating Station adjoining the railroad right-of-way has been demolished within the last year and will not be surveyed.

**Table 1:** Previously identified Historic Resources

Resource ID	Property Name/Address	Municipality	NRHP Current Status
1	Raritan River Swing Span Draw	Perth Amboy; South Amboy	Eligible (SHPO Opinion: 6/25/1991)
2	Overhead Contact System, Pennsylvania Railroad Company	Perth Amboy; South Amboy	Eligible (SHPO Opinion: 4/26/2002)
3	New York and Long Branch Railroad	Perth Amboy;	Eligible (SHPO Opinion:

September 28, 2015

Mr. Daniel Saunders

Initiation of Section 106 Consultation, NJ TRANSIT Coast Line Raritan River Draw Bridge Replacement Project

Page 3

Resource ID	Property Name/Address	Municipality	NRHP Current Status
	(NY&LBRR) Historic District	South Amboy	8/20/2004)
4	Perth Amboy and Elizabethport Branch of the Central Railroad of New Jersey	Perth Amboy	Eligible (SHPO Opinion: 8/30/2000)
5	Raritan Copper Works (Former Anaconda Copper Works)	Perth Amboy	New Jersey Register listed; Eligible (SHPO Opinion: 12/23/1977; DOE: 3/7/1978; SR: 11/27/1998)
6	Vessel 98, Traditional Small Barge/Canal Boat	Perth Amboy	Eligible (SHPO Opinion: 7/23/1998)
7	Vessel 99, Traditional Small Barge/Canal Boat	Perth Amboy	Eligible (SHPO Opinion: 7/23/1998)

If you agree that the recommended APEs for both archaeology and architecture, the description of efforts to involve the public, and the list of consulting and interested parties are appropriate for the undertaking, then kindly indicate your acceptance at your earliest convenience. A concurrence line has been provided to facilitate your review. If you have any questions or comments regarding this consultation initiation letter, please contact me at 973-491-7205.

Yours very truly,



Dara Callender

Supervising Compliance Specialist

Attachments

cc: Julie Cowing, AKRF (w/o attachments)  
Damon Tvaryanas, RGA (w/o attachments)

**Initiation of Section 106 Consultation**  
Phase IA Archaeological Survey and  
Historic Architectural Resources Background Study (HARBS) and Effects Assessment  
NJ TRANSIT Coast Line Raritan River Draw Bridge Replacement Project  
City of Perth Amboy and City of South Amboy, Middlesex County, New Jersey

\_\_\_\_\_ I concur that the APEs for both archaeology and architecture, the description of efforts to involve the public, and the list of consulting and interested parties are appropriate. The initiation of Section 106 consultation is concluded.

\_\_\_\_\_ I do not concur for the following reasons:

\_\_\_\_\_  
Daniel Saunders  
Deputy State Historic Preservation Officer

\_\_\_\_\_  
Date

Additional Comments:

**ATTACHMENTS**

**PUBLIC PARTICIPATION PLAN**  
**NJ TRANSIT Coast Line Raritan River Draw Bridge Replacement Project**

Soliciting the views of the public and those groups/individuals with interests in historic preservation is a valued part of the Section 106 process. A Public Participation Plan has been developed to involve the public and interested parties in the identification and evaluation of historic properties that might be affected by the project.

The Public Participation Plan is commensurate with the scope of work for the Coast Line Raritan River Draw Bridge Replacement Project and includes the following:

- A letter notifying and soliciting input on the identification of historic resources in the APE-Archaeology and APE-Architecture to be sent to local preservation groups and individuals with an identified interest in preservation (see attached list). A copy of and responses to the letter will be attached to the final cultural resources documentation.
- The cultural resources documentation to be circulated to the following entitled consulting parties: Federal Transit Administration (FTA), United States Army Corps of Engineers (ACOE); United States Coast Guard (USCG), NJ TRANSIT, Middlesex County, City of Perth Amboy, City of South Amboy, and the NJHPO. No other consulting parties have been identified at this time.
- The cultural resources documentation to be sent to local preservation groups/individuals with an identified interest in historic preservation (see attached list). Responses to the report will be attached to the final cultural resources documentation.
- Tribal consultation will be undertaken at the government-to-government level between the FTA and the Tribal Historic Preservation Officers (THPOs) (see attached list).

**CONSULTING AND INTERESTED PARTIES**  
**NJ TRANSIT Coast Line Raritan River Draw Bridge Replacement Project**

**Recommended Consulting Parties**

Federal Transit Administration (Lead Agency)

New Jersey Transit (Applicant)

United States Army Corps of Engineers

United States Coast Guard

Ronald G. Rios, Freeholder Director  
Middlesex County Board of Chosen Freeholders  
County Administration Building - First Floor  
75 Bayard Street  
New Brunswick, NJ 08901

Honorable Wilda Diaz  
Mayor, City of Perth Amboy  
City Hall  
260 High St.  
Perth Amboy, NJ 08861

Honorable Fred Henry  
Mayor, City of South Amboy  
City Hall  
140 N Broadway St  
South Amboy, NJ 08879

**Recommended Tribal Consulting Parties**

Ms. Neckole Alligood  
Tribal Historic Preservation Officer  
Delaware Nation  
ATTN: Cultural Preservation Department  
PO Box 825  
31064 State Hwy 281  
Anadarko, OK 73005

Blair Fink  
Delaware Tribe Historic Preservation Office  
Temple University, Department of Anthropology  
Gladfelter Hall, Room 207  
1115 W. Polett Walk  
Philadelphia, PA 19122

Ms. Robin Dushane  
Tribal Historic Preservation Officer  
Eastern Shawnee Tribe of Oklahoma  
70555 East 128 Road  
Wyandotte, OK 74370

Kim Jumper  
Tribal Historic Preservation Officer  
Shawnee Tribe of Oklahoma  
PO Box 189,  
29 South Hwy 69A  
Miami, OK 74355

### **Recommended Interested Parties**

Mark Nonestied, Division Head  
Historic Sites & History Services  
Middlesex County Cultural and Heritage Office  
703 Jersey Avenue  
New Brunswick, NJ 08901

Jack M. Dudas  
Perth Amboy City Historian  
City Hall  
140 N Broadway St  
South Amboy, NJ 08879

President  
Kearny Cottage Historical Association  
63 Catalpa Ave  
Perth Amboy, NJ 08861

President  
Historical Society of South Amboy  
100 Harold G. Hoffman Plaza  
South Amboy, NJ, 08879

Mr. Richard Wilson, President  
Jersey Central Chapter  
National Railway Historical Society  
PO Box 700  
Clark, NJ 07066

Richard J. Magee, President  
West Jersey Chapter  
National Railway Historical Society  
234 Oak St  
Audubon, NJ 08106-1534

Alan B. Buchan  
Pennsylvania Railroad Technical and Historical Society  
785 Cornwallis DR  
Mt, Laurel, NJ 08054-3209

Mr. William Marshall  
Camden & Amboy Chapter  
Pennsylvania Railroad Technical and Historical Society  
333 South Pine Avenue  
South Amboy, NJ 08879

John Kilbride, President  
Camden & Amboy Railroad Historical Group  
W-11 Avon Drive East  
East Windsor, NJ 08520-5647

Jim Mackin, President  
Roebling Chapter  
Society for Industrial Archeology  
370 Riverside Drive, Apt. 2B  
New York, NY 10025

Dr. Gregory D. Lattanzi, President  
Archaeological Society of New Jersey  
c/o New Jersey State Museum  
Bureau of Archaeology & Ethnography  
205 West State Street  
PO Box 530  
Trenton NJ 08625-0530

**FIGURES AND PHOTO PLATES**

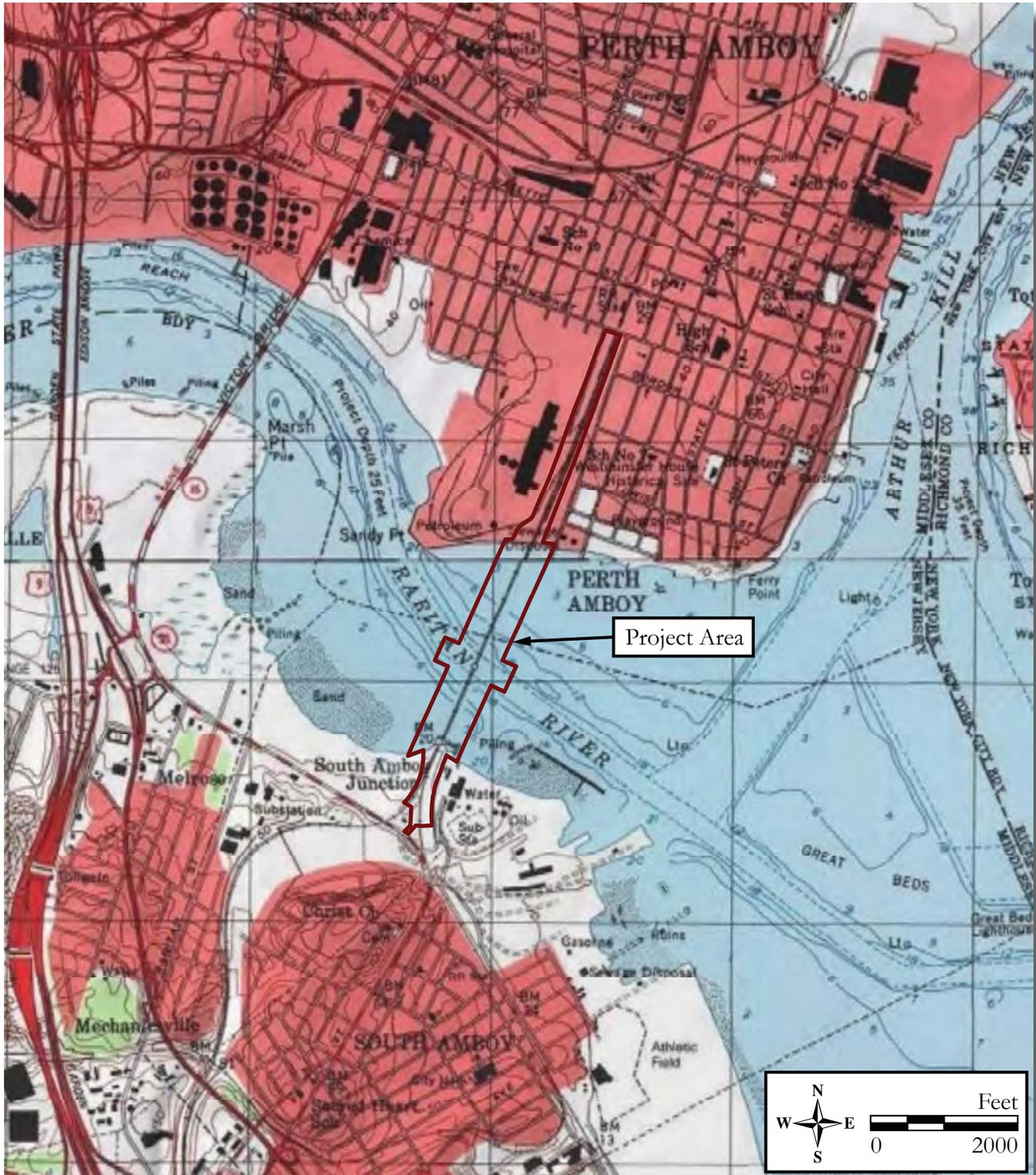


Figure 1: U.S.G.S. Map  
(from 1995 U.S.G.S. 7.5' Quadrangles: Perth Amboy and South Amboy, NJ).

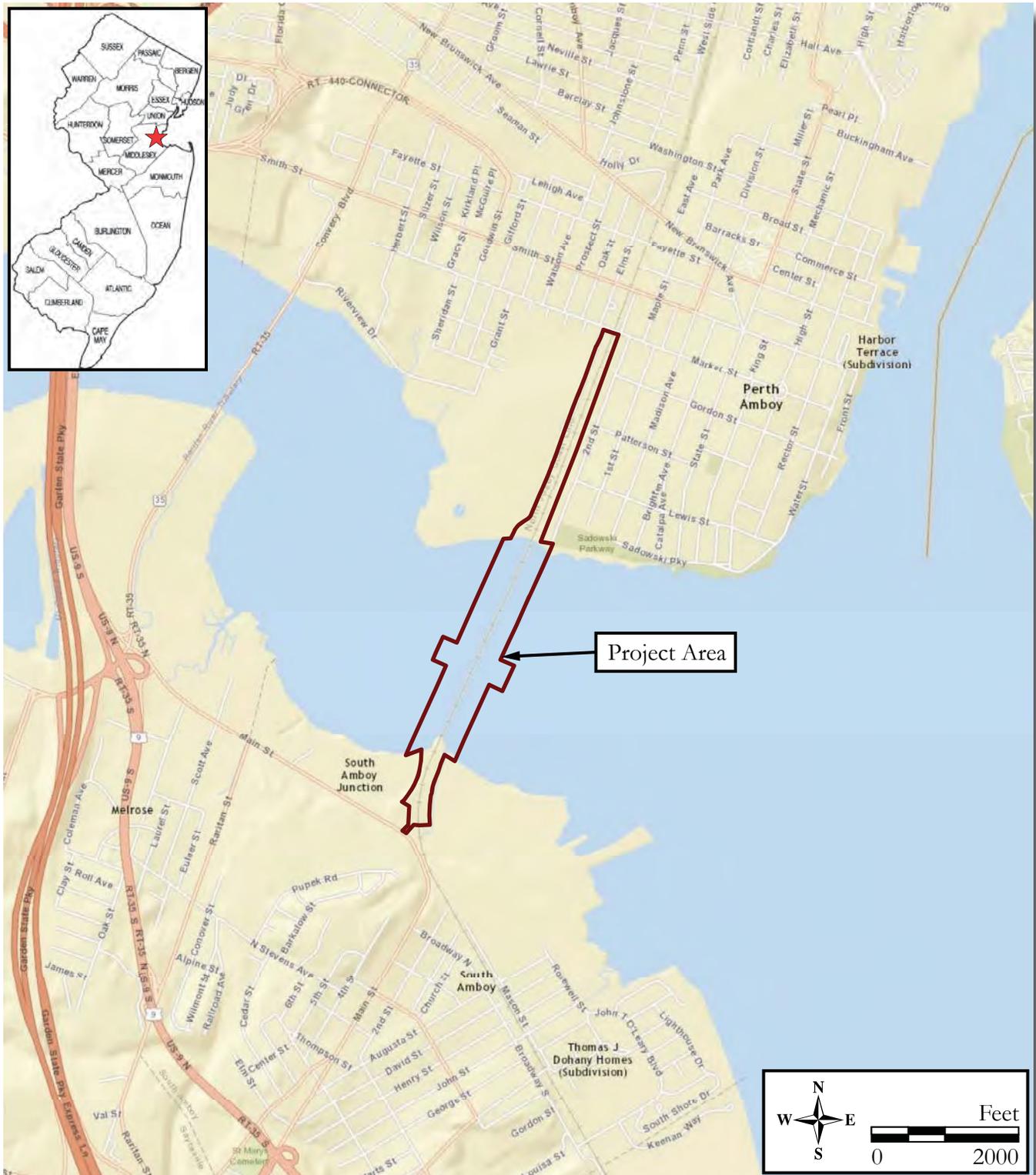


Figure 2: County Map  
(World Street Map, ESRI 2014).



Figure 3a: Proposed Area of Potential Effect (APE) (from NJGIS Digital Orthographic Imagery, 2012).



Figure 3b: Proposed Area of Potential Effect (APE) (from NJGIS Digital Orthographic Imagery, 2012).



Plate 01: Overview, northern limit of project area depicting railroad cut, Perth Amboy.

Photo view:  
Southwest

Photographer:  
Ilene Grossman-Bailey

Date:  
June 22, 2015



Plate 02: Overview, north end of project area depicting Elm Street and the Raritan Copper Works, Perth Amboy.

Photo view:  
Southwest

Photographer:  
Philip A. Hayden

Date:  
June 19, 2015



Plate 03: Overview, project area and Raritan River Draw Bridge from foot of Second Street, Perth Amboy.

Photo view:  
Southwest

Photographer:  
Chelsea Troppauer

Date:  
June 19, 2015



Plate 04: Overview, Former City of Perth Amboy Sewage Works, 2 Second Street, Perth Amboy

Photo view:  
Northeast

Photographer:  
Philip A. Hayden

Date:  
June 19, 2015



Plate 05: Overview, Railroad Signal Bridge, Perth Amboy.

Photo view:  
Northwest

Photographer:  
Philip A. Hayden

Date:  
June 19, 2015



Plate 06: Overview, remains of Vessel 98 and left bank of Raritan River with Raritan River Draw Bridge in background, Perth Amboy.

Photo view:  
Southeast

Photographer:  
Ilene Grossman-Bailey

Date:  
June 22, 2015



Plate 07: Overview, 52 First Street, Perth Amboy.

Photo view:  
Northeast

Photographer:  
Chelsea Troppauer

Date:  
June 19, 2015



Plate 08: Overview, 52 First Street, Perth Amboy with project area in background (far right).

Photo view:  
Southwest

Photographer:  
Chelsea Troppauer

Date:  
June 19, 2015



Plate 09: Overview, 51  
Madison Street, Perth  
Amboy.

Photo view:  
West

Photographer:  
Chelsea Troppauer

Date:  
June 19, 2015



Plate 10: Overview, 51  
Madison Avenue, Perth  
Amboy, with project area  
in background (center and  
right). Trees and distance  
limit visual impacts.

Photo view:  
Southeast

Photographer:  
Philip A. Hayden

Date:  
June 19, 2015



Plate 11: Overview, Raritan River Draw Bridge, including overhead contact system, South Amboy.

Photo view:  
Northwest

Photographer:  
Philip A. Hayden

Date:  
June 19, 2015



Plate 12: Overview, railroad sub-station building, South Amboy.

Photo view:  
Northwest

Photographer:  
Philip A. Hayden

Date:  
June 19, 2015



Plate 13: Overview, SA (a.k.a. Essay) Interlocking Tower, South Amboy. The NY&LB Railroad passes at right. The PRR interchange track ascends behind the tower at left.

Photo view:  
Northwest

Photographer:  
Philip A. Hayden

Date:  
June 19, 2015



Plate 14: Overview, through Plate Girder Bridge (No. 60.71) Carrying PRR Interchange Track over Main Street, South Amboy.

Photo view:  
West

Photographer:  
Philip A. Hayden

Date:  
June 19, 2015



Plate 15: Overview, east portal of Concrete Box Culvert Carrying NY&LBRR Over Un-named Stream, South Amboy.

Photo view:  
North

Photographer:  
Philip A. Hayden

Date:  
June 19, 2015



Plate 16: Overview, southern limit of project area depicting modified Jersey Central Power & Light access bridge (background) and unidentified concrete remains (foreground), South Amboy.

Photo view:  
Northwest

Photographer:  
Philip A. Hayden

Date:  
June 19, 2015



Plate 17: Overview, southern limit of project areas depicting modern combined roadway and railroad bridge carrying the C&ARR Main Line Historic District, South Amboy.

Photo view:  
Southeast

Photographer:  
Philip A. Hayden

Date:  
June 19, 2015

Chris Christie, Governor  
Kim Guadagno, Lieutenant Governor  
Richard T. Hammer, Acting Commissioner  
Veronique Hakim, Executive Director



One Penn Plaza East  
Newark, NJ 07105-2246  
973-491-7000

December 16, 2015

Mr. Daniel Moser  
Community Planner  
Federal Transit Administration Region 2  
One Bowling Green  
Room 429  
New York, NY 10004-1451

Re: Raritan River Drawbridge Replacement Project

Dear Mr. Moser:

NJ TRANSIT requests your approval of the attached list of consulting parties, prepared pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, and associated implementing regulations 36 CFR 800, for the referenced project.

NJ TRANSIT intends to replace the existing swing bridge that carries the North Jersey Coast Line over the Raritan River between Perth Amboy and South Amboy on an alignment adjacent to the existing bridge. The new bridge will be significantly less vulnerable to severe weather events, and proposed components to achieve infrastructure resilience include new reinforced concrete piers on piles, new steel superstructure, new drive motor and electrical controls, and other improvements.

The project is subject to Section 106 of the National Historic Preservation Act. In compliance with CFR Part 800.3, NJ TRANSIT prepared a list of consulting parties and resource organizations (interested parties) for review, with which the New Jersey State Historic Preservation Office concurred in a letter dated October 16, 2015. The list of consulting parties is attached for your use. Should you require any additional information, feel free to contact me at [DCallender@njtransit.com](mailto:DCallender@njtransit.com) or 973-491-7205.

Sincerely,

*Dara Callender*

Dara Callender  
Manager, Environmental Compliance  
Encl.

Cc: J. Colangelo-Bryan, NJ TRANSIT  
R. J. Palladino, NJ TRANSIT

**Raritan River Drawbridge Replacement Project - Section 106 Consulting Parties**

**New Jersey Historic Preservation Office**

**United States Army Corps of Engineers**

**United States Coast Guard**

**Ronald G. Rios, Freeholder Director  
Middlesex County Board of Chosen Freeholders  
County Administration Building – 1<sup>st</sup> Floor  
75 Bayard Street  
New Brunswick, NJ 08901**

**The Honorable Wilda Diaz  
Mayor, City of Perth Amboy  
City Hall, 260 High Street  
Perth Amboy, NJ 08861**

**The Honorable Fred Henry  
Mayor, City of South Amboy  
City Hall, 140 N. Broadway  
South Amboy, NJ 08879**

**Neckole Alligood  
Tribal Historic Preservation Officer, Delaware Nation  
Attn: Cultural Preservation Department  
PO Box 825, 31064 State Hwy. 281  
Anadarko, OK 73005**

**Blair Fink  
Delaware Tribe Historic Preservation Office  
Temple University, Department of Anthropology  
Gladfelter Hall, Room 207  
1115 W. Polett Walk  
Philadelphia, PA 19122**

**Robin Dushane, Tribal Historic Preservation Officer  
Eastern Shawnee Tribe of Oklahoma  
70500 East 128 Road  
Wyandotte, OK 74370**

**Kim Jumper, Tribal Historic Preservation Officer  
Shawnee Tribe of Oklahoma  
PO Box 189, 29 South Highway 69A  
Miami, OK 74355**



U.S. Department  
Of Transportation  
Federal Transit  
Administration

Region 2  
New York  
New Jersey

One Bowling Green  
Room 428  
New York, NY 10004-1415  
212-868-2170  
212-868-2136 (Fax)

December 22, 2015

Dara Callender  
Manager Environmental Compliance  
New Jersey Transit  
One Penn Plaza East  
Newark, NJ 07105-2246

**RE: NJ TRANSIT Raritan River Drawbridge Replacement Project Section 106 Consulting Parties**

Dear Ms. Callender:

The Federal Transit Administration (FTA) concurs with the recommended Section 106 Consulting parties for the Raritan River Drawbridge Replacement Project pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, and associated implementation regulations in 36 CFR 800.3.

Should you require any additional information, please contact Dan Moser, Community Planner at (212) 666-2326 or [daniel.moser@dot.gov](mailto:daniel.moser@dot.gov).

Thank you,

Nancy Danzig  
Director of Planning and Program Development

cc: Linda Di Giovanni, NJ TRANSIT  
Jeremy Colangelo, NJ TRANSIT  
Dan Moser, FTA

**Chris Christie**, Governor  
**Kim Guadagno**, Lieutenant Governor  
**Richard T. Hammer**, Acting Commissioner  
**Dennis J. Martin**, Interim Executive Director

**NJ TRANSIT**  
One Penn Plaza East  
Newark, NJ 07105-2246  
973-491-7000

January 28, 2016

Daniel Saunders  
Deputy State Historic Preservation Officer  
Mail Code 501-04B  
NJDEP-Historic Preservation Office  
5 Station Plaza  
501 East State Street, P.O. Box 420  
Trenton, NJ 08625-0420

Attention: Patty Chrisman

RE: NJ TRANSIT Raritan River Drawbridge Replacement Project, Project #15-2527  
City of Perth Amboy and City of South Amboy, Middlesex County, New Jersey  
Phase IA Archaeological Survey and Historic Architectural Resources  
Background Study (HARBS) and Effects Assessment

Dear Mr. Saunders:

Enclosed for your review please find a Phase IA Archaeological Survey and Historic Architectural Resources Background Study (HARBS) and Effects Assessment for the NJ TRANSIT North Jersey Coast Line Raritan River Drawbridge Replacement Project in the City of Perth Amboy and the City of South Amboy, Middlesex County, New Jersey. This report was prepared by RGA, Inc., NJ TRANSIT's cultural resource consultant for the project.

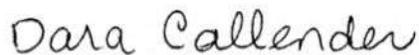
When NJ TRANSIT initiated Section 106 consultation with the New Jersey Historic Preservation Office (NJHPO) by letter dated September 28, 2015), an Area of Potential Effect for the Project (APE) was delineated, and in your letter dated October 16, 2015 (HPO-J2015-176), the NJHPO concurred with the APE for Architectural History and asked for additional information on the APE for Archaeology.

Please note that the APE provided for NJHPO review in September 2015 was based on an alternatives evaluation that was in progress; the APE provided in that letter encompassed an area large enough to accommodate all potential alternatives being considered. Based on the alternatives evaluation, NJ TRANSIT has concluded that it will proceed with a replacement bridge on the west side of the existing Raritan River Drawbridge (also referred to as "railroad north" of the existing bridge). The alignment along the east side of the bridge is no longer under consideration. Therefore, the APE for the project has been reduced on the east side of the bridge. Maps depicting revised APE are attached to this letter. The enclosed Phase IA Archaeological Survey and HARBS and Effects Assessment report presents and evaluates the smaller APE.

Your letter of October 16, 2015 (HPO-J2015-176) requested clarification concerning the potential marine impacts of the proposed undertaking, and specifically whether the project would require use of existing or temporary piers, docks, or other work areas. You also noted that if vessels are necessary, anchor drag lines and/or anchoring of temporary structures will need to be addressed and cultural resources within their APEs will need to be evaluated. The new bridge would be constructed through the use of a trestle constructed alongside the site of the bridge, to provide access to shallow areas close to shore. For construction of the new bridge and demolition of the old bridge, barges would be placed in the deeper parts of the river to serve as platforms for construction equipment. The barges would be secured in place using spud piles, rather than anchors. Both the trestle and the barges would be placed within the APE already established for the project. Based on initial construction staging information being developed by the project engineers, at this time there are no plans for the project to include development of a new dock area for barging activities associated with construction of the new bridge. If those plans change, the need for revisions to the APE would be evaluated through further consultation.

If you have any questions or comments, please contact me at 973-491-7205. We are also available to meet with you to review any comments or concerns you may have.

Yours very truly,



Dara Callender  
Supervising Compliance Specialist

Attachments

cc: Dan Moser, FTA  
Julie Cowing, AKRF (w/o attachments)  
Damon Tvaryanas, RGA (w/o attachments)



Figure 1.3a: Aerial view of the project area showing the location of the APE-Archaeology and APE-Architecture.



Figure 1.3b: Aerial view of the project area showing the location of the APE-Archaeology and APE-Architecture.



**State of New Jersey**

MAIL CODE 501-04B

DEPARTMENT OF ENVIRONMENTAL PROTECTION

NATURAL & HISTORIC RESOURCES

HISTORIC PRESERVATION OFFICE

P.O. Box 420

Trenton, NJ 08625-0420

TEL. (609) 984-0176 FAX (609) 984-0578

CHRIS CHRISTIE

*Governor*

BOB MARTIN

*Commissioner*

KIM GUADAGNO

*Lt. Governor*

March 23, 2016

Dara Callender, P.E.  
Supervising Compliance Specialist  
Environmental Services Unit  
NJ Transit  
One Penn Plaza East  
Newark, New Jersey 07105-2246

Dear Ms. Callender:

As Deputy State Historic Preservation Officer for New Jersey, in accordance with 36 CFR 800: Protection of Historic Properties, as published in the Federal Register on December 12, 2000 (65 FR 777698-77739) and as amended on July 6, 2004 (69 FR 40544-40555), I am providing **Continuing Consultation Comments** for the following proposed project:

**Middlesex County, City of Perth Amboy and the City of South Amboy  
NJ Transit Coast Line  
Raritan River Draw Bridge Replacement Project  
Phase IA Cultural Resource Survey  
Federal Railroad Administration (FRA)**

---

The comments below are in response to the following cultural resource survey report received at the Historic Preservation Office (HPO) on February 2, 2016:

Grossman-Bailey, Ilene and Chelsea Troppauer

January 15, 2016

*Phase IA Archaeological Survey and Historic Architectural Resources Background Survey (HARBS)/Effects Assessment Report, City of Perth Amboy and City of South Amboy, Monmouth County, New Jersey. Prepared for BEM Systems, Inc., Chatham, NJ. Prepared by Richard Grubb & Associates, Inc., Cranbury, NJ.*

**800.4 Identification of Historic Properties**

**Historic Architecture**

Based on alternatives analysis, your January 28, 2016 NJ TRANSIT letter to the HPO states that the undertaking will consist of a new replacement bridge constructed on the western side of the existing Raritan River Drawbridge (or "railroad north"). Therefore, the HPO concurs that the revised

area of potential effects (APE) for Architectural History (Figures 1.3a-1.3b) is appropriate for the undertaking as currently defined.

I concur with the findings of the submitted *Phase IA Archaeological Survey and Historic Architectural Resources Background Survey* that the following previously identified historic properties are located within the project's APE for Historic Architecture and are either listed or eligible for listing in the New Jersey and National Registers of Historic Places:

- Raritan Copper Works (demolished)
- New York & Long Branch Railroad Historic District (NY&LBRRHD)
- Perth Amboy & Elizabethport Branch of the Central Railroad Company of New Jersey Historic District (CRRNJHD)
- Overhead Contact System, Pennsylvania Railroad Company (PRR)
- Raritan River Swing Span Draw Bridge

As Deputy State Historic Preservation Officer, I concur with the findings of the above-referenced report, as follows:

- A. The following resources contribute to the New York & Long Branch Railroad Historic District (NY&LBRRHD):
  - NJ TRANSIT 1941 Essay Interlocking Tower
  - Railroad electric substation (built between 1923 to 1931)
  - Concrete box culvert (built between 1910 and 1943)
- B. The Pennsylvania Railroad's 1917 single-span, riveted steel through-plate girder Bridge No. 60.71 contributes to, and expands the boundary of, the Camden & Amboy Railroad Main Line Historic District. In consequence, this is a new SHPO Opinion of Eligibility.

The HPO understands the project, as designed, will remove elements or all of the following historic properties: Raritan River Swing Span Draw Bridge, the New York & Long Branch Railroad Historic District (NY&LBRRHD), Overhead Contact System for the Pennsylvania Railroad Company, the Perth Amboy & Elizabethport Branch of the Central Railroad Company of New Jersey Historic District (CRRNJHD) and Bridge No. 60.71 within the Camden & Amboy Railroad Main Line Historic District. Effects to historic properties will be assessed once identification of historic properties, particularly archaeological properties, is completed within the undertaking's APE.

### Archaeology

I concur with the findings of the above-referenced report that the following previously identified historic property are located within the project's APE for archaeology and are eligible for listing in the New Jersey and National Registers of Historic Places:

- Vessel 98, Transitional Small Barge/Canal
- Vessel 99, Transitional Small Barge/Canal

The above-referenced report states that the terrestrial APE-archaeology has a low potential to contain terrestrial archaeological resources due to visible surface disturbance and recommends no additional archaeological survey. The HPO concurs that no additional terrestrial archaeological survey is necessary based on the report documentation that the pre-urban terrestrial APE existed

predominantly as tidal marsh and sand dune. While the report provides detailed data on Pre-Contact period exploitation of the Raritan River visually expressed as shell middens, the report does not address the potential for deeply buried Pre-Contact period archaeological sites below the former tidal marsh complex within portions of the northern and southern APEs-archaeology. As construction plans are not yet fully developed, consideration of project impacts on deeply buried archaeological resources will be necessary for any large, deep excavation caissons or pits along the shoreline as part of the undertaking.

I concur with the Phase IA report's recommendation for the need for underwater archaeological survey. Please be aware, underwater survey for wet debris removal as part of the Superstorm Sandy recovery program identified numerous submerged targets and probable shipwrecks within and adjacent to the APE-archaeology. The HPO recommends that underwater archaeological survey be done in conformance with BOEM's 2015 Phase I underwater archaeological survey guidelines for the Atlantic available here: [http://www.boem.gov/Guidelines\\_for\\_Providing\\_Archaeological\\_and\\_Historic\\_Property\\_Information\\_Pursuant\\_to\\_30CFR\\_585/](http://www.boem.gov/Guidelines_for_Providing_Archaeological_and_Historic_Property_Information_Pursuant_to_30CFR_585/). However, the HPO recommends a maximum line spacing of 75 feet (25 meters) within State waters.

The HPO looks forward to additional consultation with FRA regarding the results of Phase I underwater archaeological survey, impacts to any deeply buried archaeological resources, and more detailed project plans once developed to better understand any construction impact(s) on the National Register eligible Vessels 98 and 99 and methods for avoidance and/or mitigation.

#### **Additional Comments**

Thank you again for providing this opportunity for review and comment on the potential for this project to affect historic properties. The HPO looks forward to continued consultation, future detailed project plans and documents, and any additional cultural resource reports as the project is developed. Any mitigation will need to be developed in consultation between the FTA, NJ Transit, HPO, and any consulting parties with a demonstrated interest in the undertaking. Please refer to HPO project number 15-3527 in any future emails, telephone calls, submissions, or written correspondence in order to expedite our review and response. If you have any questions, please feel free to contact my staff members Vincent Maresca at (609) 633-2395 or at [vincent.maresca@dep.nj.gov](mailto:vincent.maresca@dep.nj.gov) with questions regarding archaeology or Patty Chrisman at (609) 984-0850 or at [patty.chrisman@dep.nj.gov](mailto:patty.chrisman@dep.nj.gov) with questions regarding historic architecture, historic districts, or historic landscapes.

Sincerely,



Daniel D. Saunders  
Deputy State Historic  
Preservation Officer

c. Ilene Grossman-Bailey, RGA

DDS/KJM/VM

**Appendix B**

**SECTION 106 COORDINATION**

**B-2: Programmatic Agreement**

**PROJECT PROGRAMMATIC AGREEMENT  
AMONG  
THE FEDERAL TRANSIT ADMINISTRATION,  
THE NEW JERSEY TRANSIT CORPORATION,  
AND THE NEW JERSEY STATE HISTORIC PRESERVATION OFFICER  
REGARDING THE  
NEW JERSEY TRANSIT NORTH JERSEY COAST LINE  
RARITAN RIVER BRIDGE REPLACEMENT PROJECT  
CITY OF PERTH AMBOY AND CITY OF SOUTH AMBOY,  
MIDDLESEX COUNTY, NEW JERSEY**

**WHEREAS** the New Jersey Transit Corporation (NJ TRANSIT) is proposing a project to construct a new Raritan River rail bridge serving the NJ TRANSIT North Jersey Coast Line and remove the existing bridge (“The Project”). The replacement bridge will be located parallel to and immediately west of the existing bridge and will include a moveable swing span to replace the existing swing bridge. Most, or all, of the existing bridge will be removed after completion of the new bridge. The Project will also include the relocation of communication and signal systems and new catenary supports and wires; and

**WHEREAS** NJ TRANSIT is the Project sponsor and the Federal Transit Administration (FTA) is the Project’s lead federal agency pursuant to the National Environmental Policy Act (“NEPA” (42 U.S.C. §4321 *et. Seq.*) and is responsible for compliance with Section 106 of the National Historic Preservation Act (16 U.S.C. §470f, and herein “Section 106”); and

**WHEREAS** NJ TRANSIT, FTA and the New Jersey State Historic Preservation Officer (NJSHPO) through Section 106 consultation determined that it is appropriate to enter into this Programmatic Agreement (PA), pursuant to Section 800.14(b) of 36 C.F.R. part 800 the implementing regulations for Section 106, which will govern the implementation of the Project and satisfy FTA’s compliance with Section 106 regarding the treatment of historic properties; and

**WHEREAS** the FTA through NJ TRANSIT undertook consultation with the NJSHPO on September 28, 2015, October 16, 2015, January 28, 2016, and March 23, 2016 in order to identify consulting parties, to present a public outreach plan, to define the Project’s area of potential effects (APE) as illustrated in Attachment 1, and to assess the Project’s effects on historic properties; and

**WHEREAS** the FTA in consultation with NJ TRANSIT and the NJSHPO, have determined that the undertaking will have an adverse effect on the Raritan River Swing Span Draw Bridge (SHPO Eligibility Opinion: 6/25/1991), the Pennsylvania Railroad Overhead Contact System (SHPO Eligibility Opinion: 4/26/2002), the New York & Long Branch Railroad Historic District (SHPO Eligibility Opinion: 8/24/2004), the Central Railroad of New Jersey Perth Amboy & Elizabethport Branch Historic District (SHPO Eligibility Opinion: 8/30/2000), the Camden & Amboy Railroad Main Line Historic District (SHPO Eligibility Opinion: 10/4/1991; 3/23/2016); and

**WHEREAS** the APE may contain Vessels 98 and 99 (SHPO Eligibility Opinion: 7/23/1998) but their location and depth is unclear requiring additional archaeological study, impact evaluation, and/or mitigation if either vessel is determined to be within the APE; and

**WHEREAS** research has determined that deeply buried Native American archaeological resources and/or submerged historic shipwreck-related archaeological resources may be present within a portion of the APE, and that the undertaking may result in an adverse effect upon such archaeological remains, should they exist; and

**WHEREAS** the FTA and NJ TRANSIT have consulted with the NJSHPO, and the FTA has consulted with Tribal Historic Preservation Officers of the Delaware Nation, the Delaware Tribe, the Eastern Shawnee Tribe of Oklahoma, and the Shawnee Tribe (Tribal Officials) pursuant to 36 CFR Part 800 of the regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470f); and

**WHEREAS** the full effects on archaeological historic properties, if present, cannot be fully determined prior to completion of the NEPA process; and

**WHEREAS** the FTA through NJ TRANSIT has consulted with Amtrak, Consolidated Rail Corporation (Conrail), Middlesex County, the City of Perth Amboy, the City of South Amboy, the United States Coast Guard, and the United States Army Corps of Engineers regarding the effects of the undertaking on historic properties; and

**WHEREAS** the FTA through NJ TRANSIT has agreed to enter into a Programmatic Agreement (PA) pursuant to 36 CFR 800.14(b) to implement a series of stipulations to mitigate identified adverse effects to architectural historic properties, to perform additional archaeological investigations and evaluations to determine the presence of archaeological historic properties, develop ways to avoid and/or minimize effects to any archaeological historic properties, and to implement data recoveries and/or other alternative mitigation strategies during the Project's design phase if archaeological historic properties are determined to exist within the APE and cannot be avoided; and

**WHEREAS** in accordance with 36 CFR 800.6(a)(1), the FTA has notified the Advisory Council on Historic Preservation (ACHP) of its Adverse Effects determination with specified documentation on March 30, 2017, and the ACHP has chosen not to participate in the consultation in a letter dated April 17, 2017 pursuant to 36 C.F.R. 800.6(a)(1)(iii);

**NOW, THEREFORE,** the FTA, NJ TRANSIT, and the NJSHPO agree that the Project shall be implemented in accordance with the following stipulations in order to take into account the effects of the undertaking on historic properties.

## **STIPULATIONS**

The FTA through NJ TRANSIT shall ensure that the following measures are carried out:

### **I. RECORDATION**

The Raritan River Swing Span Draw Bridge, and contributing elements of the Pennsylvania Railroad Overhead Contact System, New York & Long Branch Railroad Historic District, Central Railroad of New Jersey Perth Amboy & Elizabethport Branch Historic District and the Camden & Amboy

Railroad Main Line Historic District within the project's APE shall be documented consistent with the Historic American Building Survey (HABS)/Historic American Engineering Record (HAER) Level III standards. NJ TRANSIT will use persons meeting the professional qualifications standards specified in Part V. of this PA to document existing listed and eligible resources that will be removed or altered as a result of the Project. For the photo documentation, which will consist of the use of large film format for recordation of the historic Raritan Bridge structures and the use of either large format film or digital photography for other historic resources as deemed appropriate based upon consultation with the NJSHP, NJ TRANSIT will use persons with experience in the respective forms of large format photography. This documentation effort shall include detailed descriptions of the Perth Amboy & Elizabethport Branch Signal Bridge, the Essay Interlocking Tower and Substation, as well as a full background history of the rail crossing of the Raritan River at this location including discussion of this bridge type's technology, its prevalence, and how many of this type still exist.

- A. As part of the recordation, and in consultation with the NJSHP and any consulting parties, NJ TRANSIT shall actively solicit from the public and attempt to obtain from other accessible archival sources, printed, graphic, and photographic information regarding the Raritan River Swing Span Draw Bridge and associated railroad infrastructure. The compiled information will be evaluated and (as deemed appropriate during consultation) duplicated as part of the recordation document.
- B. NJ TRANSIT will prepare and provide the FTA and the NJSHP with a draft copy of the recordation document for review and comment. Completion of the photographic recordation, including NJSHP review and approval of same, will occur within six (6) months of letting the main construction contract and prior to the initiation of any demolition or construction activity. NJ TRANSIT and the NJSHP shall review and concur that all other elements of the recordation are completed within one (1) year of letting the construction contract.
- C. Archival copies of the final recordation document will be provided to the NJSHP, National Park Service, the New Jersey State Library, the Rutgers University Special Collections and University Archives, and the Perth Amboy and South Amboy Public Libraries. Additional non-archival copies will be furnished to the PRR Technical & Historical Society and the Camden & Amboy Railroad Historical Society, and any other consulting party requesting a copy.

## **II. INTERPRETIVE DISPLAYS**

NJ TRANSIT in consultation with the NJSHP shall develop plans and an implementation schedule for the preparation and installation of an interpretive display along the affected North Jersey Coast Line (NJCL) or at NJ TRANSIT's South Amboy and Perth Amboy Stations or another location mutually acceptable to all parties (such as at the location of interpretive materials being prepared for the South Amboy Intermodal Ferry project). The content of these displays shall also be developed in consultation with the NJSHP and draw upon the research and documentation conducted for the recordation and archaeology stipulations in this PA. Possible themes may include, but are not limited to, the Camden & Amboy Railroad, maritime traffic on the Raritan River, movable bridge technology, New York & Long Branch Railroad, and the Central Railroad of New Jersey Perth Amboy & Elizabethport Branch.

### **III. SALVAGE OF MATERIALS**

NJ TRANSIT shall consult with the NJSHPD, any consulting parties, and FTA to develop a plan for the potential salvage and possible reuse for interpretive purposes of two Pennsylvania Railroad catenary structures (and possibly associated wiring) from the Raritan River Swing Bridge or its approaches, and the Perth Amboy & Elizabethport Branch Signal Bridge. The plan shall at minimum include the following provisions:

1. NJ TRANSIT and the NJ SHPO shall consult with the New Jersey Department of Transportation (NJDOT) and the City of South Amboy concerning the two Pennsylvania Railroad catenary structures and associated wiring, and contact the City of Perth Amboy concerning the Perth Amboy & Elizabethport Branch Signal Bridge. NJ TRANSIT shall provide the NJSHPD and FTA with copies of correspondence between NJ TRANSIT and NJDOT, the City of South Amboy, and the City of Perth Amboy. Should any of these third party contacts not be responsive to outreach efforts, NJ TRANSIT shall continue a good faith effort to coordinate with these three parties over the course of six months from the removal of the structures and shall document such efforts in materials to be provided to the NJSHPD and FTA for the project record.
2. If it is determined that all or some of the structures can be salvaged and potentially reused for interpretive purposes at these locations or elsewhere, NJ TRANSIT shall store the catenary structures (and possibly associated wiring) and/or Signal Bridge until ownership of the structures is transferred or, if no owner can be found, for a period of no longer than one year following the removal /disassembly of the structures.
3. All prospective recipients shall be informed that the structures will be made available in “as-is” condition, to include any permanent or temporary damage or disassembly necessitated by their removal. NJ TRANSIT will make a good faith effort to minimize damage caused by the structures’ removal.
4. As part of the mitigation under Section 106 and to implement the plan for interpretive displays consistent with Stipulation II above, the NJSHPD and NJ TRANSIT will enter agreements with recipient agencies to ensure the structures are preserved for public or research interpretive use. These agreements shall include assurances that NJ TRANSIT has no legal liability for completion of mitigation conditions once the agreements have been executed and ownership of the structures has been transferred to receiving entities.
5. In the event NJDOT and the respective cities decline ownership of the structures, NJ TRANSIT and NJSHPD shall coordinate to identify and contact other prospective curators of the structures before the end of the one-year period NJ TRANSIT is obligated to store the structures.
6. After the close of the maximum one-year storage period, if suitable locations for reutilization have not been identified, and after NJ TRANSIT has provided NJSHPD with copies of written correspondence between NJ TRANSIT and NJDOT showing that NJDOT and other prospective recipients are unable or unwilling to take possession of salvaged materials, NJ TRANSIT shall be free to dispose of the structures in whatever manner it prefers, subject to any applicable federal and or state disposal or other requirements.

#### IV. PROTOCOLS FOR ADDITIONAL ARCHAEOLOGICAL INVESTIGATIONS

- A. Archaeological Monitoring of Geotechnical Cores. A qualified geomorphologist with demonstrated experience shall inspect the soil boring samples, soil boring logs undertaken in connection with the Raritan River Bridge Replacement Project, and other relevant background data. Based on the review of the borings and the potential for a pre-contact landform, the geomorphologist may also monitor future soil borings to inspect the portions of the soil column to determine if cultural bearing deposits are present. This work would be undertaken in order to gain information concerning deeply buried terrestrial landforms in the vicinity of the shorelines. If submerged pre-contact landforms are identified, the NJSHPO, FTA, and NJ TRANSIT shall consult regarding the scope of work for any additional archaeological monitoring of the borings. Initial consultation between signatories regarding establishing a process for additional investigations, avoidance, and/or mitigation will occur no later than 15 days following notification of discovery by the geomorphologist. The signatories will follow all requirements of Section 106, including consultation with other parties as needed. NJ TRANSIT and FTA will not be required to conduct additional soil borings and other investigations outside of the area of the discovery that is potentially disturbed by Project implementation. Mitigation shall at a minimum include a report of all investigations in a document meeting the NJSHPO's *Guidelines for Preparing Cultural Resources Management Archaeological Reports Submitted to the Historic Preservation Office*. Additional stipulations for any discoveries that include human remains or cultural artifacts (to include tribal discoveries) are detailed in Stipulation IV, Parts E. and F. below.
- B. Underwater Archaeological Investigations. A Qualified Maritime Archaeologist shall review bathymetric survey data collected previously and in connection with the current undertaking in order to determine if anomalies potentially indicative of previously unidentified shipwrecks or other maritime archaeological resources are present within the APE-Archaeology. Additional research shall also be undertaken prior to construction to try to pinpoint or discover more about any identified anomalies and whether they could be shipwrecks over 50 years old. The NJSHPO, FTA, and NJ TRANSIT shall determine on the basis of this review if an underwater archaeological investigation of any such anomalies is merited to evaluate the National Register of Historic Places (NRHP) eligibility of any resources identified and to document and record any such eligible resources. If NRHP-eligible resources are identified within the APE-Archaeology, the NJSHPO, FTA, and NJ TRANSIT shall consult to develop ways to avoid, minimize, and/or mitigate any adverse effects on historic properties prior to project implementation. The signatories will follow all requirements of Section 106 and other applicable laws. NJ TRANSIT and FTA shall not be required to expand underwater archaeological investigations beyond what is necessary to investigate discovered resources (e.g. ships, structures) lying completely or partially within the APE-Archaeology and/or potentially disturbed by Project implementation. Additional stipulations for any discoveries that include human remains or cultural artifacts, including tribal discoveries, are detailed in Stipulation IV, Parts E. and F. below. All survey shall comply with the Bureau of Ocean Energy Management's underwater archaeological survey guidelines presented in the March 2017 *Guidelines for Providing Archaeological and Historic Property Information Pursuant to 30 CFR Part 585* including guidance regarding the Atlantic Ocean.
- C. Mitigation/Archaeological Data Recovery for Vessels 98 and 99. An archaeologist meeting the qualifications set forth in the Secretary of the Interior's Professional Qualifications Standards [48 FR 44738-44739] and with at least ten years of experience in the field of maritime

archaeology shall undertake an on-site evaluation, and as appropriate, complete a Phase III research design and data recovery plan in consultation with the NJSHPD to document the remains of Vessels 98 and 99. The goal of the evaluation shall be to assess and document the integrity and physical characteristics of Vessels 98 and 99 with a data recovery plan to be implemented concurrently as appropriate.

1. Any data recovery plan shall include a schedule for the completion of all field and lab work, public outreach initiatives, and the submission of draft and final reports within an agreed upon time frame. The archaeologist will submit the Phase III scope of work/research design and data recovery plan to the NJSHPD, FTA, and NJ TRANSIT for review and approval prior to conducting the Phase III archaeological data recovery. Phase III fieldwork will be initiated upon NJSHPD, FTA, and NJ TRANSIT's approval of the data recovery plan and completed within a time frame to be specified by the Phase III research design and data recovery plan. All work will be completed in advance of the commencement of construction activities.
2. In addition, the remains of Vessels 98 and 99 shall also be documented with digital photographs and measured drawings of hull remains, with a historic context component addressing canal boat design and maritime traffic on the Raritan River between the Delaware and Raritan Canal Outlet Lock at New Brunswick and the Raritan Bay. This documentation will be provided to NJSHPD and local archives and other relevant repositories determined in consultation with NJSHPD and consulting parties.
3. If excavations at this location are not feasible due to logistical factors, alternative mitigation options will be evaluated in consultation with NJSHPD, FTA, and NJ TRANSIT.

D. General Provisions for Archaeology

1. Records and artifacts from sites eligible or listed in the NRHP will be curated in accordance with 36 CFR Part 79. All materials resulting from archaeological survey work will be maintained in accordance with 36 CFR Part 79 until their analysis is complete. A good faith effort will be made to find a suitable repository that will accept collections from NRHP-eligible sites. Should such a repository not be identified, the artifacts will be transferred to NJ TRANSIT for storage.
2. All final archaeological reports will be distributed to the NJSHPD. In addition, other qualified agencies and consulting parties may obtain final archaeological reports upon request in order to ensure the security of archaeological sites in keeping with the requirements of Section 304 of the National Historic Preservation Act.
3. Upon completion of the field investigations and receipt of a written release from the NJSHPD, FTA, and NJ TRANSIT, construction work may proceed within the limits of the archaeological site.
4. In all instances, the NJSHPD shall have thirty (30) days to review and comment on all submissions.

E. Discovery of Human Skeletal Remains. If human skeletal remains are encountered anywhere on the Project site, they will be treated in accordance with the current guidelines of the

NJSHPO, and with the applicable provisions of the New Jersey Cemetery Act, 2003. If it is determined that the skeletal remains (and any associated grave artifacts) are Native American, NJ TRANSIT will promptly notify the NJSHPO and the FTA and the responsible Tribal Official(s). The NJ TRANSIT and FTA will comply with the Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 and its implementing regulations at 43 CFR Part 10. NJ TRANSIT will cease construction activities at the location of the discovery until such time as the significance and disposition of said discoveries can be determined. In addition, if any discovered human remains or cultural items are identified as affiliated with the Delaware Tribe, NJ TRANSIT will comply with the “Delaware Tribe of Indians Policy for Treatment and Disposition of Human Remains and Cultural Items That May Be Discovered Inadvertently during Planned Activities” (see Attachment 4).

- F. Unanticipated Discoveries. All unanticipated historic and/or pre-contact archaeological discoveries resulting from Project activities made anywhere on the Project site shall be treated in accordance with the procedures outlined in 36 CFR 800.11 and CFR 800.13. In the event that unanticipated discoveries made during execution of the Project include Native American cultural archaeological resources, NJ TRANSIT will cease construction in the area of the discoveries until such time as the significance and disposition of said discoveries can be determined. NJ TRANSIT and FTA will notify the responsible Tribe Officials and consult with the affected Tribe on how to treat archaeological resources as required prior to resuming construction activities.

## **V. PROFESSIONAL QUALIFICATIONS**

NJ TRANSIT will ensure that all work proscribed by this PA is carried out by/under the direct supervision of a person or persons meeting at a minimum the appropriate Secretary of the Interior’s Professional Qualifications Standards [48 FR 44738-44739].

## **VI. DESIGN REVIEW**

NJ TRANSIT, in consultation with the NJSHPO and FTA, shall ensure that the design drawings and technical specifications for the proposed project adhere to the recommended approaches to the Secretary of the Interior’s Standards and Treatments for Historic Properties and are compatible with the character defining features of historic resources within the project APE. NJ TRANSIT shall submit design plans and specifications (as appropriate) at the 30%, 60% and 90% phases for NJSHPO review and approval. NJ TRANSIT shall submit final design drawings and technical specification to the NJSHPO for review and approval prior to the initiation of the bidding process. The NJSHPO shall have thirty (30) days to comment on each of these submissions.

NJ TRANSIT shall submit copies of shop drawings, as appropriate, based upon consultation with the NJSHPO, prepared in response to the approved plans and specifications for NJSHPO review and comment. Samples of new materials, finishes and elements, as appropriate, based upon consultation with the NJSHPO, shall also be submitted, by NJ TRANSIT, to the NJSHPO for review and approval before or during construction. Samples may take the form of physical objects or printed visual representations, whichever form is more appropriate to the material, finish or element as determined in consultation with the NJSHPO.

## **VII. DESIGN MODIFICATIONS**

NJ TRANSIT shall not alter any plan, scope of service, or other document that has been reviewed and commented on pursuant to this PA (except to finalize documents commented on in draft form

or at the preliminary or pre-final engineering phases of the design) without first affording the parties to this PA the opportunity to review the proposed change and determine whether or not it shall require that this PA be amended. NJ TRANSIT will furnish to the NJSHPD and FTA a plan sheet or design sketch showing the proposed change; a written description of why the change is needed; effects to historic properties, if any; and a description of alternatives considered to achieve the same goals, if needed. Within fifteen (15) days of receipt of the documents, the NJSHPD shall either provide written comments to the FTA through NJ TRANSIT or notify NJ TRANSIT that the NJSHPD requires additional time to complete its review. If one or more of the signatories determines that an amendment is needed, then the parties to this PA shall consult in accordance with Stipulation XII. AMENDMENTS below.

### **VIII. CHANGES IN PROJECT AREA/SCOPE**

- A. In the event of any changes to the project scope and/or geographic area, the following measures shall be implemented in consultation with the Signatories:
- B. NJ TRANSIT in consultation with FTA and the NJSHPD shall assess and revise the project APE as needed to incorporate any additional areas that have the potential to affect historic properties.
- C. NJ TRANSIT in consultation with FTA and the NJSHPD shall carry out additional investigations to identify historic architectural and archaeological properties that may be affected.
- D. NJ TRANSIT in consultation with FTA and the NJSHPD shall assess the project's effect on any new historic properties and explore measures to avoid, minimize, or mitigate effects on historic properties.
- E. NJ TRANSIT in consultation with the NJSHPD shall ensure the preparation of appropriate reports and documents, notify Section 106 consulting parties, including Tribal Officials(s), of any changes in the project's effect on historic properties, and provide the NJSHPD and consulting parties an opportunity for review and comment.
- F. If a change in project scope results in additional adverse effects to historic properties, the FTA and NJ TRANSIT shall consult with NJSHPD and all consulting parties to amend the PA in accordance with Stipulation XII. AMENDMENTS below.

### **IX. MONITORING AND REPORTING**

Each year following the execution of this PA until it expires or is terminated, NJ TRANSIT shall provide all signatories to this PA a summary report detailing work undertaken pursuant to its terms. Such report shall include any scheduling changes proposed, any problems encountered, and any disputes and objections received in FTA's efforts to carry out the terms of this PA.

### **X. DISPUTE RESOLUTION**

- A. In the event that a signatory or concurring party to this PA objects to any actions proposed or the manner in which the terms of this PA are implemented, FTA and NJ TRANSIT shall consult with such party to resolve the objection. Except in exigent circumstances as provided in Paragraph E., FTA and NJ TRANSIT will meet with the concurring party within 30 calendar days to resolve the objection.

- B. If after consultation with the objecting party FTA in Paragraph A. above determines that the objection has not been satisfactorily resolved, FTA will, within 15 days of determination, forward documentation relevant to the dispute to the ACHP.
- C. Except in exigent circumstances as provided in Paragraph E. below, when a dispute occurs, and if ACHP agrees to participate, FTA will follow ACHPS's recommendations or comments in reaching a final decision regarding the dispute.
- D. Except in exigent circumstances as provided in Paragraph E. below, in the event ACHP declines to accept FTA's requests for recommendations or does not provide comments within 30 calendar days of receiving pertinent documents, FTA may resolve the dispute without requiring ACHP's concurrence. Prior to reaching a final decision, FTA shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories and concurring parties to the PA, and provide them and the ACHP with a copy of such written response.
- E. In the case of disputes arising under exigent circumstances (such as when construction activities have been suspended or delayed pending resolution of the matter), relevant parties will endeavor to resolve any dispute within seven calendar days.

## **XI. DURATION**

This PA will expire if its terms are not carried out within ten (10) years from the date of its execution. Prior to such time, the FTA through NJ TRANSIT may consult with the other signatories to reconsider the terms of the PA and amend it in accordance with Stipulation XII. AMENDMENTS below.

## **XII. AMENDMENTS**

Any signatory to this PA may request an amendment to this PA at any time, whereupon the signatories will consult in accordance with 46 CFR Section 800.14(b) to consider such amendment. The amendment will be effective on the date a copy is signed by all of the signatories.

## **XIII. TERMINATION**

If any signatory to this PA determines that its terms will not or cannot be carried out, that party shall immediately consult with the other parties to attempt to develop an amendment per Stipulation XII, above. If within thirty (30) 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.

Once the PA is terminated, and prior to work continuing on the undertaking, the FTA must either (a) execute a PA pursuant to 36 CFR 800.6 or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR 800.7. The FTA through NJ TRANSIT shall notify the signatories as to the course of action it will pursue.

Execution of this PA by the FTA, NJ TRANSIT, and the NJSHPO, and implementation of its terms evidence that the FTA has taken into account the effects of this undertaking on historic properties and afforded the ACHP an opportunity to comment.

#### **XIV. CONTACT INFORMATION**

For purposes of notices and consulting pursuant to this PA, the following addresses and contact information should be used for the respective agencies:

##### **NJ TRANSIT**

Dara Callender  
Environmental Services Unit  
NJ TRANSIT  
One Penn Plaza East  
Newark, NJ 07105-2246  
Tel: (973) 491-7205  
Fax: (973) 863-4538

##### **FTA**

Daniel V. Moser  
Federal Transit Administration  
1 Bowling Green, Room 429  
New York, NY 10004-1415  
Tel: (212) 668-2326  
Fax: (212) 668-2136

##### **NJ SHPO**

Katherine J. Marcopul  
Deputy State Historic Preservation Officer  
Mail Code 501-04B  
State of New Jersey  
Department of Environmental Protection  
Historic Preservation Office  
P.O. Box 420  
Trenton, NJ 08625-0420  
Tel: (609) 984-0176  
Fax: (609) 984-0578

## REFERENCES:

Bureau of Ocean Energy Management (US DOI)

2015 *Phase I Underwater Archaeological Survey Guidelines*. Available at [www.boem.gov](http://www.boem.gov).

New Jersey Historic Preservation Office (HPO)

1994 *Guidelines for Preparing Cultural Resource Management Archaeological Reports*. On file, Historic Preservation Office, Trenton, New Jersey.

1996 *Guidelines for Phase I Archaeological Investigations: Identification of Archaeological Resources*. On file, Historic Preservation Office, Trenton, New Jersey.

Richard Grubb & Associates, Inc.

2014 Phase IA Archaeological Survey and Historic Architectural Resources Background Study (HARBS) and Effects Assessment Report, NJ TRANSIT County Yard/Delco Lead Emergency Train Storage and Service and Inspection Facility Project, City of New Brunswick and Township of North Brunswick, Middlesex County, New Jersey, July 2014 [revised November 14, 2014]. On file, New Jersey Historic Preservation Office, Trenton, New Jersey.

## ATTACHMENTS

Attachment 1: Area of potential effect map

Attachment 2: Table of Adversely Affected Resources

Attachment 3: Photos of Historic Resources –Adverse Effects

Attachment 4: NPS NR digital photographic standards

Attachment 5: HAER Level 3 Standards

Attachment 6: Delaware Tribe of Indians Policy for Treatment and Disposition of Human Remains and Cultural Items That May Be Discovered Inadvertently during Planned Activities

**PROJECT PROGRAMMATIC AGREEMENT  
AMONG  
THE FEDERAL TRANSIT ADMINISTRATION,  
THE NEW JERSEY TRANSIT CORPORATION,  
AND THE NEW JERSEY STATE HISTORIC PRESERVATION OFFICER  
REGARDING THE  
NEW JERSEY TRANSIT NORTH JERSEY COAST LINE  
RARITAN RIVER BRIDGE REPLACEMENT PROJECT  
CITY OF PERTH AMBOY AND CITY OF SOUTH AMBOY,  
MIDDLESEX COUNTY, NEW JERSEY**

**FEDERAL TRANSIT ADMINISTRATION**

By: \_\_\_\_\_  
Stephen Goodman, Regional Administrator, FTA Region II

Date: \_\_\_\_\_

**PROJECT PROGRAMMATIC AGREEMENT  
AMONG  
THE FEDERAL TRANSIT ADMINISTRATION,  
THE NEW JERSEY TRANSIT CORPORATION,  
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CITY OF PERTH AMBOY AND CITY OF SOUTH AMBOY,  
MIDDLESEX COUNTY, NEW JERSEY**

**NEW JERSEY TRANSIT CORPORATION**

By: \_\_\_\_\_  
Eric R. Daleo, Assistant Executive Director

Date: \_\_\_\_\_

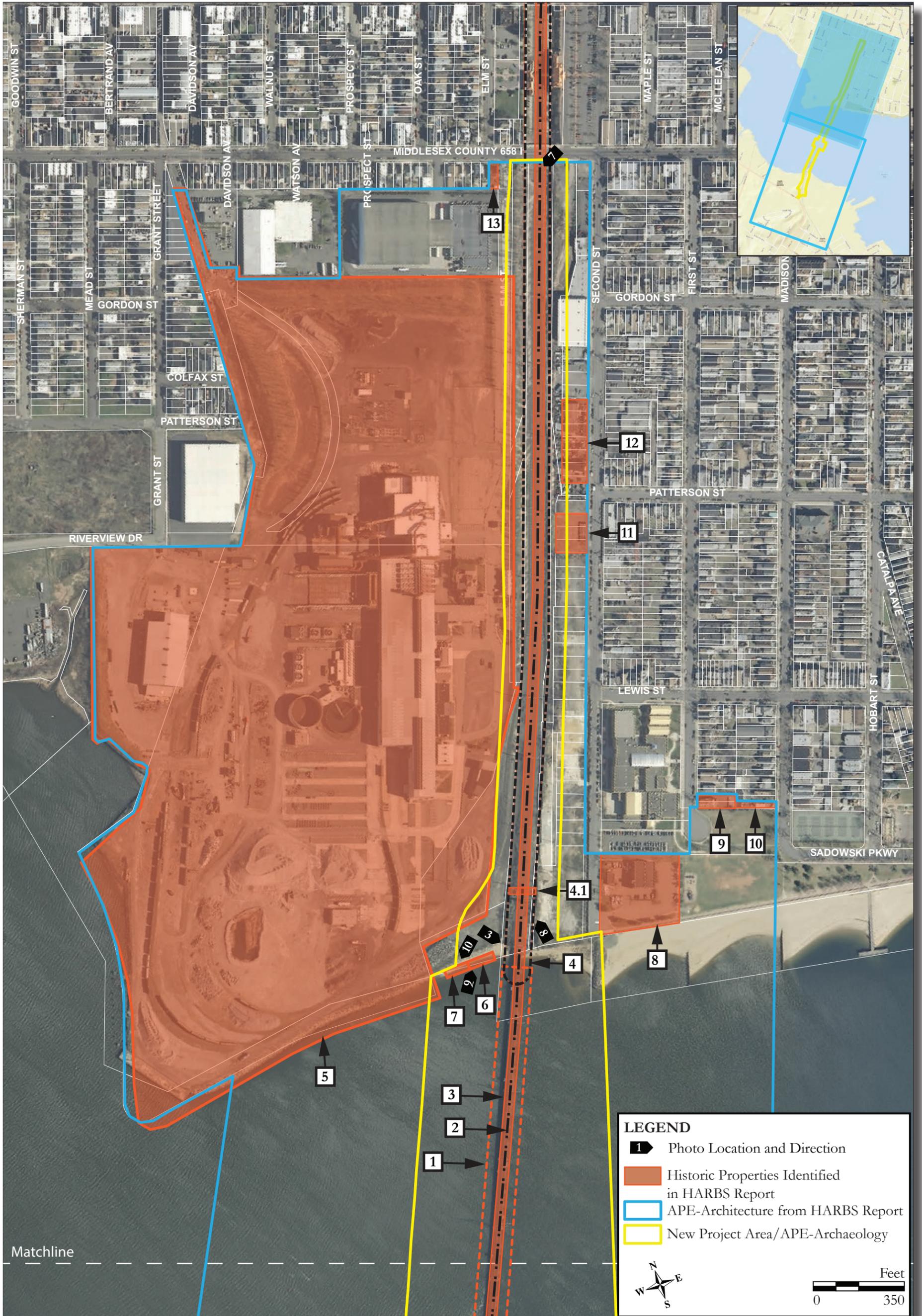
**PROJECT PROGRAMMATIC AGREEMENT  
AMONG  
THE FEDERAL TRANSIT ADMINISTRATION,  
THE NEW JERSEY TRANSIT CORPORATION,  
AND THE NEW JERSEY STATE HISTORIC PRESERVATION OFFICER  
REGARDING THE  
NEW JERSEY TRANSIT NORTH JERSEY COAST LINE  
RARITAN RIVER BRIDGE REPLACEMENT PROJECT  
CITY OF PERTH AMBOY AND CITY OF SOUTH AMBOY,  
MIDDLESEX COUNTY, NEW JERSEY**

**NEW JERSEY STATE HISTORIC PRESERVATION OFFICER**

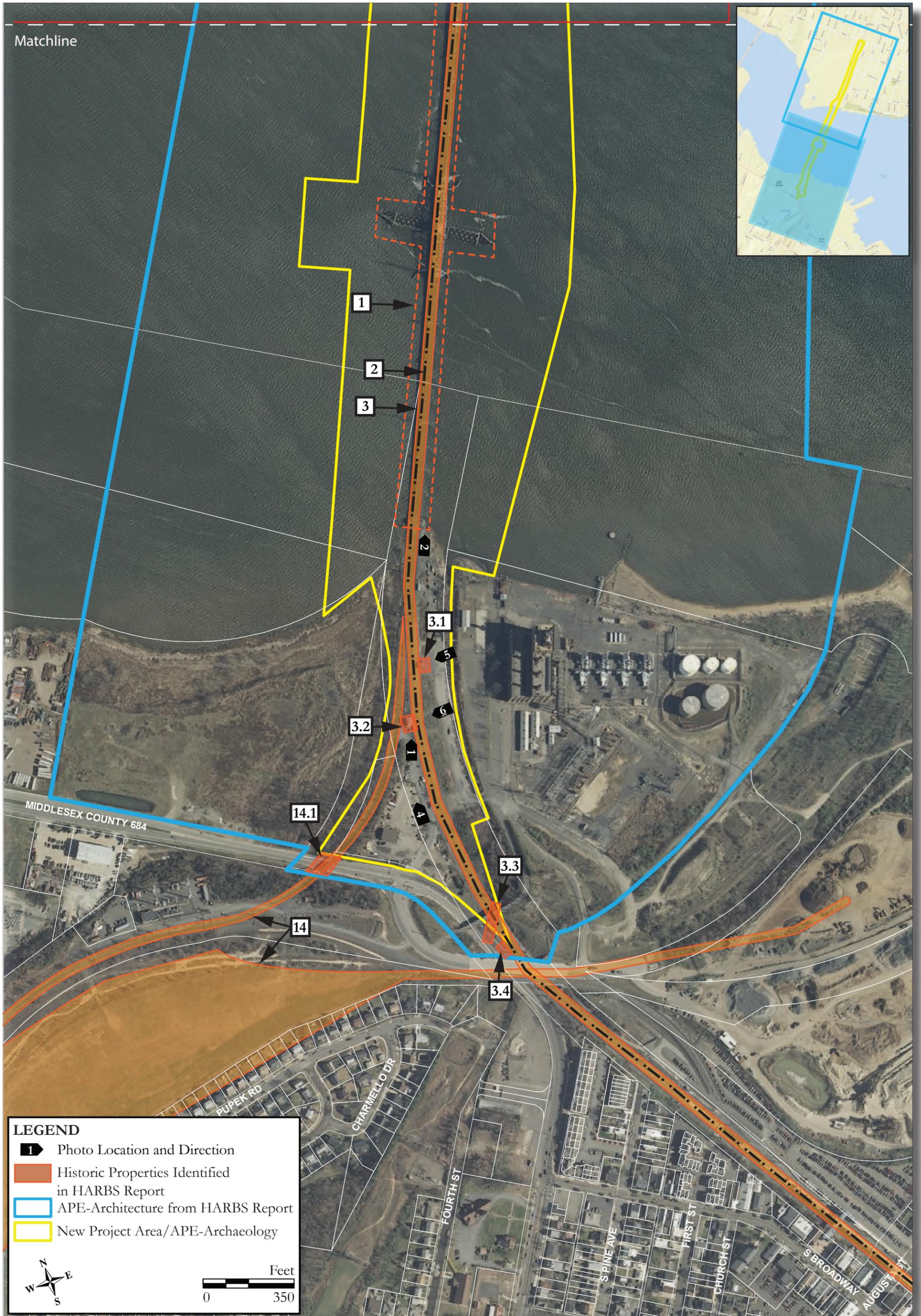
By: \_\_\_\_\_  
Katherine J. Marcopul, Deputy State Historic Preservation Officer

Date: \_\_\_\_\_

**Attachment 1**  
**AREA OF POTENTIAL EFFECT MAP**



Aerial view of the project area in Perth Amboy, showing locations of the historic architectural resources and photo locations and directions in the APE-Architecture



Aerial view of the project area in Perth Amboy, showing locations of the historic architectural resources and photo locations and directions in the APE-Architecture

**Attachment 2  
TABLE OF ADVERSELY AFFECTED RESOURCES**

## Attachment 2: Historic Resources in the Area of Potential Effect

Map ID	Property Name/Address	Municipality	NR Current Status	Assessment of Effects	Plate #s
1	Raritan River Swing Span Draw Bridge	Perth Amboy; South Amboy	Eligible (SHPO Opinion: 6/25/1991)	Adverse Effect	1-3
2	Overhead Contact System, Pennsylvania Railroad Company	Perth Amboy; South Amboy	Eligible (SHPO Opinion: 4/26/2002)	Adverse Effect	1-3
3	New York & Long Branch Railroad (NY&LBRR) Historic District	Perth Amboy; South Amboy	Eligible (SHPO Opinion: 8/20/2004)	Adverse Effect	4
3.1	New York & Long Branch Railroad Electric Substation	South Amboy	Previously un-surveyed	Contributing Resource; Adverse Effect to NY&LBRRHD	5
3.2	NJ TRANSIT Essay Tower	South Amboy	Contributing (SHPO Opinion: 8/20/2004); Previously un-surveyed	Adverse Effect to NY&LBRRHD	6
3.3	Concrete Box Culvert, NJ TRANSIT	South Amboy	Previously un-surveyed	Contributing Resource; No Effect to NY&LBRRHD	
3.4	Pennsylvania Railroad Bridge 60.84 Remains	South Amboy	Previously un-surveyed	Non-Contributing Resource; No Effect	
4	Perth Amboy & Elizabethport Branch of the Central Railroad of New Jersey Historic District	Perth Amboy	Eligible (SHPO Opinion: 8/30/2000)	Adverse Effect	7
4.1	Perth Amboy & Elizabethport Branch of the Central Railroad of New Jersey Railroad Signal Bridge	Perth Amboy	Previously un-surveyed	Contributing Resource of the CRNJ Perth Amboy & Elizabethport Branch; Adverse Effect	8
5	Raritan Copper Works (Former Anaconda Copper Works)	Perth Amboy	New Jersey Register listed; Eligible (SHPO Opinion: 12/23/1977; DOE: 3/7/1978; SR: 11/27/1998)	No Effect	
6	Vessel 98, Traditional Small Barge/Canal Boat	Perth Amboy	Eligible (SHPO Opinion: 7/23/1998)	Adverse Effect	9
7	Vessel 99, Traditional Small Barge/Canal Boat	Perth Amboy	Eligible (SHPO Opinion: 7/23/1998)	Adverse Effect	10
8	Perth Amboy Pump Station, 2 Second Street	Perth Amboy	Previously un-surveyed	Not Eligible; No Effect	
9	52 First Street	Perth Amboy	Previously un-surveyed	Not Eligible; No Effect	
10	51 Madison Avenue	Perth Amboy	Previously un-surveyed	Not Eligible; No Effect	
11	125 Second Street	Perth Amboy	Previously un-surveyed	Not Eligible; No Effect	
12	147 Second Street	Perth Amboy	Previously un-surveyed	Not Eligible; No Effect	

**Attachment 2: Historic Resources in the Area of Potential Effect**

<b>Map ID</b>	<b>Property Name/Address</b>	<b>Municipality</b>	<b>NR Current Status</b>	<b>Assessment of Effects</b>	<b>Plate #s</b>
13	261 Market Street	Perth Amboy	Previously un-surveyed	Not Eligible; No Effect	
14	Camden & Amboy Railroad Main Line Historic District (C&ARRMLHD)	South Amboy	SHPO Opinion: 3/23/2016 (revised SHPO Opinion; boundary clarified SHPO Opinion: 10/4/1991)	Adverse Effect	
14.1	Pennsylvania Railroad Bridge over Main Street (No. 60.71)	South Amboy	Previously un-surveyed	Contributing Resource to Camden & Amboy RR Main Line HD; No Effect	

**Attachment 3**

**PHOTOS OF HISTORIC RESOURCES – ADVERSE EFFECTS**



View of the opened Raritan River Swing Span Draw Bridge from the South Amboy Junction 1



View of the east side of the Raritan River Swing Span Draw Bridge from South Amboy 2



View of the west side of the Raritan River Swing Span Draw Bridge from Perth Amboy **3**



A driveway and parking area adjacent to a commercial building to the left, and the NJ TRANSIT Coast Line (former NY&LBRR) to the right **4**



View of east elevation of the former railroad electric substation in South Amboy 5



View of the east elevation of the Essay Interlocking Tower in South Amboy 6



Overview of the northern portion of the NJ TRANSIT Coast Line (former NY&LBRR) railroad tracks in the APE-Archaeology

7



View of the signal bridge located on the tracks of the former Perth Amboy & Elizabethport Branch of the CRRNJ

8



Remains of NRHP-eligible Vessel 98 (SHPO Opinion: 7/23/1998) on the beach, west of the Raritan River Swing Span Draw Bridge

9



Remains of NRHP-eligible Vessel 99 (SHPO Opinion: 7/23/1998) on the beach, west of the Raritan River Swing Span Draw Bridge

10

**Attachment 4**  
**NPS NR DIGITAL PHOTOGRAPHIC STANDARDS**

# National Register Photo Policy Factsheet updated 5/15/2013

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## Selecting a Digital Camera

**BEST:** Six megapixel or greater digital SLR camera

Acceptable: Two – five megapixel point-and-shoot digital camera

Not acceptable: Camera phones, disposable or single-use digital cameras, digital cameras with fewer than two megapixels of resolution

## Taking the Picture

- Image file format (Set the camera for highest image quality).

**BEST:** Tag Image File format (TIFF) or RAW format images. This allows for the best image resolution.

Acceptable: JPEGs converted to TIFFs, *by a computer conversion process*, are acceptable; however, JPEGs must not be altered in any way prior to conversion, (other than renaming them).

Do not use the JPEG setting on the camera, if a higher quality setting is available.

RGB color digital **TIFFs** are preferred.

Digital Camera Resolution (Set the camera to the maximum or largest pixel dimension the camera allows).

**BEST:** Six megapixels or greater (2000 x 3000 pixel image)

Acceptable: Minimum two megapixels (1200 x 1600 pixel image)

## Renaming the digital TIFF image

All digital image files must be renamed using a standard naming format.

**The TIFF file name must include:**

**State\_county\_property name (or district name)\_0001**

(Use zeros in image numbers to create 4 digit number, e.g. 0002, 0003, etc.)

Example for individual properties:

**AL\_Jefferson County\_Elizabeth Brown House\_0001**

Example for district labels:

**AL\_Jefferson County\_Birmingham Commercial Historic District\_0125**

Example for nominations within MPS:

**AL\_Jefferson County\_NorwoodMPS\_EBrownHouse\_0001**

## Burning the Images onto an Archival Disk

A CD or DVD containing all TIFF images must accompany the photos.

Reminder: JPEGs converted to TIFFs, *by a computer conversion process*, are acceptable; however, JPEGs must not be altered in any way prior to conversion, (other than renaming them). *When image is open on your computer, right click and you will see the image properties (Dimensions, dpi, etc.).*

**Best: CD-R Archival Gold or DVD-R Archival Gold disk**

Acceptable: CD-R, DVD-R, or any disk obtained from a commercial photo processor.

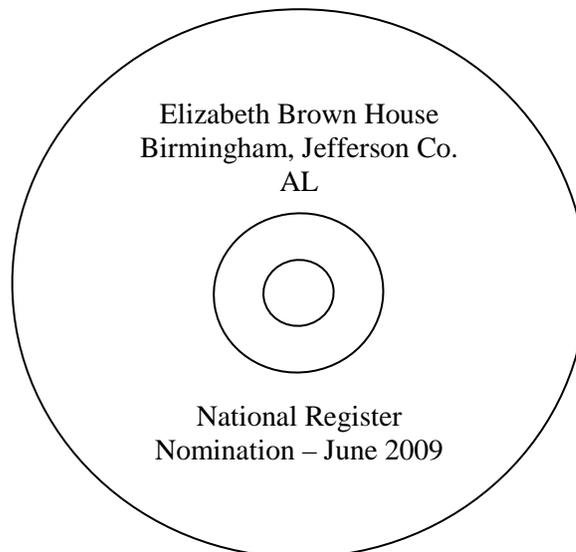
Not acceptable: CD-RW or DVD-RW (if packaging says “rewriteable” do not use).

## Labeling the Disk

**Best: Labels printed directly on the disk by laser printer (non-adhesive).**

Acceptable: Hand-written labels using CD/DVD safe markers OR other markers (Sharpies)

Not Acceptable: Ammonia/solvent-based markers or adhesive stickers



**If you submit the nomination on disk (see our “How to Submit a Nomination on Disk Guidance for how to do this), then you do not need to print the photographs.**

**If you submit the nomination as a paper file then you must print the photographs:**

### **Printing the Images**

**Print photos at 300 dpi (select this option in your computer’s print menu).**

### **Selecting the Paper and Inks**

- We recommend using all materials from one manufacturer (if you have an HP Photo printer, use HP paper and HP inks, likewise if you have an Epson photo printer, then use Epson photo paper and Epson ink.
- Paper specifically designed for photograph printing
- Inks specifically designed for photograph printing

Acceptable: Commercially printed color prints are acceptable (if accompanied by a disk containing the image files produced at the time the prints were made).

Not acceptable: Regular copy/printer papers or the disk only, without prints

### **Identifying Photographic Prints**

Each photograph must be numbered and that number must correspond to the photograph number on the photo log. For simplicity, the name of the photographer, photo date, etc. may be listed once on the photograph log and doesn’t need to be labeled on every photograph.

**Best:** Write the label information within the white margin **on the front** of the photograph using an archival photo labeling pen. Label information can also be generated by computer and printed directly in the white margin (no adhesive labels).

Acceptable: If information is placed on the back of the photograph, write the information using a soft lead pencil or archival photo-labeling pen.

Do not print information on the actual image – use only the photo margin or back of the photograph for labeling.

**At a minimum,** photographic labels must include the following information:  
**Photograph number, Name of the Property, County, and State.**

## Labeling the photographs

### Acceptable Examples:

AL\_Jefferson County\_Birmingham Commercial Historic District\_0001

OR

Photograph 1 of 25: AL\_Jefferson County\_Birmingham Commercial Historic District\_0001

OR

Birmingham Commercial Historic District, Jefferson County, AL  
1 of 25

OR

Birmingham Commercial Historic District  
Jefferson Co., AL  
Photo 1 of 25

## NR Nomination Photograph Log Page

### Examples of acceptable photo pages

Name of Property:	Belcher-Nixon Building
City or Vicinity:	Ensley (Birmingham)
County:	Jefferson County
State:	AL
Name of Photographer:	David B. Schneider
Date of Photographs:	August 2008
Location of Original Digital Files:	411 E. 6th St., Anniston, AL 36207

Photo #1 (AL\_JeffersonCounty\_BelcherNixonBld\_0001)  
South façade (left) and east elevation (right), camera facing northwest.

## OR

Name of Property:	Belcher-Nixon Building
City or Vicinity:	Ensley (Birmingham)
County:	Jefferson County
State:	AL
Name of Photographer:	David B. Schneider
Date of Photographs:	August 2008
Location of Original Digital Files:	411 E. 6th St., Anniston, AL 36207
Number of Photographs:	10

### Photo #1

South façade (left) and east elevation (right), camera facing northwest.

## OR

Name of Property:	Belcher-Nixon Building
City or Vicinity:	Ensley (Birmingham)
County:	Jefferson County
State:	AL
Name of Photographer:	David B. Schneider
Date of Photographs:	August 2008
Location of Original Digital Files:	411 E. 6th St., Anniston, AL 36207

### AL\_JeffersonCounty\_BelcherNixonBld\_0001

South façade (left) and east elevation (right), camera facing northwest.

## 35 mm Photography

Use the following standards:

### Selecting a 35mm Camera

<b>BEST:</b>	35MM SLR Camera
Acceptable:	35MM point-and-shoot camera
Not acceptable:	Disposable Cameras

### Selecting the Film

Acceptable:	35MM black/white film
-------------	-----------------------

Or  
35MM color film with accompanying disk containing the image files

### **Choosing Photographic Paper**

Acceptable: Photographic paper specifically designed for black/white prints  
Or  
35mm black/white images printed on paper designed for *color* prints with an accompanying disk containing digital copies of the images (Disk generated at the time of developing the film)  
Or  
35mm color images printed on paper designed for *color* images with an accompanying disk containing digital copies of the images

### **Labeling the Disk & Naming the Files**

Follow the same disk labeling and renaming the digital file processes as outlined under the digital photography policy guidelines.

If you use a commercial photo printer and receive a disk of image files to submit with your nomination, you will not be required to rename the files. That disk may be submitted as received from your photo processor.

### **Use of National Register Photographs**

By allowing a photograph to be submitted as official documentation, photographers grant permission to the National Park Service to use the photograph for print and electronic publication, and for other purposes, including but not limited to, duplication, display, distribution, study, publicity, and audiovisual presentations.

### **Embedding Images**

Previous policy stated that embedded images could not be embedded within the text of the nomination. Due to advances in our scanning capabilities you can now embed images throughout the nomination in color, greyscale, or black&white for either digital submission or a paper file.

Historic photographs, views, or maps are acceptable. These items can be labeled as figures (e.g. Fig. 1, Fig 2) and *referenced by this label within the nomination text* (e.g. See Figure 1). An “Index of Figures”, if necessary (similar to a photograph log) identifying these figures, should also be included in the Additional Documentation section

## **Guidelines for Photographic Coverage**

Photographs submitted to the National Register of Historic Places and the National Historic Landmarks Survey as official documentation should be clear, well-composed, and provide an accurate visual representation of the property and its significant features. They must illustrate the qualities discussed in the description and statement of significance. Photographs should show historically significant features and also any alterations that have affected the property's historic integrity.

The necessary number of photographic views depends on the size and complexity of the property. **Submit as many photographs as needed to depict the current condition and significant features of the property.** A few photographs may be sufficient to document a single building or object. Larger, more complex properties and historic districts will require a number of photos. Prints of historic photographs may supplement documentation and be particularly useful in illustrating changes that have occurred over time.

### **Buildings, structures, and objects:**

Submit photographs showing the principal facades and the setting in which the property is located.

Additions, alterations, intrusions, and dependencies should appear in the photographs.

Include views of interiors, outbuildings, landscaping, or unusual features if they contribute to the significance of the property.

### **Historic and archeological sites:**

Submit photographs showing the condition of the site and any above-ground or surface features and disturbances.

If relevant to the evaluation of significance, include drawings or photographs illustrating artifacts that have been removed from the site.

At least one photograph must show the physical environment and topography of the site.

### **Architectural and Historic Districts (key all photographs to the sketch map for the district):**

Submit photographs showing major building types and styles, pivotal buildings and structures, and representative noncontributing resources.

Streetscapes and landscapes are recommended. Aerial views may also be useful. Views of significant topographic features and spatial elements should also be submitted.

Views of individual buildings are not necessary if streetscape views clearly illustrate the significant historical and architectural qualities of the district.

### **Archeological Districts:**

Submit photographs of the principal sites and site types within the district following the guidelines for archaeological sites (see above).

**Questions?**

Please contact Alexis Abernathy at (202) 354-2236 or e-mail: [alexis\\_abernathy@nps.gov](mailto:alexis_abernathy@nps.gov). Or Jeff Joeckel at (202) 354-2225 or e-mail: [jeff\\_joeckel@nps.gov](mailto:jeff_joeckel@nps.gov)

**Attachment 5  
HAER LEVEL 3 STANDARDS**

Recordation of the Raritan River Swing Span Draw Bridge and related project elements will be informed by the Level III Standards prescribed by the National Park Service for Historic American Engineering Record (HAER) documentation to satisfy the submission requirements of the New Jersey Historic Preservation Office. The Raritan River Swing Span Draw Bridge will be photographed using a large format view camera and 4"x5" black and white film negatives. The remaining elements of the project can be photographed using either a large format view camera and 4"x5" black and white film negatives or a digital single-lens reflex camera. All photographs will be perspective corrected in the field at the time of capture.

Photographic recordation using a large format view camera will consist of the following:

- Digital prints of images taken using a large format view camera will be printed as contact prints on archivally stable paper and placed in archival sleeves. Digital contact prints will be created from scanning the 4"x5" negative which will be saved as an uncompressed TIF file with a minimum resolution of 300ppi. Each print will have a black (bleed) margin and will show the entirety of the negative to ensure no cropping has occurred. Prints will be labeled on the back using either an archivally safe pencil or archival pen and include the following information: name of resource, address of resource, name of photographer, date photograph was taken, and photograph number.
- Archival sleeves will be labeled with the same aforementioned information using an archivally safe pencil. Negatives will also be placed in archivally stable transparent sleeves.
- Negatives will be labeled with the appropriate photo number using an archival pen. The photo number will key to the accompanying photo index.

Photographic recordation using a digital single-lens reflex camera will consist of the following:

- Photographs of the exterior and interior of the resource(s) taken using a digital single-lens reflex camera. Images must be perspective corrected in the field at the time of capture. Image file format will be Tag Image File (TIF) and consist of a minimum resolution of two megapixels (1200x1600 pixel image).
- Photographs will be printed at 4" x 6" on archivally stable photo paper that has a permanency rating of 75 years or greater. The back of each print will be labeled using either an archivally safe pencil or archival pen with the abovementioned information.
- Prints will be placed in archival sleeves which will be labeled with the abovementioned information using an archivally safe pencil.

In addition to the photographic recordation, the state-level HAER documentation package will include:

- Written data including a description and history of the resource(s) being documented.
- A sketch plan drawing of the resource(s) being documented. The drawing(s) will include photo location arrows.
- An index to photographs which will consist of captions noting directional information and any significant details not readily discernable in the image.

The format of the written component of the state-level HAER documentation package will be informed by the guidelines issued by the National Park Service. The final report will be printed on archival paper.

**Attachment 6**

Delaware Tribe of Indians Policy for Treatment and Disposition  
of Human Remains and Cultural Items That May be Discovered  
Inadvertently during Planned Activities

Delaware Tribe of Indians  
Policy for  
Treatment and Disposition of Human Remains and Cultural Items  
That May be Discovered Inadvertently during Planned Activities

**Purpose**

The purpose of this policy is to describe the procedures that will be followed by all federal agencies, in the event there is an inadvertent discovery of human remains.

**Treatment and Disposition of Human Remains and Cultural Items**

1. The federal agency shall contact the Delaware Tribe of Indians' headquarters at 918-337-6590 or the Delaware Tribe Historic Preservation Representatives at 610-761-7452, as soon as possible, but no later than three (3) days, after the discovery.
2. Place tobacco with the remains and funeral objects.
3. Cover remains and funeral objects with a natural fiber cloth such as cotton or muslin when possible.
4. No photographs are to be taken.
5. The preferred treatment of inadvertently discovered human remains and cultural items is to leave human remains and cultural items in-situ and protect them from further disturbance.
6. No destructive "in-field" documentation of the remains and cultural items will be carried out in consultation with the Tribe, who may stipulate the appropriateness of certain methods of documentation.
7. If the remains and cultural items are left in-situ, no disposition takes place and the requirements of 43 CFR 10 Section 10.4-10.6 will have been fulfilled.
8. The specific locations of discovery shall be withheld from disclosure (with exception of local law officials and tribal officials as described above) and protected to the fullest extent by federal law.
9. If remains and funeral objects are to be removed from the site consultation will begin between the Delaware Tribe of Indians and the federal agency.

**Appendix C**  
**NATURAL RESOURCES COORDINATION**

**Appendix C**  
**NATURAL RESOURCES COORDINATION**

**C-1: Agency Correspondence**

**From:** [Mars, Steve](#)  
**To:** [Moser, Daniel \(FTA\)](#)  
**Cc:** [Popowski, Ron](#); [Hoar, Alex](#); [Eric Schrading](#); [Burns, Donald \(FTA\)](#)  
**Subject:** Re: Request for USFWS Review of New Jersey Transit Raritan River Bridge Replacement Project Environmental Assessment with 4(f) Document  
**Date:** Monday, April 24, 2017 10:43:43 AM

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Mr. Moser:

The U.S. Fish and Wildlife Service (Service) concurs in that the Project will not adversely affect a listed species under Service jurisdiction. The Service recommends that no tree clearing occur from March 15 to September 30 to protect any nesting migratory birds in the Project area that are protected under the Migratory Bird Treaty Act. Any work (maintenance or demolition) proposed on the existing bridge during the March 15 to September 30 period should also be surveyed to ensure Project activities are sufficiently protective of any potential nesting species that may be utilizing the bridge. The Service also recommends that no in-water work occur from 3/1 to 6/30 to protect migrating/spawning shad and herring species. All unavoidable impacts to the aquatic environment should be mitigated for in accordance with the Final Rule: Mitigation for Losses of Aquatic Resources, Department of Defense and the Environmental Protection Agency, April 10, 2008 (Federal Register Vol. 73, No 70: pp. 19594-19705).

if you have any additional question please feel free to contact me at 609-382-5267.

Steve Mars  
Sr. Biologist  
USFWS/NJFO

On Tue, Apr 18, 2017 at 5:12 PM, Moser, Daniel (FTA) <[daniel.moser@dot.gov](mailto:daniel.moser@dot.gov)> wrote:

Good Afternoon Eric and Steve

The preliminary Environmental Assessment (EA) with 4(f) Document for the New Jersey Transit Raritan River Bridge Replacement Project (the "EA/4(f)") is now available for your review and comment. The Federal Transit Administration (FTA) is the lead Federal agency for the project and New Jersey Transit is the sponsor.

You are receiving this request because your agency has agreed to be a cooperating or participating agency with the opportunity to provide a technical review of the EA/4(f) prior to public review.

To access the and download the Raritan Bridge Replacement Project EA/4(f) files:



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
GREATER ATLANTIC REGIONAL FISHERIES OFFICE  
55 Great Republic Drive  
Gloucester, MA 01930-2276

**APR 20 2017**

Dan Moser  
Federal Transit Administration - Region 2  
1 Bowling Green, Room 429  
New York, NY 10004

**Re: New Jersey Transit Raritan River Bridge Replacement Project**

Dear Mr. Moser:

We received your email on April 18, 2017, regarding the proposed Raritan Bridge replacement project. In your email, you requested comments regarding the draft environmental assessment. We offer the following comments.

**Endangered Species Act**

*Sea Turtles*

Four species of ESA listed threatened or endangered sea turtles under our jurisdiction are seasonally present in Raritan Bay and could occur in the lower Raritan River: the threatened Northwest Atlantic Ocean distinct population segment (DPS) of loggerhead, the threatened North Atlantic DPS of green, and the endangered Kemp's ridley and leatherback sea turtles. Sea turtles typically occur along the New York coast from May to mid-November, with the highest concentration of sea turtles present from June through October.

*Atlantic Sturgeon*

Atlantic sturgeon are present in the waters of Raritan Bay and could occur in the lower Raritan River. The New York Bight, Chesapeake Bay, Carolina, and South Atlantic DPS of Atlantic sturgeon are endangered; the Gulf of Maine DPS is threatened. Adult and subadult Atlantic sturgeon originating from any of these DPSs could occur in the proposed project area. As young remain in their natal river/estuary until approximately age 2, and early life stages are not tolerant of saline waters, no eggs, larvae, or juvenile Atlantic sturgeon will occur within the waters of Raritan Bay and the lower Raritan River.

As project details develop, we recommend you consider the following effects of the project on sea turtles and sturgeon:

- For any impacts to habitat or conditions that temporarily render affected water bodies unsuitable for the above-mentioned species, consider the use of timing restrictions for in-water work.
- For activities that increase levels of suspended sediment, consider the use of silt management and/or soil erosion best practices (i.e., silt curtains and/or cofferdams).



- For the relocation of underground cables, consider using the Horizontal Directional Drilling (HDD) method which would prevent the mechanical activity coming into contact with sea turtles and sturgeon in the area.
- For pile driving or other activities that may affect underwater noise levels, consider the use of cushion blocks and other noise attenuating tools to avoid reaching noise levels that will cause injury or behavioral disturbance to sea turtles, and sturgeon - see the table below for more information regarding noise criteria for injury/behavioral disturbance in sturgeon or sea turtles.

Organism	Injury	Behavioral Modification
Sturgeon	206 dB re 1 $\mu$ PaPeak and 187 dB cSEL	150 dB re 1 $\mu$ PaRMS
Sea Turtles	180 dB re 1 $\mu$ PaRMS	166 dB re 1 $\mu$ PaRMS

Depending on the amount and duration of work that takes place in the water, listed species of sea turtles and sturgeon may occur within the vicinity of your proposed project. The Federal Transit Administration will be responsible for determining whether the proposed action may affect listed species. If they determine that the proposed action may affect a listed species, they should submit their determination of effects, along with justification and a request for concurrence to the attention of the Section 7 Coordinator, NMFS, Greater Atlantic Regional Fisheries Office, Protected Resources Division, 55 Great Republic Drive, Gloucester, MA 01930 or nmfs.gar.esa.section7@noaa.gov. Please be aware that we have recently provided on our website guidance and tools to assist action agencies with their description of the action and analysis of effects to support their determination. See - <http://www.greateratlantic.fisheries.noaa.gov/section7>. After receiving a complete, accurate comprehensive request for consultation, in accordance to the guidance and instructions on our website, we would then be able to conduct a consultation under section 7 of the ESA. Should project plans change or new information become available that changes the basis for this determination, further coordination should be pursued. If you have any questions regarding these comments, please contact Edith Carson (978-282-8490; Edith.Carson@noaa.gov).

**Magnuson-Stevens Fishery Conservation and Management Act**

The proposed project area may contain essential fish habitat (EFH) for a federally managed species. For a listing of EFH and further information, please go to our website at: <http://www.greateratlantic.fisheries.noaa.gov/habitat>. If you have any questions regarding EFH, please contact Ursula Howson (732-872-3116; Ursula.Howson@noaa.gov).

Sincerely,



Mark Murray-Brown  
Section 7 Coordinator  
for Protected Resources Division



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
New Jersey Ecological Services Field Office  
4 East Jimmie Leeds Road Unit 4  
Galloway, NJ 08205  
Phone: (609) 382-5273 Fax: (609) 646-0352

<http://www.fws.gov/northeast/njfieldoffice/Endangered/consultation.html>

In Reply Refer To:

April 03, 2017

Consultation Code: 05E2NJ00-2017-SLI-0742

Event Code: 05E2NJ00-2017-E-01239

Project Name: Raritan River Bridge Replacement

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species that may occur in your proposed action area and/or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under Section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.)

If the enclosed list indicates that any listed species may be present in your action area, please visit the New Jersey Field Office consultation web page as the next step in evaluating potential project impacts: <http://www.fws.gov/northeast/njfieldoffice/Endangered/consultation.html>

On the New Jersey Field Office consultation web page you will find:

- habitat descriptions, survey protocols, and recommended best management practices for listed species;
- recommended procedures for submitting information to this office; and
- links to other Federal and State agencies, the Section 7 Consultation Handbook, the Service's wind energy guidelines, communication tower recommendations, the National Bald Eagle Management Guidelines, and other resources and recommendations for protecting wildlife resources.

The enclosed list may change as new information about listed species becomes available. As per Federal regulations at 50 CFR 402.12(e), the enclosed list is only valid for 90 days. Please return to the ECOS-IPaC website at regular intervals during project planning and implementation to obtain an updated species list. When using ECOS-IPaC, be careful about drawing the boundary of your Project Location. Remember that your action area under the ESA is not limited to just the footprint of the project. The action area also includes all areas that may be indirectly affected through impacts such as noise, visual disturbance, erosion, sedimentation, hydrologic change,

chemical exposure, reduced availability or access to food resources, barriers to movement, increased human intrusions or access, and all areas affected by reasonably foreseeable future that would not occur without ("but for") the project that is currently being proposed.

We appreciate your concern for threatened and endangered species. The Service encourages Federal and non-Federal project proponents to consider listed, proposed, and candidate species early in the planning process. Feel free to contact this office if you would like more information or assistance evaluating potential project impacts to federally listed species or other wildlife resources. Please include the Consultation Tracking Number in the header of this letter with any correspondence about your project.

Attachment(s):

- Official Species List
  - USFWS National Wildlife Refuges and Fish Hatcheries
  - Migratory Birds
  - Wetlands
-

## Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**New Jersey Ecological Services Field Office**

4 East Jimmie Leeds Road Unit 4

Galloway, NJ 08205

(609) 382-5273

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## Project Summary

Consultation Code: 05E2NJ00-2017-SLI-0742

Event Code: 05E2NJ00-2017-E-01239

Project Name: Raritan River Bridge Replacement

Project Type: TRANSPORTATION

Project Description: Replacement of the NJ Transit Rail bridge over the mouth of the Raritan River

Project Location:

Approximate location of the project can be viewed in Google Maps:

<https://www.google.com/maps/place/40.495264511005686N74.28136263090641W>



Counties: Middlesex, NJ

## Endangered Species Act Species

There is a total of 0 threatened, endangered, or candidate species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area. Please contact the designated FWS office if you have questions.

## Critical habitats

There are no critical habitats within your project area.

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# USFWS National Wildlife Refuges And Fish Hatcheries

Any activity proposed on [National Wildlife Refuge](#) lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuges or fish hatcheries within your project area.

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# Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any activity that results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service<sup>3</sup>. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

- 
1. The [Migratory Birds Treaty Act](#) of 1918.
  2. The [Bald and Golden Eagle Protection Act](#) of 1940.
  3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The migratory birds species listed below are species of particular conservation concern (e.g. [Birds of Conservation Concern](#)) that may be potentially affected by activities in this location. It is not a list of every bird species you may find in this location, nor a guarantee that all of the bird species on this list will be found on or near this location. Although it is important to try to avoid and minimize impacts to all birds, special attention should be made to avoid and minimize impacts to birds of priority concern. To view available data on other bird species that may occur in your project area, please visit the [AKN Histogram Tools](#) and [Other Bird Data Resources](#). To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

NAME	SEASON(S)
Least Bittern ( <i>Ixobrychus exilis</i> ) <a href="https://ecos.fws.gov/ecp/species/6175">https://ecos.fws.gov/ecp/species/6175</a>	On Land: Breeding
Rusty Blackbird ( <i>Euphagus carolinus</i> )	On Land: Wintering
Wood Thrush ( <i>Hylocichla mustelina</i> )	On Land: Breeding
Worm Eating Warbler ( <i>Helmitheros vermivorum</i> )	On Land: Breeding
Black-billed Cuckoo ( <i>Coccyzus erythrophthalmus</i> ) <a href="https://ecos.fws.gov/ecp/species/9399">https://ecos.fws.gov/ecp/species/9399</a>	On Land: Breeding
Purple Sandpiper ( <i>Calidris maritima</i> )	On Land: Wintering
American Bittern ( <i>Botaurus lentiginosus</i> ) <a href="https://ecos.fws.gov/ecp/species/6582">https://ecos.fws.gov/ecp/species/6582</a>	On Land: Breeding

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American Oystercatcher ( <i>Haematopus palliatus</i> ) <a href="https://ecos.fws.gov/ecp/species/8935">https://ecos.fws.gov/ecp/species/8935</a>	On Land: Year-round
Pied-billed Grebe ( <i>Podilymbus podiceps</i> )	On Land: Year-round
Snowy Egret ( <i>Egretta thula</i> )	On Land: Breeding
Blue-winged Warbler ( <i>Vermivora pinus</i> )	On Land: Breeding
Saltmarsh Sparrow ( <i>Ammodramus caudacutus</i> )	On Land: Breeding
Canada Warbler ( <i>Wilsonia canadensis</i> )	On Land: Breeding
Seaside Sparrow ( <i>Ammodramus maritimus</i> )	On Land: Year-round
Kentucky Warbler ( <i>Oporornis formosus</i> )	On Land: Breeding
Prairie Warbler ( <i>Dendroica discolor</i> )	On Land: Breeding
Fox Sparrow ( <i>Passerella iliaca</i> )	On Land: Wintering
Upland Sandpiper ( <i>Bartramia longicauda</i> ) <a href="https://ecos.fws.gov/ecp/species/9294">https://ecos.fws.gov/ecp/species/9294</a>	On Land: Breeding
Red Knot ( <i>Calidris canutus rufa</i> ) <a href="https://ecos.fws.gov/ecp/species/1864">https://ecos.fws.gov/ecp/species/1864</a>	On Land: Wintering
Bald Eagle ( <i>Haliaeetus leucocephalus</i> ) <a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a>	On Land: Year-round
Black Skimmer ( <i>Rynchops niger</i> ) <a href="https://ecos.fws.gov/ecp/species/5234">https://ecos.fws.gov/ecp/species/5234</a>	On Land: Breeding
Gull-billed Tern ( <i>Gelochelidon nilotica</i> ) <a href="https://ecos.fws.gov/ecp/species/9501">https://ecos.fws.gov/ecp/species/9501</a>	On Land: Breeding
Loggerhead Shrike ( <i>Lanius ludovicianus</i> ) <a href="https://ecos.fws.gov/ecp/species/8833">https://ecos.fws.gov/ecp/species/8833</a>	On Land: Year-round
Peregrine Falcon ( <i>Falco peregrinus</i> ) <a href="https://ecos.fws.gov/ecp/species/8831">https://ecos.fws.gov/ecp/species/8831</a>	On Land: Wintering
Short-eared Owl ( <i>Asio flammeus</i> ) <a href="https://ecos.fws.gov/ecp/species/9295">https://ecos.fws.gov/ecp/species/9295</a>	On Land: Wintering
Willow Flycatcher ( <i>Empidonax traillii</i> ) <a href="https://ecos.fws.gov/ecp/species/3482">https://ecos.fws.gov/ecp/species/3482</a>	On Land: Breeding
Hudsonian Godwit ( <i>Limosa haemastica</i> )	At Sea: Migrating

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Least Tern (*Sterna antillarum*)

On Land: Breeding

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
  - Conservation measures for birds  
<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
  - Year-round bird occurrence data  
<http://www.birdscanada.org/birdmon/default/datasummaries.jsp>
-

# Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

## ESTUARINE AND MARINE DEEPWATER

- [E1UBL](#)

## ESTUARINE AND MARINE WETLAND

- [E2US2P](#)

## FRESHWATER FORESTED/SHRUB WETLAND

- [PSS1C](#)
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# 3856 - NJT Raritan River Drawbridge Replacement

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## *IPaC Trust Resource Report*

Generated June 01, 2015 10:44 AM MDT



US Fish &amp; Wildlife Service

# IPaC Trust Resource Report



## Project Description

## NAME

3856 - NJT Raritan River Drawbridge  
Replacement

## PROJECT CODE

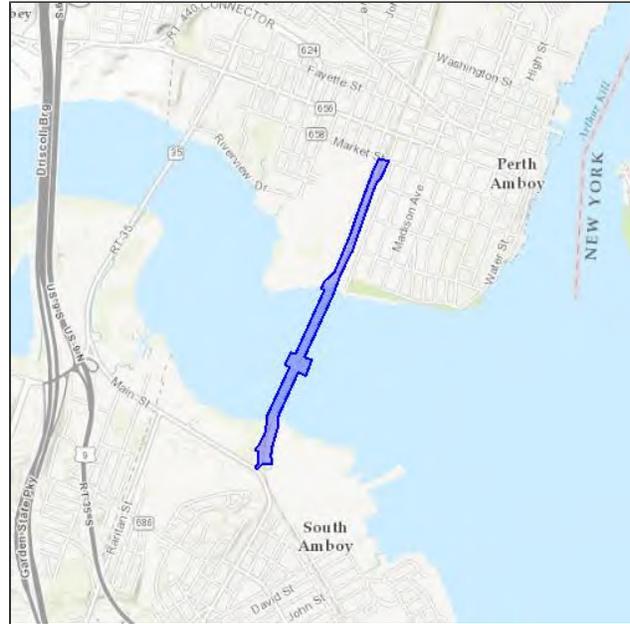
GESQI-CDCZF-DDVMV-6UQBG-22ZTFM

## LOCATION

Middlesex County, New Jersey

## DESCRIPTION

No description provided



## U.S. Fish & Wildlife Contact Information

Species in this report are managed by:

### New Jersey Ecological Services Field Office

927 North Main Street, Building D

Pleasantville, NJ 8232-1454

(609) 646-9310

## Endangered Species

Proposed, candidate, threatened, and endangered species that are managed by the [Endangered Species Program](#) and should be considered as part of an effect analysis for this project.

There are no endangered species identified for this project area

## Critical Habitats

Potential effects to critical habitat(s) within the project area must be analyzed along with the endangered species themselves.

There is no critical habitat within this project area

# Migratory Birds

Birds are protected by the [Migratory Bird Treaty Act](#) and the Bald and Golden Eagle Protection Act.

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service (1). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

You are responsible for complying with the appropriate regulations for the protection of birds as part of this project. This involves analyzing potential impacts and implementing appropriate conservation measures for all project activities.

<p><b>American Oystercatcher</b> <i>Haematopus palliatus</i> Year-round <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0G8">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0G8</a></p>	<b>Bird of conservation concern</b>
<p><b>American Bittern</b> <i>Botaurus lentiginosus</i> Season: Breeding <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0F3">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0F3</a></p>	<b>Bird of conservation concern</b>
<p><b>Bald Eagle</b> <i>Haliaeetus leucocephalus</i> Year-round <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B008">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B008</a></p>	<b>Bird of conservation concern</b>
<p><b>Black Skimmer</b> <i>Rynchops niger</i> Season: Breeding <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0EO">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0EO</a></p>	<b>Bird of conservation concern</b>
<p><b>Black-billed Cuckoo</b> <i>Coccyzus erythrophthalmus</i> Season: Breeding <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HI">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HI</a></p>	<b>Bird of conservation concern</b>
<p><b>Blue-winged Warbler</b> <i>Vermivora pinus</i> Season: Breeding <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0JY">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0JY</a></p>	<b>Bird of conservation concern</b>
<p><b>Canada Warbler</b> <i>Wilsonia canadensis</i> Season: Breeding <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0LL">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0LL</a></p>	<b>Bird of conservation concern</b>
<p><b>Fox Sparrow</b> <i>Passerella iliaca</i> Season: Wintering <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0NE">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0NE</a></p>	<b>Bird of conservation concern</b>
<p><b>Gull-billed Tern</b> <i>Gelochelidon nilotica</i> Season: Breeding <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0JV">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0JV</a></p>	<b>Bird of conservation concern</b>
<p><b>Hudsonian Godwit</b> <i>Limosa haemastica</i> Season: Migrating <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0JM">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0JM</a></p>	<b>Bird of conservation concern</b>

<b>Kentucky Warbler</b> <i>Oporornis formosus</i> Season: Breeding <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0IN">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0IN</a>	<b>Bird of conservation concern</b>
<b>Least Bittern</b> <i>Ixobrychus exilis</i> Season: Breeding <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0JW">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0JW</a>	<b>Bird of conservation concern</b>
<b>Peregrine Falcon</b> <i>Falco peregrinus</i> Season: Wintering <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FU">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FU</a>	<b>Bird of conservation concern</b>
<b>Pied-billed Grebe</b> <i>Podilymbus podiceps</i> Year-round <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0JQ">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0JQ</a>	<b>Bird of conservation concern</b>
<b>Prairie Warbler</b> <i>Dendroica discolor</i> Season: Breeding <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0K4">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0K4</a>	<b>Bird of conservation concern</b>
<b>Purple Sandpiper</b> <i>Calidris maritima</i> Season: Wintering <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0L1">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0L1</a>	<b>Bird of conservation concern</b>
<b>Red Knot</b> <i>Calidris canutus rufa</i> Season: Wintering <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0DM">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0DM</a>	<b>Bird of conservation concern</b>
<b>Rusty Blackbird</b> <i>Euphagus carolinus</i> Season: Wintering <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0JL">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0JL</a>	<b>Bird of conservation concern</b>
<b>Saltmarsh Sparrow</b> <i>Ammodramus caudacutus</i> Season: Breeding <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0MY">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0MY</a>	<b>Bird of conservation concern</b>
<b>Seaside Sparrow</b> <i>Ammodramus maritimus</i> Year-round <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0NO">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0NO</a>	<b>Bird of conservation concern</b>
<b>Short-eared Owl</b> <i>Asio flammeus</i> Season: Wintering <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HD">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HD</a>	<b>Bird of conservation concern</b>
<b>Snowy Egret</b> <i>Egretta thula</i> Season: Breeding <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0LC">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0LC</a>	<b>Bird of conservation concern</b>
<b>Upland Sandpiper</b> <i>Bartramia longicauda</i> Season: Breeding <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HC">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HC</a>	<b>Bird of conservation concern</b>
<b>Wood Thrush</b> <i>Hylocichla mustelina</i> Season: Breeding <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0IB">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0IB</a>	<b>Bird of conservation concern</b>

**Worm Eating Warbler** *Helmitheros vermivorum*

**Bird of conservation concern**

Season: Breeding

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B011>

## Refuges

Any activity proposed on [National Wildlife Refuge](#) lands must undergo a 'Compatibility Determination' conducted by the Refuge. If your project overlaps or otherwise impacts a Refuge, please contact that Refuge to discuss the authorization process.

There are no refuges within this project area

# Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes.

Project proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate [U.S. Army Corps of Engineers District](#).

## DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

## DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

## DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Wetland data is unavailable at this time.



## State of New Jersey

### DEPARTMENT OF ENVIRONMENTAL PROTECTION

State Forestry Services

Mail Code 501-04

ONLM - Natural Heritage Program

P.O. Box 420

Trenton, NJ 08625-0420

Tel. #609-984-1339

Fax. #609-984-1427

CHRIS CHRISTIE  
*Governor*

KIM GUADAGNO  
*Lt. Governor*

BOB MARTIN  
*Commissioner*

June 15, 2015

John Pabish  
Amy S. Greene Environmental Consultants, Inc.  
4 Walter E. Foran Boulevard, Suite 209  
Flemington, NJ 08822-4666

Re: NJ Transit Raritan River Drawbridge Replacement Project - ASGECI #3856

Dear Mr. Pabish:

Thank you for your data request regarding rare species information for the above referenced project site in Perth Amboy City and South Amboy City, Middlesex County.

Searches of the Natural Heritage Database and the Landscape Project (Version 3.1) are based on a representation of the boundaries of your project site in our Geographic Information System (GIS). We make every effort to accurately transfer your project bounds from the topographic map(s) submitted with the Request for Data into our Geographic Information System. We do not typically verify that your project bounds are accurate, or check them against other sources.

We have checked the Landscape Project habitat mapping and the Biotics Database for occurrences of any rare wildlife species or wildlife habitat on the referenced site. The Natural Heritage Database was searched for occurrences of rare plant species or ecological communities that may be on the project site. Please refer to Table 1 (attached) to determine if any rare plant species, ecological communities, or rare wildlife species or wildlife habitat are documented on site. A detailed report is provided for each category coded as 'Yes' in Table 1.

We have also checked the Landscape Project habitat mapping and Biotics Database for all occurrences of rare wildlife species or wildlife habitat within one mile of the referenced site. Please refer to Table 2 (attached) to determine if any rare wildlife species or wildlife habitat is documented within one mile of the project site. Detailed reports are provided for each category coded as 'Yes' in Table 2. These reports may include species that have also been documented on the project site.

For requests submitted as part of a Flood Hazard Area Control Act (FHACA) rule application, we report records for all rare plant species and ecological communities tracked by the Natural Heritage Program that may be on your project site. (In some borderline cases these records may be described as on or in the immediate vicinity of your project site.) A subset of these plant species are also covered by the FHACA rules when the records are located within one mile of the project site. One mile searches for plant species will only report occurrences for those plant species identified under the FHACA regulations as being critically dependent on the watercourse. Please refer to Table 2 (attached) to determine if any rare plant species covered by the FHACA rules have been documented. Detailed reports are provided for each category coded as 'Yes' in Table 2. These reports may include species that have also been documented on the project site.

The Natural Heritage Program reviews its data periodically to identify priority sites for natural diversity in the State. Included as priority sites are some of the State's best habitats for rare and endangered species and ecological communities. Please refer to Tables 1 and 2 (attached) to determine if any priority sites are located on or within one mile of the project site.

A list of rare plant species and ecological communities that have been documented from the project site, referenced above, can be downloaded from <http://www.state.nj.us/dep/parksandforests/natural/heritage/countylist.html>. If suitable habitat is present at the project site, the species in that list have potential to be present.

Status and rank codes used in the tables and lists are defined in EXPLANATION OF CODES USED IN NATURAL HERITAGE REPORTS, which can be downloaded from [http://www.state.nj.us/dep/parksandforests/natural/heritage/nhpcodes\\_2010.pdf](http://www.state.nj.us/dep/parksandforests/natural/heritage/nhpcodes_2010.pdf).

If you have questions concerning the wildlife records or wildlife species mentioned in this response, we recommend that you visit the interactive NJ-GeoWeb website at the following URL, <http://www.state.nj.us/dep/gis/geoweb splash.htm> or contact the Division of Fish and Wildlife, Endangered and Nongame Species Program at (609) 292-9400.

PLEASE SEE 'CAUTIONS AND RESTRICTIONS ON NHP DATA', which can be downloaded from <http://www.state.nj.us/dep/parksandforests/natural/heritage/newcaution2008.pdf>.

Thank you for consulting the Natural Heritage Program. The attached invoice details the payment due for processing this data request. Feel free to contact us again regarding any future data requests.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Robert J. Cartica', is written over a light blue rectangular background.

Robert J. Cartica  
Administrator

c: NHP File No. 15-4007453-7793

**Table 1: On Site Data Request Search Results (7 Possible Reports)**

<b><u>Report Name</u></b>	<b><u>Included</u></b>	<b><u>Number of Pages</u></b>
1. Possibly on Project Site Based on Search of Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database	No	0 pages included
2. On or In the Immediate Vicinity of the Project Site Based on Search of the Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database	No	0 pages included
3. Natural Heritage Priority Sites On Site	No	0 pages included
4. Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.1 Species Based Patches	Yes	1 page(s) included
5. Vernal Pool Habitat on the Project Site Based on Search of Landscape Project 3.1	No	0 pages included
6. Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.1 Stream Habitat File	No	0 pages included
7. Other Animal Species On the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program	No	0 pages included

**Rare Wildlife Species or Wildlife Habitat on the Project  
Site Based on Search of  
Landscape Project 3.1 Species Based Patches**

Class	Common Name	Scientific Name	Feature Type	Rank	Federal Protection Status	State Protection Status	Grank	Strank
Aves	Cattle Egret	Bubulcus ibis	Foraging	3	NA	State Threatened	G5	S2B,S3N
	Glossy Ibis	Plegadis falcinellus	Foraging	2	NA	Special Concern	G5	S3B,S4N
	Little Blue Heron	Egretta caerulea	Foraging	2	NA	Special Concern	G5	S3B,S3N
	Osprey	Pandion haliaetus	Foraging	3	NA	State Threatened	G5	S2B
	Osprey	Pandion haliaetus	Nest	3	NA	State Threatened	G5	S2B
	Peregrine Falcon	Falco peregrinus	Urban Nest	4	NA	State Endangered	G4	S1B,S3N
	Snowy Egret	Egretta thula	Foraging	2	NA	Special Concern	G5	S3B,S4N

**Table 2: Within 1 Mile for FHACA Searches (6 possible reports)**

<b><u>Report Name</u></b>	<b><u>Included</u></b>	<b><u>Number of Pages</u></b>
1. Rare Plant Species Covered by the Flood Hazard Area Control Act Rule Within One Mile of the Project Site Based on Search of Natural Heritage Database	No	0 pages included
2. Natural Heritage Priority Sites within 1 mile	No	0 pages included
3. Rare Wildlife Species or Wildlife Habitat Within One Mile of the Project Site Based on Search of Landscape Project 3.1 Species Based Patches	Yes	1 page(s) included
4. Vernal Pool Habitat Within One Mile of the Project Site Based on Search of Landscape Project 3.1	No	0 pages included
5. Rare Wildlife Species or Wildlife Habitat Within One Mile of the Project Site Based on Search of Landscape Project 3.1 Stream Habitat File	No	0 pages included
6. Other Animal Species Within One Mile of the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program	No	0 pages included

**Rare Wildlife Species or Wildlife Habitat Within One  
Mile of the Project Site Based on Search of  
Landscape Project 3.1 Species Based Patches**

<b>Class</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Feature Type</b>	<b>Rank</b>	<b>Federal Protection Status</b>	<b>State Protection Status</b>	<b>Grank</b>	<b>Strank</b>
<i>Aves</i>	Black-crowned Night-heron	Nycticorax nycticorax	Foraging	3	NA	State Threatened	G5	S2B,S3N
	Cattle Egret	Bubulcus ibis	Foraging	3	NA	State Threatened	G5	S2B,S3N
	Glossy Ibis	Plegadis falcinellus	Foraging	2	NA	Special Concern	G5	S3B,S4N
	Least Bittern	Ixobrychus exilis	Breeding Sighting-Confirmed	2	NA	Special Concern	G5	S3B,S3N
	Little Blue Heron	Egretta caerulea	Foraging	2	NA	Special Concern	G5	S3B,S3N
	Osprey	Pandion haliaetus	Foraging	3	NA	State Threatened	G5	S2B
	Osprey	Pandion haliaetus	Nest	3	NA	State Threatened	G5	S2B
	Peregrine Falcon	Falco peregrinus	Urban Nest	4	NA	State Endangered	G4	S1B,S3N
	Snowy Egret	Egretta thula	Foraging	2	NA	Special Concern	G5	S3B,S4N
	Wood Thrush	Hylocichla mustelina	Breeding Sighting	2	NA	Special Concern	G5	S3B
<i>Reptilia</i>	Atlantic Loggerhead	Caretta caretta	Occupied Habitat	5	Federally Listed Threatened	State Endangered	G3	S1



**Environmental, Planning, and Engineering Consultants**

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September 21, 2015

Ms. Karen Greene  
Fishery Biologist  
National Marine Fisheries Service  
Habitat Conservation Division  
James J. Howard Marine Sciences Laboratory  
74 Magruder Rd.  
Highlands, NJ 07732

**Re: Essential Fish Habitat and Fish and Wildlife Coordination Act Species Information Request,  
Raritan River Drawbridge Replacement Project, Perth Amboy and South Amboy,  
Middlesex County, New Jersey**

Dear Ms. Greene:

The New Jersey Transit Corporation (NJ TRANSIT) is proposing the Raritan River Drawbridge (“River Draw”) Replacement project (the Proposed Project) that spans between Perth Amboy and South Amboy in Middlesex County, New Jersey. The existing Raritan River Drawbridge is a moveable “swing span” rail bridge that carries NJ TRANSIT’s North Jersey Coast Line (NJCL) across the Raritan River (see **Figure 1**), and is a critical rail link for the NJCL to the Northeast Corridor and job centers in Newark, Jersey City, and Manhattan. Built in 1908, it suffered structural damage during Superstorm Sandy, when ocean surge moved the approach girder spans out of alignment atop their supporting piers. To repair the damage, service across the bridge was suspended for three weeks after the storm while the structure was repositioned and the tracks reset to support train operations. While the bridge is now safe, trains must operate at reduced speeds across the bridge because of the damage that occurred. Replacement of River Draw is a key element of NJ TRANSIT’s Superstorm Sandy resiliency program being undertaken throughout the state to repair and restore the transit system and make the system more resilient to future storm events.

Because the proposed project will use federal funding from the Federal Transit Administration (FTA) through the Emergency Relief Program that was promulgated in response to Superstorm Sandy, it will require consistency with the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act of 1966 (Section 106), as well as other related statutes and regulations. An Environmental Assessment (EA) will be prepared to comply with NEPA, FTA’s Environmental Impact and Related Procedures (23 CFR Part 771), Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR 1500), as well as Section 106, Section 4(f) of the U.S. Department of Transportation Act of 1966, Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” and other relevant regulations. In support of this effort, AKRF, Inc. requests information on Essential Fish Habitat (EFH) and Fish and Wildlife Coordination Act species under the jurisdiction of the National Marine Fisheries Service (NMFS) within the vicinity of the proposed project site shown in the attached map. The information provided by NMFS

will be used in the preparation of environmental documentation for this project. However, map(s) showing specific locations of sensitive species or habitats developed from lists provided by NMFS will not be published in any document.

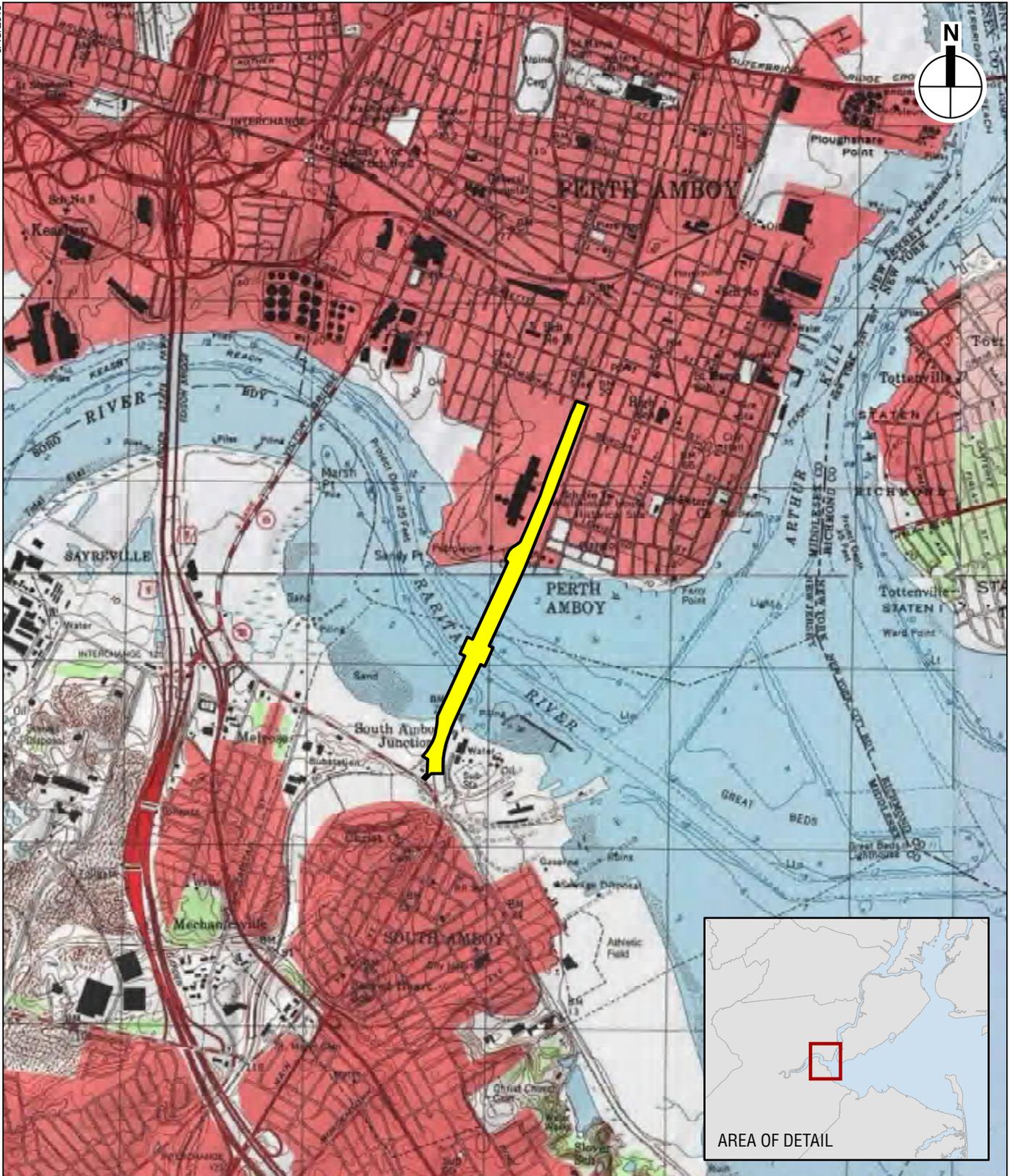
Please feel free to contact me at (646) 388-9568 or by email at [svorsanger@akrf.com](mailto:svorsanger@akrf.com) if you should have any questions regarding this information request. Thank you for your time in providing us with this information.

Sincerely,

Sarah Vorsanger, Environmental Analyst  
AKRF, Inc.

Encl: Project Location Figure

cc: J. Cowing, S. Collins, K. Cibelli (AKRF)



 Project Site

0 2,000 FEET  


Approximate coordinates of Project Site:  
40° 29' 51" N, 74° 16' 48" W

USGS 7.5 Minute Topographic Map  
Perth Amboy and South Amboy Quads  
**Figure 1**



**Environmental, Planning, and Engineering Consultants**

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September 21, 2015

Mr. Dave Gouveia  
Acting Assistant Regional Administrator for Protected Resources  
NOAA National Marine Fisheries Service  
55 Great Republic Drive  
Gloucester, MA 01930

Re: **Threatened or Endangered Species and Marine Mammal Species Information Request,  
Raritan River Drawbridge Replacement Project, Perth Amboy and South Amboy,  
Middlesex County, New Jersey**

Dear Mr. Gouveia:

The New Jersey Transit Corporation (NJ TRANSIT) is proposing the Raritan River Drawbridge (“River Draw”) Replacement project (the Proposed Project) that spans between Perth Amboy and South Amboy in Middlesex County, New Jersey. The existing Raritan River Drawbridge is a moveable “swing span” rail bridge that carries NJ TRANSIT’s North Jersey Coast Line (NJCL) across the Raritan River (see **Figure 1**), and is a critical rail link for the NJCL to the Northeast Corridor and job centers in Newark, Jersey City, and Manhattan. Built in 1908, it suffered structural damage during Superstorm Sandy, when ocean surge moved the approach girder spans out of alignment atop their supporting piers. To repair the damage, service across the bridge was suspended for three weeks after the storm while the structure was repositioned and the tracks reset to support train operations. While the bridge is now safe, trains must operate at reduced speeds across the bridge because of the damage that occurred. Replacement of River Draw is a key element of NJ TRANSIT’s Superstorm Sandy resiliency program being undertaken throughout the state to repair and restore the transit system and make the system more resilient to future storm events.

Because the proposed project will use federal funding from the Federal Transit Administration (FTA) through the Emergency Relief Program that was promulgated in response to Superstorm Sandy, it will require consistency with the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act of 1966 (Section 106), as well as other related statutes and regulations. An Environmental Assessment (EA) will be prepared to comply with NEPA, FTA’s Environmental Impact and Related Procedures (23 CFR Part 771), Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR 1500), as well as Section 106, Section 4(f) of the U.S. Department of Transportation Act of 1966, Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” and other relevant regulations. In support of this effort, AKRF, Inc. requests information on federally-listed threatened or endangered species, species of special concern, and marine mammals under the jurisdiction of the National Marine Fisheries Service (NMFS) within the vicinity of the study area for the proposed project. The information provided by NMFS will be used in the preparation of environmental documentation for this project. However, map(s)

showing specific locations of sensitive species or habitats developed from lists provided by NMFS will not be published in any document.

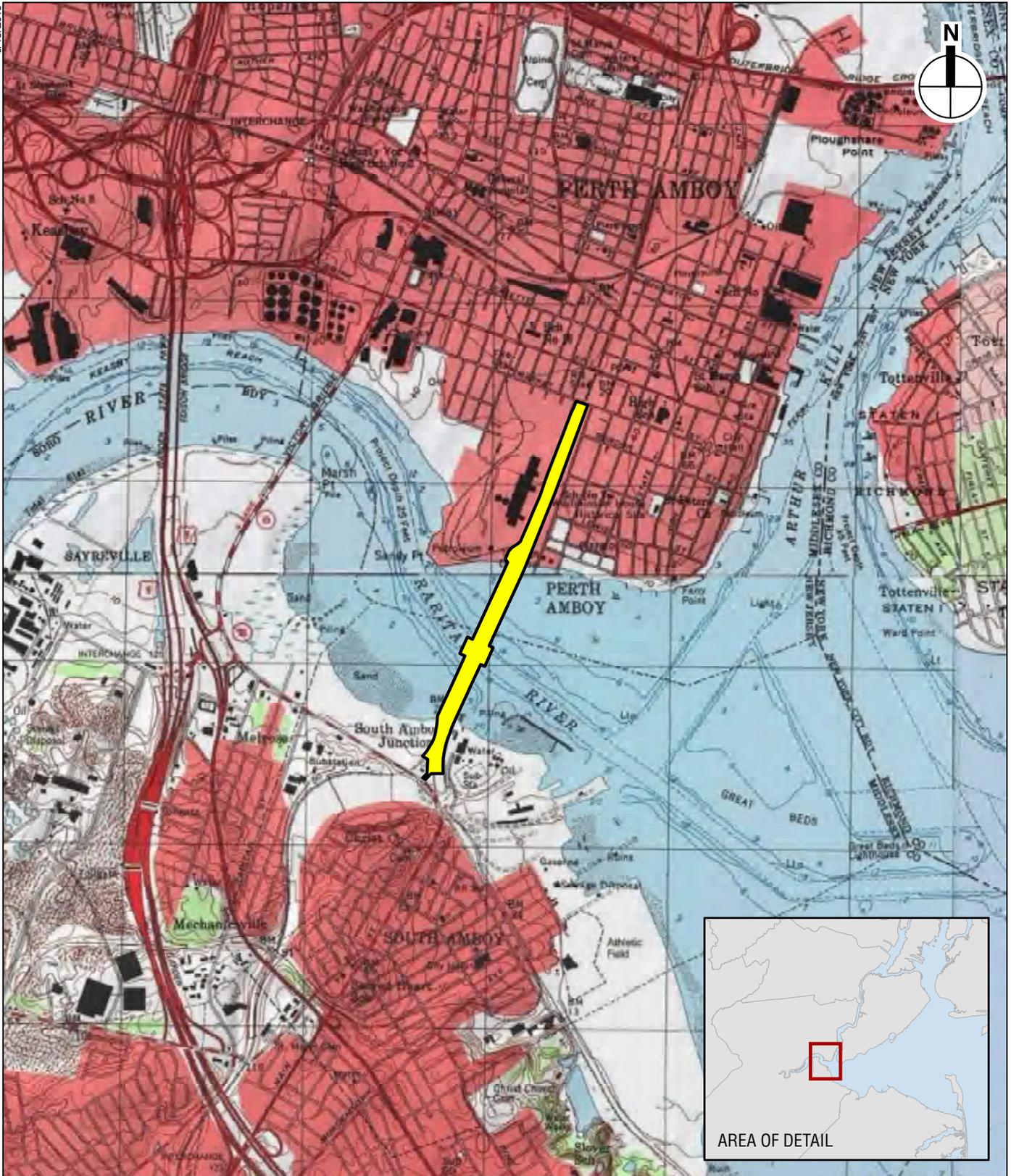
Please feel free to contact me at (646) 388-9568 or by email at [svorsanger@akrf.com](mailto:svorsanger@akrf.com) if you should have any questions regarding this information request. Thank you for your time in providing us with this information.

Sincerely,

Sarah Vorsanger, Environmental Analyst  
AKRF, Inc.

Encl: Project Location Figure

cc: J. Cowing, S. Collins, K. Cibelli (AKRF)



 Project Site

0 2,000 FEET  


Approximate coordinates of Project Site:  
40° 29' 51" N, 74° 16' 48" W

USGS 7.5 Minute Topographic Map  
Perth Amboy and South Amboy Quads  
**Figure 1**



Sarah Vorsanger &lt;svorsanger@akrf.com&gt;

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## Raritan River Drawbridge Replacement Project Species Information Request

1 message

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**Karen Greene - NOAA Federal** <karen.greene@noaa.gov>

Mon, Sep 28, 2015 at 12:43 PM

To: svorsanger@akrf.com

Cc: Melissa Alvarez - NOAA Federal &lt;melissa.alvarez@noaa.gov&gt;, Daniel Marrone - NOAA Federal &lt;daniel.marrone@noaa.gov&gt;

Dear Ms. Vorsanger:

This is in response to your September 21, 2015 request for essential fish habitat and Fish and Wildlife Coordination Act species information for New Jersey Transit's proposed replacement of the Raritan River drawbridge between Perth Amboy and South Amboy in Middlesex County, New Jersey.

### **Threatened and Endangered Species**

Threatened and endangered sea turtles and endangered Atlantic sturgeon may occur in the project area. The lead federal action agency will be responsible for determining whether the proposed action is likely to affect listed species. When project plans are complete, the lead federal action agency should submit their determination of effects, along with justification for the determination, and a request for concurrence to the attention of the Section 7 Coordinator, NMFS, Greater Atlantic Regional Fisheries Office, Protected Resources Division (PRD), 55 Great Republic Drive, Gloucester, MA 01930.

### **Fish and Wildlife Coordination Act**

The Raritan River is a migratory pathway and spawning, nursery and forage area for anadromous fishes including striped bass, alewife, blueback herring and American shad. Because landing statistics and the number of fish observed on annual spawning runs indicate a drastic decline in alewife and blueback herring populations throughout much of their range since the mid-1960's they have designated as Species of Concern by NOAA. To minimize impacts to these and other migrating diadromous species including American shad, striped bass and American eel, in-water work should be avoided from March 1 to June 30 of each year. In addition, wetlands in the area perform many important ecological functions. Impacts to wetlands and other aquatic habitat should be avoided and minimized to the maximum extent practicable. Compensatory mitigation should be provided for all unavoidable impacts. Should project plans change that would alter the basis for determination, consultation should be reinitiated.

### **Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat**

Essential fish habitat (EFH) has been designated within the Raritan River and its tributaries. As a result, further EFH consultation by the federal action agency will be required as part of the federal permit process. For a listing of EFH and further information, please go to our website at: <http://www.greateratlantic.fisheries.noaa.gov/habitat> If you wish to discuss this further, please contact Melissa Alvarez at [melissa.alvarez@noaa.gov](mailto:melissa.alvarez@noaa.gov) or 732-872-3116.

Karen Greene  
Mid-Atlantic Field Offices Supervisor  
National Marine Fisheries Service  
Habitat Conservation Division  
James J. Howard Marine Sciences Laboratory  
74 Magruder Rd.  
Highlands, NJ 07732  
[732 872-3023](tel:7328723023) (office)  
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**Appendix C**

**NATURAL RESOURCES COORDINATION**

**C-2: Bird Species Identified By the USFWS  
& NJ Natural Heritage Program Database Search**

**Appendix C, Table 1**  
**List of Bird Species Identified by the USFWS**  
**Information for Planning and Conservation Report &**  
**NJ Natural Heritage Program Database Search**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Listed By<sup>1</sup></b>	<b>E&amp;T Rank<sup>2</sup></b>	<b>Seasonal Presence<sup>3</sup></b>	<b>Potential Onsite Breeding Habitat</b>
American Oystercatcher	<i>Haematopus palliatus</i>	iPaC	-	Year-round	No
American Bittern	<i>Botaurus lentiginosus</i>	iPaC	SE	Breeding	Yes
Bald Eagle	<i>Haliaeetus leucocephalus</i>	iPaC	ST	Year-round	No
Black Skimmer	<i>Rynchops niger</i>	iPaC	ST	Breeding	Yes
Black-billed Cuckoo	<i>Coccyzus erythrophtha</i>	iPaC	-	Breeding	Yes
Blue-winged Warbler	<i>Vermivora pinus</i>	iPaC	-	Breeding	Yes
Canada Warbler	<i>Wilsonia canadensis</i>	iPaC	-	Breeding	Yes
Cattle Egret	<i>Bubulcus ibis</i>	NHP	ST	Spring-Fall	No
Fox Sparrow	<i>Passerella iliaca</i>	iPaC	-	Wintering	No
Glossy Ibis	<i>Plegadis falcinellus</i>	NHP	-	Spring-Fall	No
Gull-billed Tern	<i>Gelochelidon nilotica</i>	iPaC	-	Breeding	Yes
Hudsonian Godwit	<i>Limosa haemastica</i>	iPaC	-	Migrating	No
Kentucky Warbler	<i>Oporornis formosus</i>	iPaC	-	Breeding	No
Least Bittern	<i>Ixobrychus exilis</i>	iPaC	-	Breeding	Yes
Little Blue Heron	<i>Egretta caerulea</i>	NHP	-	Spring-Fall	No
Osprey	<i>Pandion haliaetus</i>	NHP	ST	Breeding	Yes
Peregrine Falcon	<i>Falco peregrinus</i>	iPaC/NHP	SE	Breeding	Yes
Pied-billed Grebe	<i>Podilymbus podiceps</i>	iPaC	SE	Year-round	No
Prairie Warbler	<i>Dendroica discolor</i>	iPaC	-	Breeding	Yes
Purple Sandpiper	<i>Calidris maritima</i>	iPaC	-	Wintering	No
Red Knot	<i>Calidris canutus rufa</i>	iPaC	ST	Wintering	No
Rusty Blackbird	<i>Euphagus carolinus</i>	iPaC	-	Wintering	No
Saltmarsh Sparrow	<i>Ammodramus caudacutus</i>	iPaC	-	Breeding	Yes
Seaside Sparrow	<i>Ammodramus maritimus</i>	iPaC	-	Year-round	No
Short-eared Owl	<i>Asio flammeus</i>	iPaC	SE	Wintering	No
Snowy Egret	<i>Egretta thula</i>	iPaC/NHP	-	Breeding	No
Upland Sandpiper	<i>Bartramia longicauda</i>	iPaC	SE	Breeding	No
Wood Thrush	<i>Hylocichla mustelina</i>	iPaC	-	Breeding	Yes
Worm Eating Warbler	<i>Helmitheros vermivorum</i>	iPaC	-	Breeding	No

1. – iPaC = USFWS Information for Planning and Conservation Report; NHP = NJ Natural Heritage Program Database Search.

2. – SE = State Endangered; ST = State Threatened.

3. – A timing restriction of April 1 to August 15 for site clearing is recommended by USFWS under the North American Migratory Bird Species Act.

**Appendix C**

**NATURAL RESOURCES COORDINATION**

**C-3: Essential Fish Habitat Worksheet**

**NOAA FISHERIES**  
**NORTHEAST REGIONAL OFFICE**  
**EFH ASSESSMENT WORKSHEET FOR FEDERAL AGENCIES**  
**(modified 08/04)**

**Introduction:**

The Magnuson-Stevens Fishery Conservation and Management Act mandates that federal agencies conduct an EFH consultation with NOAA Fisheries regarding any of their actions authorized, funded, or undertaken that may adversely affect essential fish habitat (EFH). An adverse effect means any impact that reduces the quality and/or quantity of EFH. Adverse effects may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components. Adverse effects to EFH may result from actions occurring within EFH or outside of EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

This worksheet has been designed to assist Federal agencies in determining whether an EFH consultation is necessary, and developing the needed information should a consultation be required. This worksheet will lead you through a series of questions that will provide an initial screening to determine if an EFH consultation is necessary, and help you assemble the needed information for determining the extent of the consultation required. The information provided in this worksheet may also be used to develop the required EFH Assessment.

Consultation through NOAA Fisheries regarding other NOAA-trust resources may also be necessary if a proposed action results in adverse impacts. Part 6 of the worksheet is designed to help assess the effects of the action on other NOAA-trust resources. This helps maintain efficiency in our interagency coordination process. In addition, consultation with NOAA Fisheries may be required if a proposed action impacts marine mammals or threatened and endangered species for which we are responsible. Staff from our Northeast Regional Office, Protected Resources Division should be contacted regarding potential impacts to marine mammals or threatened and endangered species.

**Instructions for Use:**

An EFH Assessment must be submitted by a Federal agency to NOAA Fisheries as part of the EFH consultation.

An EFH Assessment must include the following information:

- 1) A description of the proposed action.
- 2) An analysis of the potential adverse effects of the action on EFH, and the managed species.
- 3) The Federal agency's conclusions regarding the effects of the action on EFH.
- 4) Proposed mitigation if applicable.

In some cases, this worksheet can be used as an EFH Assessment. If the Federal agency determines that the action will not cause substantial impacts to EFH, then this worksheet may suffice. If the action may cause substantial adverse effects on EFH, then a more thorough discussion of the action and its impacts in a separate EFH Assessment will be necessary. The completed worksheet should be forwarded to NOAA Fisheries Northeast Regional Office, Habitat Conservation Division (HCD) for review.

The information contained on the HCD website (<http://www.greateratlantic.fisheries.noaa.gov/habitat/>) will assist you in completing this worksheet. The HCD web site contains information regarding: the EFH consultation process; Guide to EFH Designations which provides a geographic species list; Guide to EFH Species Descriptions which provides the legal description of EFH as well as important ecological information for each species and life stage; and other EFH reference documents including examples of EFH Assessments and EFH Consultations.

## EFH ASSESSMENT WORKSHEET FOR FEDERAL AGENCIES (modified 08/04)

PROJECT NAME: Raritan River Drawbridge Replacement

DATE: 02-06-2016

PROJECT NO.: \_\_\_\_\_ LOCATION: Raritan River, Perth Amboy and South Amboy, Middlesex County, New Jersey

PREPARER: Sandy Collins, AKRF, Inc.

Step 1. Use the Habitat Conservation Division EFH webpage, Guide to Essential Fish Habitat Designations in the Northeastern United States to generate the list of designated EFH for federally-managed species for the geographic area of interest (<http://www.nero.noaa.gov/hcd/index2a.htm>). Use the species list as part of the initial screening process to determine if EFH for those species occurs in the vicinity of the proposed action. Attach that list to the worksheet because it will be used in later steps. Make a preliminary determination on the need to conduct an EFH Consultation.

1. INITIAL CONSIDERATIONS		
EFH Designations	Yes	No
Is the action located in or adjacent to EFH designated for eggs?	X	
Is the action located in or adjacent to EFH designated for larvae?	X	
Is the action located in or adjacent to EFH designated for juveniles?	X	
Is the action located in or adjacent to EFH designated for adults?	X	
Is the action located in or adjacent to EFH designated for spawning adults?		X
If you answered no to all questions above, then EFH consultation is not required -go to Section 5. If you answered yes to any of the above questions proceed to Section 2 and complete remainder of the worksheet.		

**Step 2. In order to assess impacts, it is critical to know the habitat characteristics of the site before the activity is undertaken. Use existing information, to the extent possible, in answering these questions. Please note that, there may be circumstances in which new information must be collected to appropriately characterize the site and assess impacts.**

<b>2. SITE CHARACTERISTICS</b>	
<b>Site Characteristics</b>	<b>Description</b>
<b>Is the site intertidal, sub-tidal, or water column?</b>	The proposed project is located near the mouth of the Raritan River and contain intertidal, sub-tidal, and water column habitats. An approximately 300-foot-wide federal Navigation Channel runs down the center of river in the area of the proposed project. Water depths within the federal Navigation Channel range from approximately 9 to 25 feet at Mean Lower Low Water (MLLW). Outside the navigation channel the river is shallow, with depths ranging from 0.5 to 6 feet at MLLW.
<b>What are the sediment characteristics?</b>	Sediments within the project site can be characterized as muddy.
<b>Is Habitat Area of Particular Concern (HAPC) designated at or near the site? If so what type, size, characteristics?</b>	There is no HAPC designation at or near the project site.
<b>Is there submerged aquatic vegetation (SAV) at or adjacent to project site? If so describe the spatial extent.</b>	There are no SAVs within this project site.
<b>What is typical salinity and temperature regime/range?</b>	Data collected between 2000 and 2006 showed that temperatures ranged from 4.3°C to 25.6°C and salinity ranged from 7.0 to 27.2 parts per thousand. (Data collected from six monitoring stations near the project site, USEPA STORET website.)
<b>What is the normal frequency of site disturbance, both natural and man-made?</b>	The project site is located in a heavily trafficked area of the Raritan River and land use within and surrounding the project site is characterized as industrial, commercial, and residential. Site disturbance is both natural and man-made. During Sandy in 2012, this area saw extensive natural disturbance, and one of the purposes of the proposed project is to address damage caused to the Raritan River Drawbridge during Sandy as well as to create a bridge that is more resilience to such severe weather events.
<b>What is the area of proposed impact (work footprint &amp; far afield)?</b>	The proposed new bridge will have an area of approximately 2,460 square feet within the footprint of its new piers. The existing piers occupy approximately 31,200 square feet within the Raritan River. Upon completion of the new piers and demolition of the existing piers, the proposed project will result in a net increase of 28,000 square feet of bottom habitat as a result of the design of the new bridge.

Step 3. This section is used to describe the anticipated impacts from the proposed action on the physical/chemical/biological environment at the project site and areas adjacent to the site that may be affected.

3. DESCRIPTION OF IMPACTS			
Impacts	Y	N	Description
Nature and duration of activity(s)			<p>The proposed project involves the complete replacement of an existing two-track movable bridge and the demolition of the existing bridge. The replacement bridge is expected to take up to 36 months to complete, followed by an estimated 6 months for demolition of the old bridge.</p> <p>The new bridge will be on an alignment parallel to, and west of, the existing bridge, an estimated 50 to 170 feet away (measured from edge to edge). Construction of the new bridge will involve installation of new piers for the bridge's approach spans in the river bottom, installation of the deck spans atop those piers, and installation of the movable span across the navigable channel.</p> <p>To accommodate construction activities and equipment, a temporary trestle will be constructed from each the shoreline into the river where water levels are too shallow for barges. The trestles will likely be constructed working from the deep water and extending to the shoreline.</p> <p>Floating barges will be used as construction staging platforms in deeper parts of the river. The barges will not be placed within the navigational channel. These barges will be used for material storage and for construction equipment, such as cranes. The construction barges will be anchored in place using spud piles.</p> <p>In-water construction activities for the bridge superstructure will be limited to drilling large-diameter piles for the replacement bridge and driving small-diameter piles for the temporary trestles, which will cause minimal bottom disturbance. The piers will be installed using large-diameter drilled shafts or steel casings that are put into place by vibratory hammering or twisting; once those are in place, the piers will be filled with concrete, an activity within the casing that will not affect water quality. Turbidity curtains will be used around the construction zones during pile installation to limit the potential for sediment to affect other areas of the river.</p> <p>Following completion of the replacement bridge, the old bridge will be demolished. The existing bridge superstructure will be removed span-by-span using a barge and crane and then transported to and disassembled in a staging area. An excavator will pull out the pier footings and the timber piles will be cut off below the mud line. Sheet piling will be used around the piers during demolition of the existing bridge to minimize adverse effects to water quality.</p>
Will benthic community be disturbed?	X		The replacement bridge will result in the loss of 2,460 square feet of bottom habitat during construction due to installation of the piles supporting the new bridge piers. However, upon demolition of the existing bridge, approximately 31,200 square feet of bottom habitat will be restored, resulting in a net gain of 28,000 square feet of bottom habitat.
Will SAV be impacted?		X	No SAV is present in, or adjacent to, the project area.
Will sediments be altered and/or sedimentation rates change?	X		Sediments will not be altered other than within the footprint of the new piles. The new bridge piers will maintain approximately the same spacing as the existing bridge and would not be expected to result in a change in sedimentation rates within the vicinity of the project site.
Will turbidity increase?	X		Turbidity increases during construction will be temporary and localized. Installation of piles will result in minimal sediment resuspension and sheetpiles will be installed during demolition of the existing bridge to

<b>3. DESCRIPTION OF IMPACTS</b>			
<b>Impacts</b>	<b>Y</b>	<b>N</b>	<b>Description</b>
			minimize sediment resuspension. The use of the temporary construction trestle and construction barges only where water depths are sufficient to minimize suspended sediment will further minimize increases in suspended sediment due to bridge construction.
<b>Will water depth change?</b>		<b>X</b>	Water depths will not change as a result of the proposed project.
<b>Will contaminants be released into sediments or water column?</b>	<b>X</b>		Because the proposed project is being constructed in a manner that will minimize increases in suspended sediment, release of contaminants due to sediment resuspension will be minimized. The proposed project will not result in any other release of contaminants into sediment or water column.
<b>Will tidal flow, currents or wave patterns be altered?</b>	<b>X</b>		The proposed project will have a pier spacing that is similar to the existing bridge, with a reduced footprint occupied by piles. Therefore, while the proposed project will result in localized changes in the immediate vicinity of the new bridge piers, it will not alter tidal flow, current or wave pattern within the portion of the lower Raritan River within the project site.
<b>Will ambient salinity or temperature regime change?</b>		<b>X</b>	The proposed project will not result in a change in ambient salinity or temperature regimes.
<b>Will water quality be altered?</b>		<b>X</b>	Any alteration to water quality as a result of the proposed project will be temporary and occur only during construction and demolition activities and is expected to return to pre-project condition upon completion of the proposed project.

Step 4. This section is used to evaluate the consequences of the proposed action on the functions and values of EFH as well as the vulnerability of the EFH species and their life stages. Identify which species from the EFH species list (generated in Step 1) will be adversely impacted from the action. Assessment of EFH impacts should be based upon the site characteristics identified in Step 2 and the nature of the impacts described within Step 3. The Guide to EFH Descriptions webpage (<http://www.nero.noaa.gov/hcd/list.htm>) should be used during this assessment to determine the ecological parameters/preferences associated with each species listed and the potential impact to those parameters.

4. EFH ASSESSMENT			
Functions and Values	Y	N	Describe habitat type, species and life stages to be adversely impacted
Will functions and values of EFH be impacted for:			
Spawning		X	There is no spawning habitat for summer flounder, smooth dogfish, or longfin inshore squid in the project area.
Nursery	X		Summer flounder are benthic feeders and could temporarily be affected by in-water work if they are present at the project site. Smooth dogfish are primarily demersal and could temporarily be affected by in-water work if they are present at the project site. Longfin inshore squid are found at varying depths, determined mainly by season and water temperature. Juveniles move up and down the water column throughout the day. The potential temporary loss of a small portion of the Raritan River during construction activities would not result in adverse impacts to nursery habitat for any of these three EFH species.
Forage	X		Summer flounder are benthic feeders and are expected to relocate to available foraging habitat in the vicinity of the project site during the construction period, and return upon completion of the work. Smooth dogfish eat primarily invertebrates, such as large crustaceans like crab and lobster. Smaller longfin inshore squid feed on planktonic organisms, while larger individuals feed on crustaceans and small fish. Smooth dogfish and longfin inshore squid are also expected to relocate to available foraging habitat during construction and demolition. The proposed project would result in a net increase in bottom habitat available for foraging habitat for EFH species once the project is complete.
Shelter		X	The footprint of the bridge construction would represent only a temporary change in habitat type within the project area that would not result in significant adverse impacts for EFH species.
Will impacts be temporary or permanent?			There is the potential for temporary increases in suspended sediment during construction and/or demolition. These increases are expected to be temporary and localized. Species that are present in the area would be expected to move to surrounding habitat during construction and return following completion of the work.
Will compensatory mitigation be used?		X	Upon completion of the proposed project, there will be an increase in the available bottom habitat of 28,000 square feet, which would potentially benefit the three EFH species listed in this assessment; therefore, no compensatory mitigation is needed.

Step 5. This section provides the Federal agency's determination on the degree of impact to EFH from the proposed action. The EFH determination also dictates the type of EFH consultation that will be required with NOAA Fisheries.

5. DETERMINATION OF IMPACT	
	 Federal Agency's EFH Determination
Overall degree of adverse effects on EFH (not including compensatory mitigation) will be:  (check the appropriate statement)	There is no adverse effect on EFH  EFH Consultation is not required
	<input checked="" type="checkbox"/> The adverse effect on EFH is not substantial.  This is a request for an abbreviated EFH consultation. This worksheet is being submitted to NMFS to satisfy the EFH Assessment requirement.
	The adverse effect on EFH is substantial.  This is a request for an expanded EFH consultation. A detailed written EFH assessment will be submitted to NMFS expanding upon the impacts revealed in this worksheet.

Step 6. Consultation with NOAA Fisheries may also be required if the proposed action results in adverse impacts to other NOAA-trust resources, such as anadromous fish, shellfish, crustaceans, or their habitats. Some examples of other NOAA-trust resources are listed below. Inquiries regarding potential impacts to marine mammals or threatened/endangered species should be directed to NOAA Fisheries' Protected Resources Division.

6. OTHER NOAA-TRUST RESOURCES IMPACT ASSESSMENT	
Species known to occur at site (list others that may apply)	Describe habitat impact type (i.e., physical, chemical, or biological disruption of spawning and/or egg development habitat, juvenile nursery and/or adult feeding or migration habitat).
Atlantic sturgeon	Atlantic sturgeon ( <i>Acipenser oxyrinchus oxyrinchus</i> ; endangered) can occur near the project site in the Raritan Bay/Raritan River from spring to fall. This species is a bottom dweller typically found in deeper waters, and would likely only occur in the project vicinity as transient individuals. They would be expected to avoid the shallow waters of the project site in favor of more suitable habitat. Given the small area of the Raritan River that would be minimally affected during construction and demolition and the increase of bottom habitat that would result from the proposed project, the project would not be expected to result in significant adverse impacts to Atlantic sturgeon.

**Appendix C**

**NATURAL RESOURCES COORDINATION**

**C-4: Agency Meeting Minutes**

**Raritan River Bridge Replacement  
Navigation and Permitting Meeting**

**MEETING SUMMARY**

*Date of Meeting:* June 29, 2016  
*Time:* 2 PM  
*Location:* FTA, One Bowling Green, 4th Floor

**Attendees**

<b>Name</b>	<b>Agency/Firm</b>	<b>Email Address</b>	<b>Telephone</b>
Donald Burns	FTA	donald.burns@dot.gov	212-668-2203
John Crocker	FTA	john.crocker@dot.gov	212-824-2432
Dan Moser	FTA	daniel.moser@dot.gov	212-668-2324
Helen Serassio [by phone]	FTA	helen.serassio@dot.gov	
Cyrenthia Ward	FTA	cyrenthia.ward@dot.gov	212-668-2203
Jeremy Colangelo-Bryan	NJ TRANSIT	jcolangelo-bryan@njtransit.com	973-491-7743
Lisa Fanning	NJ TRANSIT	lfanning@njtransit.com	973-491-7227
RJ Palladino	NJ TRANSIT	rpalladino@njtransit.com	973-491-7791
Naomi Handell [by phone]	USACE	naomi.j.handell@usace.army.mil	917-790-8523
Mike Oseback [by phone]	USACE	michael.j.oseback@usace.army.mil	
Donna Leoce	USCG	donna.d.leoce@uscg.mil	212-514-4332
Jim Moore	USCG	james.m.moore2@uscg.mil	212-514-4334
Julie Cowing	AKRF	jcowing@akrf.com	646-388-9733
Glen Schetelich	Hardesty & Hanover	gschetelich@hardesty-hanover.com	646-428-8489
Dave Tuckman	Hardesty & Hanover	dtuckman@hardesty-hanover.com	201-656-8810

**Discussion**

**I. Introductions**

**II. Brief Status Summary**

1. NJ TRANSIT provided an overview of the purpose and need for the project and design considerations in selection of a movable bridge type, noting that a vertical lift bridge is currently NJ TRANSIT's preferred bridge type, pending development of additional design information.

**III. Discussion**

2. NJ TRANSIT provided a copy of the maritime users' survey that was recently distributed and the distribution list for that survey. Additional potential sources for information on maritime uses of the river were discussed, including the USACE's Waterborne Commerce report on commercial vessel activity, USCG's vessel traffic information, and NJ TRANSIT's bridge opening logs. USACE has depth surveys available online.

3. The existing Raritan River Rail Bridge has a vertical clearance of 140 feet, created by high power lines that cross above the channel. The proposed replacement bridge would have a vertical clearance of 110 feet, the same clearance as the nearest upstream bridge, the Victory Bridge. USCG noted that if only tugs and barges would be expected from any uses along the river between the two bridges, 110 feet should be adequate vertical clearance for the new Raritan River bridge. Building a bridge with a higher clearance would require much larger piers in the river.
4. The existing Raritan River Rail Bridge has two navigable channels, of approximately 125 feet each. If the replacement bridge is a lift bridge, a 300-foot-wide horizontal clearance would be provided. A swing or bascule bridge would each continue to divide the channel into two, like the existing bridge. USCG prefers the wider channel.
5. Regarding demolition of the existing bridge piers, USCG requires that the piers be removed to below the mudline. More specific information will be provided on how deep this must be. NJ TRANSIT and H&H noted that current plans are to remove the piers of the approach spans to 2 feet below the mudline, with removal of the pivot pier (supporting the movable span) to 5 feet below the mudline. Blasting would not be anticipated for the approach span piers but could be for the pivot pier, if not restricted by the NEPA process findings. If blasting is conducted, the contractor would be required to contain and remove any debris.
6. Regarding permitting, USCG's jurisdiction is related to navigation and activities above the water line (i.e., clearance for vessels) and USACE's jurisdiction is related to water as a natural resource (i.e., water below the water line). The project will require a bridge permit from the USCG and a Section 404 permit from the USACE for fill (i.e., the bridge structure) within waters of the U.S. (i.e., the Raritan River and nearby wetlands). USACE strongly encourages applicants to submit preliminary permit applications as early as practical so that project review begins early.
7. USACE requested that the navigational channel be shown on plans and cross sections in project drawings.
8. Regarding Section 4(f) and Section 106, both USACE and USCG indicated that they would like FTA to handle completion of these processes.

#### **IV. Next Steps / Actions**

- NJ TRANSIT / AKRF / H&H to coordinate with property owners along the riverfront downstream of the Victory Bridge related to future plans that might involve maritime uses.
- USCG to provide guidance on what depth below the mudline existing bridge pier removal should be.
- The NEPA process should address the construction method for removal of bridge piers.



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November 15, 2016

Ruth Foster, PhD., P.G.  
New Jersey Department of Environmental Protection  
401 East State Street  
P.O. Box 420  
Trenton, NJ 08625-0420

Re: Raritan River Bridge Replacement Permitting – Pre-application Meeting

Dear Ms. Foster:

As a follow-up to our meeting of November 3, 2016, this letter represents a summary of the discussion in regards to the permitting for NJ TRANSIT's Raritan River Bridge Replacement project. Please review and should you have any questions or clarifications, feel free to get back to me to discuss.

**Attendees**

<b>Name</b>	<b>Agency/Firm</b>	<b>Email Address</b>	<b>Telephone</b>
Ruth Foster	NJDEP-PCER	Ruth.Foster@dep.nj.gov	609-292-3600
Yuli Chew	NJDEP-PCER	Yuli.Chew@dep.nj.gov	609-292-3600
Marcus Roorda	NJDEP-PCER	Marcus.Roorda@dep.nj.gov	609-292-3600
Susan Lockwood	NJDEP-DLUR	Susan.Lockwood@dep.nj.gov	609-984-0580
Matthew Resnick	NJDEP-DLUR	Matthew.Resnick@dep.nj.gov	609-777-3955
Peter DeMeo	NJDEP-DLUR	Peter.DeMeo@dep.nj.gov	609-984-6216
Rich Castagna	NJDEP-Tidelands	Richard.Castagna@dep.nj.gov	609-292-2573
Jenna Solomon	NJDEP-HPO	Jenna.Solomon@dep.nj.gov	
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<b>Name</b>	<b>Agency/Firm</b>	<b>Email Address</b>	<b>Telephone</b>
Visha Szumanski	H&H	vszumanski@hardesty-hanover.com	212-944-1150
Harold Olarte	BEM	holarte@bemsys.com	973-508-9468
Gary Bickle	AKRF	gbickle@akrf.com	856-359-7622
Keri Cibelli	AKRF	kcibelli@akrf.com	646-388-9858

## **Discussion**

### **1. Project Overview**

The project team provided an overview of the Raritan River Bridge Replacement Project. The proposed project includes the complete replacement of the existing two-track Raritan River Bridge with a new two-track vertical lift bridge. The new bridge will be parallel to and west of the existing bridge. The alignment will be close to the existing bridge, to minimize the upland areas affected by the landside approach tracks. The proposed bridge will be approximately six feet higher than the existing bridge to increase resilience to flooding. The bridge was designed to raise tracks and electrical and mechanical systems above NJ TRANSIT's Design Flood Elevation (2.5 feet above the Federal Emergency Management Agency's Base Flood Elevation). The horizontal navigational channel will also be expanded to approximately 300 feet from the existing approximately 125 feet.

### **2. NEPA Status**

The NEPA team provided a Draft Environmental Assessment (EA) to the Federal Transit Authority (FTA) for review, and are currently addressing FTA comments. The team has engaged with the United States Army Corps of Engineers (USACE) and the United States Coast Guard (USCG) as cooperating agencies on the project. A draft Memorandum of Agreement (MOA) was submitted to New Jersey Historic Preservation Office (NJHPO) and the FTA for concurrent review. The wetland delineation was performed over the last two weeks, and potential wetlands impacts will be estimated shortly.

### **3. AT&T Line Relocation**

As part of the design process, geotechnical borings need to be acquired along the existing bridge. NJ Transit has a Statewide General Permit authorizing completion of geotechnical borings that cover s the program. A portion of the boring program has not been completed due to the current location of an AT&T fiberoptic line just west of the existing bridge. This line will need to be relocated as soon as possible to complete the remainder of the borings prior to the completion of the project's preliminary design. Dennis Smith of Michael Baker International (AT&T's engineering consultant) described the proposed plan to use horizontal directional drilling in upland areas of the project site and potentially into a portion of the Raritan River corresponding with the existing Neptune transmission line location. It was proposed that the remaining portion of the line be installed in the river using a jetsled plow. However, NJDEP strongly suggested that the entire length of the cable should be installed with horizontal directional drilling to eliminate the shockload of turbidity and minimize impacts to aquatic biota. Directional drilling would also avoid any work restriction windows (likely March 1st to June 30th) assuming all activities were outside of the watercourse

Rich Castagna (NJDEP Tidelands Division) confirmed that a new Tidelands utility license would be required. As a general timeframe, this could be acquired approximately 30 days following submission of the permit application, as no approval is needed from the Tidelands Council.

NJ TRANSIT expects to submit the permit application for the AT&T Line Relocation to NJDEP by the end 2016. Prior to the application submission, the project team will schedule a meeting with Matthew Resnick and Peter DeMeo, as well as representatives from NJHPO and NJDEP-Tidelands. The preferred method of installation and estimated wetland impacts will be confirmed at the meeting.

#### **4. Raritan River Bridge Replacement**

The bridge replacement will require the following permits:

- Waterfront Development Permit
- Soil Erosion and Sediment Control (General Permit for construction)
- USCG Bridge Permit
- USACE Individual Permit
- Tidelands License for construction and Tidelands Grant for bridge
- Flood Hazard Area requirements will be addressed as part of the Waterfront Development Permit

As previously discussed, the NJDEP work restriction window will be from March 1st to June 30th. Construction of the bridge foundations (drilled shafts) will be done within large steel casings (8 to 10 feet diameter), serving as cofferdams. Demolition of the existing bridge would be within cofferdam. If all work is completed within cofferdams or drilled shafts (installed outside of the restriction window), the restriction will be waived.

Potential wetland mitigation has not been identified at this time. Although no mitigation bank is located in the area, it is possible that the Meadowlands mitigation bank could be made available for the project. Potential on-site mitigation options will also be considered. The mitigation ratio will be dependent upon the potential project-specific impacts that will be broken down by type.

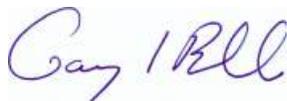
The adverse impact of the removal of the historic bridge has been identified and will be mitigated through the MOA. The stipulations for mitigation as detailed in the MOA will also be included in the land use permits.

#### **5. Project Schedule**

The project team expects to submit permit applications to NJDEP in April 2017. Construction of the bridge is expected to begin in the spring of 2019 and be completed in 24 months. Demolition of the existing bridge would extend another 12 months into 2022.

Please let me know if you have anything you would like to add or amend to these notes. Feel free to reach out to me by phone (856) 359-7622 or email ([gbickle@akrf.com](mailto:gbickle@akrf.com)). The project team would like to thank you and your staff for your time and responsiveness to the project. We look forward to working with you in the future as the project progresses.

Sincerely,



Gary L. Bickle  
Senior Vice President

Cc: John Geitner, NJ TRANSIT  
Louis Mareello, AT&T  
Daniel Moser, FTA

**Raritan River Bridge Replacement  
Presentation at Harbor Ops Committee  
USCG, 212 Coast Guard Drive, Fort Wadsworth, Staten Island, NY  
May 4, 2016**

MEETING SUMMARY

**NJ TRANSIT River Draw Team Attendees**

RJ Palladino, NJ TRANSIT  
Julie Cowing, AKRF  
Dave Tuckman, Hardesty & Hanover  
Bruce Riegel, Hardesty & Hanover

**Discussion**

The meeting included a wide range of attendees from agencies (but no attendance sheet was circulated). Attendees included Donna Leoce of the U.S. Coast Guard, who will be project manager for the Raritan River Bridge Replacement coordination, other USCG representatives; Tom Kramer (Division Director) and Randy Hintz (Chief, Operations Support Branch) of the U.S. Army Corps of Engineers; Genevieve Clifton, NJDOT; Eric Johansson, Maritime Association of the Port of New York/New Jersey Tug & Barge Committee; and others.

RJ Palladino provided a brief presentation of the need for the project, the anticipated project features (bridge on the west side of current alignment, movable bridge type not yet selected), the project's current status in terms of NEPA and design, and the anticipated schedule for NEPA, design, and permitting.

Tom Kramer (USACE, Division Director) will be the USACE's contact for this project until he assigns a specific project manager. He noted that the EA should be thorough enough that USACE and USCG can adopt it as their own NEPA document in support of their permits, and early coordination like this meeting will be important to make sure this occurs.

There was a discussion about bridge type as it affects navigability. Eric Johansson noted that he would like to see an improvement in the width of the navigation channel as it passes the bridge, so he would prefer a lift bridge over a swing bridge or a bascule bridge with a center pier support. Others agreed that they would prefer a lift bridge. Other benefits of a lift bridge that were identified included its ability to be opened partway to accommodate smaller vessels, which reduces the amount of time needed for the lift. Someone asked why a fixed bridge cannot be considered, and RJ explained that given the need for a grade of no more than 1 -2 percent for rail, the fixed bridge would require extensive changes to approach tracks as well as the two nearest stations, at South Amboy and Perth Amboy.

There was also a discussion about the need to accommodate future development upriver of the bridge. One commenter thought the vertical clearance for the new bridge should be 135 feet rather than 110 feet, even though the next bridge upstream (the Victory Bridge) is a fixed bridge with a clearance of 110 feet. He believes there is the potential for new development upriver between River Draw and the Victory Bridge.

Eric Johansson also identified a concern with the operation of the bridge during extreme weather, since very cold and very hot weather seem to adversely affect the existing bridge. Dave Tuckman responded that the new bridge would be designed with updated mechanics that can withstand extreme weather, no matter what bridge type is selected.

The group also discussed future coordination and how best to conduct outreach with maritime users. RJ distributed a draft survey of maritime users for consideration. Tom Kramer suggested that the USACE and NJDEP permitting groups can review other permit applications for upriver uses to see who the commenters have been, so that those commenters can be added to the stakeholder list for River Draw. He also noted that the Raritan Riverkeeper and Rutgers University should be on the stakeholder list. Genevieve Clifton said that she could help coordinate with recreational and commercial maritime users.

**Appendix D**  
**COASTAL ZONE ANALYSIS**

## D.1 REGULATORY CONTEXT

The federal Coastal Zone Management (CZM) Act of 1972 was established to support and protect the distinctive character of the waterfront, and to assist coastal states in establishing policies for managing their coastal zone areas. The Coastal Zone Management Act requires that federal activities within a state's coastal zone be consistent with that state's coastal zone management plan. New Jersey has a federally approved coastal zone management program, which is administered by the New Jersey Department of Environmental Protection (NJDEP).

Under N.J.A.C. 7:7 the NJDEP Division of Land Use Regulation manages New Jersey's CZM Program and issues permits for activities regulated under the Coastal Area Facility Review Act (CAFRA), N.J.S.A. 13:19-1 et seq. (as amended to July 19, 1993), Wetlands Act of 1970, N.J.S.A. 13:9A-1 et seq., Waterfront Development Law, N.J.S.A. 12:5-3, Water Quality Certification (401 of the Federal Clean Water Act), and Federal Consistency Determinations (307 of the Federal CZM Act). Because the project site is outside the CAFRA Zone, consistency with CAFRA is not addressed in this assessment.

N.J.A.C. 7:7-1.2 defines coastal waters as any tidal waters of the state and all lands lying thereunder. Coastal waters of the State of New Jersey extend from the mean high water (MHW) line out to the three-geographical-mile limit of the New Jersey territorial sea, and elsewhere to the interstate boundaries of the States of New York and Delaware, and the Commonwealth of Pennsylvania. The definition includes all lands outside of the coastal area as defined by CAFRA, extending from the MHW line of a tidal water body to the first paved public road, railroad, or surveyable property line (existing on September 26, 1980) generally parallel to the waterway, provided that the landward boundary of the upland area shall be no less than 100 feet and no more than 500 feet from the MHW line. The definition also includes all areas containing tidal wetlands and the Hackensack Meadowlands District as defined by N.J.S.A. 13:17-4. In New Jersey, coastal zone consistency is determined through the issuance of a Waterfront Development Permit, and consistency with applicable CZM Policies must be evaluated.

**Table D-1** below lists the NJDEP CZM Rules and identifies the rules that apply to the proposed project. The following section assesses the consistency of the proposed project with the applicable rules. The details of project-specific conditions will be addressed in more detail during the permitting phase of the project.

**Table D-1**  
**List of New Jersey CZM Rules**

CZM Rule Number	CZM Rule Name	Applicable to the Project	Not Applicable to the Project
<b>LOCATION RULES—SPECIAL AREAS</b>			
7:7-9.2	Shellfish Habitat		X
7:7-9.3	Surf Clam Areas		X
7:7-9.4	Prime Fishing Areas		X
7:7-9.5	Finfish Migratory Pathways	X	
7:7-9.6	Submerged Vegetation Habitat		X
7:7-9.7	Navigation Channels	X	
7:7-9.8	Canals		X
7:7-9.9	Inlets		X
7:7-9.10	Marina Moorings		X
7:7-9.11	Ports		X
7:7-9.12	Submerged Infrastructure Routes		X
7:7-9.13	Shipwrecks and Artificial Reefs		X
7:7-9.14	Wet Borrow Pits		X
7:7-9.15	Intertidal and Subtidal Shallows	X	
7:7-9.16	Dunes		X
7:7-9.17	Overwash Areas		X
7:7-9.18	Coastal High Hazard Areas		X
7:7-9.19	Erosion Hazard Areas		X
7:7-9.20	Barrier Island Corridor		X
7:7-9.21	Bay Islands		X
7:7-9.22	Beaches		X
7:7-9.23	Filled Water's Edge		X
7:7-9.24	Existing Lagoon Edges		X
7:7-9.25	Flood Hazard Areas	X	
7:7-9.26	Riparian Zones	X	
7:7-9.27	Wetlands	X	
7:7-9.28	Wetlands Buffers	X	
7:7-9.31	Coastal Bluffs		X
7:7-9.32	Intermittent Stream Corridors		X
7:7-9.33	Dry borrow pits		X
7:7-9.34	Historic and Archaeological Resources	X	
7:7-9.35	Specimen Trees		X
7:7-9.36	Endangered or Threatened Wildlife or Vegetation Species Habitats	X	
7:7-9.37	Critical Wildlife Habitats		X
7:7-9.38	Public Open Space	X	
7:7-9.39	Special Hazard Areas		X
7:7-9.40	Excluded Federal Lands		X
7:7-9.41	Special Urban Areas		X
7:7-9.42	Pinelands National Reserve and Pinelands Protection Area		X
7:7-9.43	Hackensack Meadowlands District		X
7:7-9.44	Wild and Scenic River Corridors		X
7:7-9.45	Geodetic Control Reference Marks		X
7:7-9.46	Hudson River Waterfront Area		X
7:7-9.47	Atlantic City		X
7:7-9.48	Lands and Waters Subject to Public Trust Rights		X
7:7-9.49	Dredged material management areas		X
<b>USE RULES—GENERAL WATER AREAS</b>			
7:7-12.2	Shellfish aquaculture		X
7:7-12.3	Boat Ramps		X
7:7-12.4	Docks and Piers for Cargo and Commercial Fisheries		X
7:7-12.5	Recreational Docks and Piers		X

**Table D-1 (cont'd)**  
**List of New Jersey CZM Rules**

<b>CZM Rule Number</b>	<b>CZM Rule Name</b>	<b>Applicable to the Project</b>	<b>Not Applicable to the Project</b>
7:7-12.6	Maintenance Dredging		X
7:7-12.7	New Dredging		X
7:7-12.8	Environmental dredging		X
7:7-12.9	Dredged Material Disposal		X
7:7-12.10	Solid Waste or Sludge Dumping		X
7:7-12.11	Filling		X
7:7-12.12	Mooring		X
7:7-12.13	Sand and Gravel Mining		X
7:7-12.14	Bridges	X	
7:7-12.15	Submerged Pipelines		X
7:7-12.16	Overhead Transmission Lines		X
7:7-12.17	Dams and Impoundments		X
7:7-12.18	Outfalls and Intakes		X
7:7-12.19	Realignment Of Water Areas		X
7:7-12.20	Vertical wake or wave attenuation structures		X
7:7-12.21	Submerged Cables		X
7:7-12.22	Artificial Reefs		X
7:7-12.23	Living shorelines		X
7:7-12.24	Miscellaneous Uses		X
<b>GENERAL LOCATION RULES</b>			
7:7-14.1	Rule on Location of Linear Development	X	
7:7-14.2	Basic Location Rule	X	
7:7-14.3	Secondary Impacts	X	
<b>USE RULES</b>			
7:7-15.2	Housing		X
7:7-15.3	Resort/recreational		X
7:7-15.4	Energy facility		X
7:7-15.5	Transportation	X	
7:7-15.6	Public facility		X
7:7-15.7	Industry		X
7:7-15.8	Mining		X
7:7-15.9	Port		X
7:7-15.10	Commercial facility		X
7:7-15.11	Coastal engineering		X
7:7-15.12	Dredged material placement on land		X
7:7-15.13	National Defense Facilities use rule		X
7:7-15.14	High Rise Structures		X
<b>RESOURCE RULES</b>			
7:7-16.2	Marine Fish and Fisheries	X	
7:7-16.3	Water Quality	X	
7:7-16.4	Surface Water Use		X
7:7-16.5	Groundwater Use		X
7:7-16.6	Stormwater Management	X	
7:7-16.7	Vegetation	X	
7:7-16.8	Air Quality	X	
7:7-16.10	Public Trust Rights		X
7:7-16.11	Scenic Resources and Design	X	
7:7-16.12	Traffic	X	
7:7-16.13	Subsurface Sewage Disposal Systems		X
7:7-16.14	Solid and Hazardous Waste	X	
<b>Source:</b> <a href="http://www.nj.gov/dep/rules/rules/njac7_7.pdf">http://www.nj.gov/dep/rules/rules/njac7_7.pdf</a>			

## **D.2 ANALYSIS OF APPLICABLE POLICIES**

### **7:7-9.7: NAVIGATION CHANNELS**

*Navigation channels are tidal water areas including the Atlantic Ocean, inlets, bays, rivers and tidal guts with sufficient depth to provide safe navigation. Navigation channels include all areas between the top of the channel slopes on either side. These navigation channels are often marked with buoys or stakes. Major navigation channels are shown on NOAA/National Ocean Service Charts. Development which would cause terrestrial soil and shoreline erosion and siltation in navigation channels shall utilize appropriate mitigation measures. Development which would result in loss of navigability is prohibited. The placement of structures within 50 feet of any authorized navigation channel is discouraged, unless it can be demonstrated that the proposed structure will not hinder navigation.*

The 300-foot-wide navigation channel of the South Amboy Reach of the Raritan River passes through the project site. One of the goals of the proposed project is to improve maritime navigation beneath the Raritan River crossing of NJ TRANSIT's North Jersey Coast Line (NJCL). Today, the navigation channel divides around the bridge's center pier (i.e., the location of the swing span when the bridge is open), creating two narrow channels: a 124-foot-wide north channel and a 125-foot-wide south channel. This creates an obstacle for maritime traffic. In addition, the alignment of the bridge is such that the marine channel is slightly skewed in comparison to the bridge's fenders and central pier. The combination of the obstacle created by the center pier, the narrower channels, and this misalignment has contributed to numerous collisions at the bridge channel in which both the bridge and marine vessels have been damaged. Over 60 collisions have been reported in the last 10 years (between January 2006 and April 2015), with some collisions resulting in substantial damage that required the bridge and/or marine channel to be closed for repairs. The impediment created by the center pier also contributes to slower marine passage times beneath the bridge.

One of the goals of the proposed project is to improve navigation beneath the bridge. Proper operation of the bridge is essential to the area's maritime traffic, which includes tankers, commercial barges being towed by tugboats, commercial fishing, cruise ships, and recreational vessels. The proposed project will comply with all current design standards and will result in a more reliable movable bridge. The new bridge piers and associated fenders will be placed outside the channel, which will allow a wider area for ship passage than with the existing bridge. If the movable span is a lift bridge, there would no longer be a support pier dividing the navigation channel.

During construction of the new bridge and demolition of the existing bridge, barges will be temporarily moored in the Raritan River, but no barges will be within the navigational channel. Any limited, temporary closures required during construction would be closely coordinated with the U.S. Coast Guard (USCG) and would follow acceptable protocol. Impacts from sediment resuspension are expected to be minor, with no impacts to the navigational channel. Therefore, the project would be consistent with this rule.

### **7:7-9.5: FINFISH MIGRATORY PATHWAYS**

*Finfish migratory pathways are waterways (rivers, streams, creeks, bays and inlets) which can be determined to serve as passageways for diadromous fish to or from seasonal spawning*

areas, including juvenile anadromous fish which migrate in autumn and those listed by H.E. Zich (1977) "New Jersey Anadromous Fish Inventory" NJDEP Miscellaneous Report No. 41, and including those portions of the Hudson and Delaware Rivers within the coastal zone boundary.

1. Species of concern include: alewife or river herring (*Alosa pseudoharengus*), blueback herring (*Alosa sapidissima*), American shad (*Alosa aspidissima*), striped bass (*Monroe saxatilis*), Atlantic sturgeon (*Acipenser oxyrinchus*), Shortnose sturgeon (*Acipenser brevirostrum*) and American eel (*Anguilla rostrata*).

Development which lowers water quality to such an extent as to interfere with the movement of fish along finfish migratory pathways or to violate State and Delaware River Basin Commission water quality standards is prohibited.

Mitigating measures are required for any development which would result in: lowering dissolved oxygen levels, releasing toxic chemicals, raising ambient water temperature, impinging or suffocating fish, entrainment of fish eggs, larvae or juveniles, causing siltation, or raising turbidity levels during migration periods.

In-water work within the lower Raritan River would be avoided from March 1 to June 30 of each year in order to minimize impacts to alewife and blueback herring, as well as other diadromous species migrating up and down river to spawn. Increases in suspended sediment during construction would be localized and temporary and would not adversely affect fish migration. Should in-water construction work associated with installation of the piers of the new bridge cause any fish to temporarily avoid the portion of the Raritan River in the vicinity of the project site, the extent of the area that would be affected at any one time would be small and would not adversely affect fish migration. Operation of the bridge would not adversely affect fish migration. Therefore, the project would be consistent with this rule.

#### **7:7-9.15: INTERTIDAL AND SUBTIDAL SHALLOWS**

*Intertidal and subtidal shallows mean all permanently or temporarily submerged areas from the spring high water line to a depth of four feet below mean low water. Development, filling, and new dredging are generally discouraged in intertidal and subtidal shallows, but may be permitted in accordance with the Use Policy for the applicable water body type (in this case, large rivers). Submerged infrastructure is conditionally acceptable, provided that where directional drilling is not feasible, there is no feasible alternative route that would not disturb intertidal and subtidal shallows, the infrastructure is located deeply enough to avoid exposure or hazard, and all trenches are backfilled to the preconstruction depth with naturally occurring sediment.*

Given the need for the replacement of the existing bridge, there is no feasible alternative that would not result in disturbance to intertidal and subtidal shallows. Impacts to areas identified as beach, intertidal and subtidal shallows, tidal waters, and other coastal resources will require authorization under a Waterfront Development Permit (for in-water and upland activities). Depending on the extent of permanent impacts to intertidal and subtidal shallows areas resulting from project implementation, compensatory mitigation may need to be provided as conditions of the permit authorizations from the NJDEP and the United States Army Corps of Engineers (USACE). With the implementation of mitigation measures and compliance with any

other conditions issued with permits from USACE and NJDEP, the proposed project would be consistent with this rule.

**7:7-9.25: FLOOD HAZARD AREAS**

*Flood hazard areas are areas subject to flooding from the flood hazard area design flood, as defined by the Department under the Flood Hazard Area Control Act rules at N.J.A.C. 7:13. Flood hazard areas include those areas mapped as such by the Department, areas defined or delineated as an A or a V zone by the Federal Emergency Management Agency (FEMA), and any unmapped areas subject to flooding by the flood hazard area design flood. Flood hazard areas are subject to either tidal or fluvial flooding and the extent of flood hazard areas shall be determined or calculated in accordance with the procedures at N.J.A.C. 7:13-3. Where flood hazard areas have been delineated by both the Department and FEMA, the Department delineations shall be used.*

*In a tidal flood hazard area below the mean high water line, this section shall apply only to the following activities:*

- 1. Development of habitable buildings; and*
- 2. Construction of railroads, roadways, bridges and/or culverts.*

*In an undeveloped portion of a flood hazard area that is within 100 feet of a navigable water body, development is prohibited unless the development is one or two single-family homes or duplexes in accordance with N.J.A.C. 7:7-15.2(e) or is for a water dependent use. "Navigable" and "water dependent" are defined at N.J.A.C. 7:7-1.5.*

*In a portion of an undeveloped flood hazard area that is 100 feet or farther from a navigable waterway, development is conditionally acceptable provided the development would not prevent potential water-dependent use in any portion of the flood hazard area within 100 feet of a navigable water body.*

*Development in flood hazard areas shall conform with the applicable design and construction standards of the following:*

- 1. The Flood Hazard Area Control Act, N.J.S.A. 58:16A-50 et seq., and implementing rules at N.J.A.C. 7:13, except in lands regulated under the Wetlands Act of 1970, N.J.S.A. 13:9A-1 et seq., pursuant to N.J.S.A. 58:16A-60;*
- 2. The Uniform Construction Code, N.J.A.C. 5:23; and*
- 3. The Federal flood reduction standards, 44 C.F.R. Part 60.*

*Development in a flood hazard area shall comply with the requirements for impervious cover and vegetative cover under N.J.A.C. 7:7-13.*

*If endangered and/or threatened wildlife or species habitat is present in the flood hazard area such that the area is also an endangered or threatened wildlife or plant species habitat special area in accordance with N.J.A.C. 7:7-9.36, then the requirements of N.J.A.C. 7:7-9.36, endangered or threatened wildlife or plant species habitats, shall apply.*

The project occurs within a floodplain zone (see N.J.A.C. 7:7-9.26 below). Although a bridge is not specifically identified as a "water dependent use" at N.J.A.C. 7:7-1.5, the rule provides a

test for water dependency. The test for water dependency shall assess both the need of the proposed use for access to the water and the capacity of the proposed water body to satisfy the requirements and absorb the impacts of the proposed use. A proposed use would not be considered water dependent if either the use can function away from the water or if the water body proposed is unsuitable for the use. In this case, because the proposed project is the bridge that carries NJ TRANSIT's NJCL across the Raritan River, water dependency is affirmed. Furthermore, the water body can absorb the proposed use because the project area includes the existing bridge.

Portions of the project study area are located within the 100-year floodplain. The proposed project will receive federal funding through the Federal Transit Administration (FTA), and therefore federal Executive Order 11988, "Floodplain Management," will apply. This Executive Order requires federal agencies to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. In addition, USDOT Order 5650.2, "Floodplain Management and Protection," contains policies and procedures for implementing Executive Order 11988.

The flood hazard area, which includes the 100-year floodplain and floodway, is regulated in New Jersey under the NJDEP Flood Hazard Area Control Act (FHA) Rules. Activities within flood hazard areas generally require formal permit authorization under the FHA Rules. Ordinarily, activities within regulated flood hazard areas or riparian zones require separate FHA permits for authorization of these activities. Portions of the project will be subject to regulation under the NJDEP Waterfront Development Law and by rule, compliance with the FHA Rules will need to take place within the context of a Waterfront Development Permit and a separate FHA Permit will not be required for activities impacting flood hazard areas and riparian zones. The project will also conform to the requirements set at N.J.A.C. 7:7-9.36 for endangered and/or threatened wildlife and habitat. Upon conformance with the relevant policies just described, the proposed project will be consistent with this rule.

#### **7:7-9.26: RIPARIAN ZONES**

*A riparian zone exists along every regulated water, except there is no riparian zone along the Atlantic Ocean nor along any manmade lagoon, stormwater management basin, or oceanfront barrier island, spit or peninsula. Regulated waters are defined in the Flood Hazard Area Control Act rules at N.J.A.C. 7:13-2.2.*

*The riparian zone includes the land and vegetation within each regulated water described in N.J.A.C. 7:7, Coastal Zone Management Rules, as well as the land and vegetation within a certain distance of each regulated water as described in below. The portion of the riparian zone that lies outside of a regulated water is measured landward from the top of bank.*

*The width of the riparian zone along each regulated water described in (a) above is as follows:*

- 1. The riparian zone is 300 feet wide along both sides of any Category One water, and all upstream tributaries situated within the same HUC-14 watershed;*
- 2. The riparian zone is 150 feet wide along both sides of the following waters not identified above:*

- i. Any trout production water and all upstream waters (including tributaries);*
- ii. Any trout maintenance water and all upstream waters (including tributaries) within one linear mile as measured along the length of the regulated water;*
- iii. Any segment of a water flowing through an area that contains documented habitat for a threatened or endangered species of plant or animal, which is critically dependent on the regulated water for survival, and all upstream waters (including tributaries) within one linear mile as measured along the length of the regulated water; and*
- iv. Any segment of a water flowing through an area that contains acid producing soils; and*

3. *The riparian zone is 50 feet wide along both sides of all waters not identified in 1 or 2 above.*

The project crosses the riparian zone of the Raritan River. According to the rule for determining the riparian zone at N.J.A.C. 7:13-4.1, the portion of the riparian zone that occurs outside the regulated water is measured landward from the top of bank.

The project is not in a Category One water; therefore, the 300-foot riparian zone established at N.J.A.C. 7:13-4.1 does not apply. Category One waters are defined in the existing Surface Water Quality Standards rules at N.J.A.C. 7:9B-1.4 as "those waters designated in the tables in N.J.A.C. 7:9B-1.15(c) through (h), for purposes of implementing the antidegradation policies set forth in N.J.A.C. 7:9B-1.5(d), for protection from measurable changes in water quality characteristics because of their clarity, color, scenic setting, other characteristics of aesthetic value, exceptional ecological significance, exceptional recreational significance, exceptional water supply significance, or exceptional fisheries resource(s)."

The 150-foot riparian zone established at N.J.A.C. 7:13-4.1 does apply, because acid-producing soils have been identified within the project study area, and, therefore, the Raritan River and its associated tributaries within the study area are subject to 150-foot riparian zones. The NJDEP, Division of Land Use Regulation will make the final determination with regard to the widths of riparian zones on streams and waterbodies within the study area. Generally, activities within regulated flood hazard areas or riparian zones require separate FHA permits for authorization of these activities. However, portions of the project study area may be subject to regulation under the NJDEP Waterfront Law and by rule, compliance with the FHA Rules could take place within the context of a Waterfront Development Permit and a separate FHA Permit would not be required. Measures will be taken to conform to any applicable rule regarding the 150-foot riparian zone. Therefore, the project will be consistent with this rule.

#### **7:7-9.27: WETLANDS**

*Wetlands or wetland means an area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation. Development in wetlands defined under the Freshwater Wetlands Protection Act of 1987 is prohibited unless the development is found to be acceptable under the Freshwater Wetlands Protection Act Rules (N.J.A.C. 7:7A). Development of all kinds in all other wetlands not defined is prohibited unless the Department can find that the proposed development meets the following conditions:*

- *Requires water access or is water oriented as a central purpose of the basic function of the activity;*
- *Has no prudent or feasible alternative on a non-wetland site;*
- *Will result in minimum feasible alteration or impairment of natural tidal circulation (or natural circulation in the case of non-tidal wetlands); and*
- *Will result in minimum feasible alteration or impairment of natural contour or the natural vegetation of the wetlands.*

*If an application to disturb or destroy wetlands meets the standards for permit approval, the Department will require the applicant to mitigate for the loss or degradation of the wetlands. All mitigation proposals submitted to the Department shall be prepared in accordance with N.J.A.C. 7:7-17.*

Approximately 0.4 acres of a NJDEP-mapped freshwater wetland that occurs within the study area in South Amboy would have the potential to be adversely affected by the proposed project due to the westward shift of the railroad alignment with the replacement bridge. Any associated wetland transition area will also be adversely affected by the proposed project. Activities that impact this wetland will require a Section 404 permit from the USACE and a FWW permit from NJDEP.

Approximately 2 acres of the NJDEP saline coastal tidal marsh is located within the study area on the north side of the Raritan River and has the potential to be adversely affected by the Build Alternative. Activities that impact this wetland will require a Section 404 permit from the USACE and a Coastal Wetlands Permit from NJDEP.

Disturbances to freshwater wetlands and/or freshwater wetland transition areas require permits from the NJDEP under the Freshwater Wetlands Protection Act (FWPA) Rules and Section 401 of the Clean Water Act (“Water Quality Certification”). Depending upon the nature and extent of proposed impacts to freshwater wetlands and transition areas, Freshwater Wetlands General Permits (FWW GPs) may be applicable for proposed project activities. If disturbances to wetlands exceed the allowable thresholds of FWW GPs, then a Freshwater Wetlands Individual Permit (FWW IP) would be required under the FWPA Rules. Under the FWPA Rules, permanent disturbances to freshwater wetlands and State open waters that exceed 0.10 acre and are authorized under FWW GPs require compensatory mitigation. If an FWW IP is required, all impacts to freshwater wetlands are subject to compensatory mitigation. Activities affecting tidal wetlands within 1000 feet of the Raritan MHW elevation would require permits from the USACE under Section 404 of the Clean Water Act and from the NJDEP under the FWPA. In following the procedure for permitting described above, the proposed project will be consistent with this rule.

#### **7:7-9.28: WETLANDS BUFFERS**

*Wetlands buffer or transition area means an area of land adjacent to a wetland which minimizes adverse impacts on the wetlands or serves as an integral component of the wetlands ecosystem. Wider buffers than those noted below may be required to establish conformance with other Coastal Rules, including, but not limited to, 7:7-9.36 and 9.37.*

1. A wetlands buffer or transition area of up to 150 feet in width shall be established adjacent to all wetlands defined and regulated under the Freshwater Wetlands Protection Act.
2. For all other wetlands, including wetlands regulated under the Coastal Wetlands Act of 1970, a wetlands buffer of up to 300 feet shall be established.

Approximately 0.4 acres of a NJDEP-mapped freshwater wetland will be adversely affected by the proposed project due to the westward shift of the railroad alignment with the proposed project. Any associated wetland transition area will also be adversely affected by the proposed project. Activities that impact this wetland will require a Section 404 permit from the USACE and a FWW permit from NJDEP. This freshwater wetland area has also been identified as potentially being subject to 150-foot transition area. This is because foraging habitat for the state-threatened osprey (*Pandion haliaetus*) has been identified close to and within the wetlands area. Impacts to the transition area are anticipated. Disturbances to freshwater wetlands transition areas require permits from the NJDEP under the Freshwater Wetlands Protection Act (FWPA) Rules and Section 401 of the Clean Water Act (“Water Quality Certification”). In following the procedure for permitting for activities within the Freshwater Wetlands transition area, the proposed project will be consistent with this rule.

#### **7:7-9.34: HISTORIC AND ARCHAEOLOGICAL RESOURCES**

*Historic and archaeological resources include objects, structures, shipwrecks, buildings, neighborhoods, districts, and man-made or man-modified features of the landscape and seascape, including historic and prehistoric archaeological sites, which either are on or are eligible for inclusion on the New Jersey or National Register of Historic Places.*

*Development that detracts from, encroaches upon, damages, or destroys the value of historic and archaeological resources is discouraged, while adaptive reuse is encouraged. Mitigation measures must take place if the proposed development will irreversibly and/or adversely affect historic and archaeological resources.*

The proposed project will have an adverse effect on two buried vessels in the shoreline (Vessels 98 and 99) that have been determined eligible for the National Register (NR). Therefore, recordation and mitigation of the impacts to these significant shipwrecks is recommended. In addition, the proposed project will be constructed in a portion of the Raritan River with high sensitivity for marine archaeological resources. A marine archaeological survey of the offshore portions of the APE-Archaeology is recommended to determine the presence or absence of marine archaeological resources.

The proposed project will have an adverse effect on several railroad-related historic resources that are eligible for the NR that must be removed for construction of the new bridge. These include the following:

- Raritan River Drawbridge, which is individually eligible for the NR and a contributing resource to the New York and Long Branch Railroad Historic District;
- The New York and Long Branch Railroad Historic District and two other contributing resources to the district: Essay Tower and a substation;

- One contributing resource to the Pennsylvania Railroad Overhead Contact System Historic District: the railroad catenary system that extends across the bridge and along the upland approach tracks;
- The Perth Amboy & Elizabethport Branch of the Central Railroad of New Jersey Historic District and a contributing resource to the district, a signal bridge;
- A 450-foot-long section of track that is part of the proposed extension to the Camden & Amboy Railroad Main Line Historic District.

Mitigation to address these adverse effects to archaeological and historic resources are set forth in the a Section 106 MOA among the FTA, NJHPO, and NJ TRANSIT that will be executed following completion of this EA. Measures to be implemented include documentation of the canal barges, an archaeological survey of the underwater areas, and documentation of the historic bridge according to Historic American Engineering Record (HAER) standards. Therefore, the proposed project is in compliance with this rule.

#### **7:7-9.36: ENDANGERED OR THREATENED WILDLIFE OR VEGETATION SPECIES HABITATS**

*Endangered or threatened wildlife or plant species habitats are areas known to be inhabited on a seasonal or permanent basis by or to be critical at any stage in the life cycle of any wildlife or plant identified as "endangered" or "threatened" species on official Federal or State lists of endangered or threatened species, or under active consideration for State or Federal listing. The definition of endangered or threatened wildlife or plant species habitats include a sufficient buffer area to ensure continued survival of the population of the species. Absence of such a buffer area does not preclude an area from being endangered or threatened wildlife or plant species habitat.*

The project area contains mapped nest and foraging habitat for the state threatened cattle egret (*Pandion haliaetus*) and osprey (*Pandion haliaetus*), and nest and foraging habitat for the State endangered peregrine falcon (*Falco peregrinus*). It is assumed that wetland and water areas within the project study area may provide foraging habitat for the identified bird species. Impacts to potential foraging habitat for these bird species may be mitigated through impact minimization efforts. Additionally, potential impacts to these species may be avoided through the imposition of timing restrictions for project construction activities during the periods of the year when these species would be most vulnerable to disturbances. Timing restrictions, if required, would be imposed as a condition of the NJDEP Waterfront Development or Freshwater Wetland Permits anticipated for project implementation.

In addition, federally endangered adult and juvenile Atlantic sturgeon and federally endangered sea turtles have the potential to occur within the project area, but only as transients passing through. It is expected that the post-construction condition of habitat and forage for these species would be similar to that of the existing condition and, therefore, no adverse impacts to these endangered species are expected as a result of operation of the Build Alternative. Therefore, the proposed project will be consistent with this rule.

#### **7:7-9.38: PUBLIC OPEN SPACE**

*Public open space constitutes land areas owned or maintained by State, Federal, county and municipal agencies or private groups (such as conservation organizations and homeowner's associations) and used for or dedicated to conservation of natural resources, public recreation,*

*visual or physical public access or, wildlife protection or management. Public open space also includes, but is not limited to, State Forests, State Parks, and State Fish and Wildlife Management Areas, lands held by the New Jersey Natural Lands Trust (N.J.S.A. 13:1B-15.119 et seq.), lands held by the New Jersey Water Supply Authority (N.J.S.A. 58:1B-1 et seq.) and designated Natural Areas (N.J.S.A. 13:1B-15.12a et seq.) within DEP-owned and managed lands.*

*New or expanded public or private open space development is encouraged at locations compatible or supportive of adjacent and surrounding land uses. Development that adversely affects existing public open space is discouraged. Development within existing public open space is conditionally acceptable, provided that the development is consistent with the character and purpose of public open space, as described by the park master plan when such a plan exists. ... Provision of barrier free access to public open space is encouraged. All new development adjacent to public open space will be required to provide an adequate buffer area and to comply with the buffers and compatibility of uses rule, N.J.A.C. 7:7- 16.11. The buffer required will be dependent upon adjacent land uses and potential conflicts between users of public open space and the proposed adjacent land use.*

A large public park is located within the study area in Perth Amboy close to the project area. This park, Sadowski Parkway Waterfront Park, extends along Perth Amboy's Raritan River waterfront from the project site to Raritan Bay. In addition, a new public park, 2nd Street Community Park, is planned adjacent to the east side of the railroad right-of-way alongside the project site. The proposed alignment of the new bridge is west of the existing railroad right-of-way, which will increase the distance between these parks and the railroad. In addition, the planned 2nd Street Community Park has been designed in anticipation of its location adjacent to active railroad tracks, and includes a landscaped buffer and wall between the recreational uses and the tracks. With westward shift of the rail line, the proposed project will have a positive effect on public open space and will be consistent with this rule.

#### **7:7-12.14: BRIDGES**

*A bridge is any continuous structure spanning a water body, except for an overhead transmission line. Bridges are conditionally acceptable provided:*

- 1. There is a demonstrated need that cannot be satisfied by existing facilities;*
- 2. Pedestrian and bicycle use is provided for unless it is demonstrated to be inappropriate; and*
- 3. Fishing catwalks and platforms are provided to the maximum extent practicable.*

*This shall be taken into consideration during the design phase of all proposed bridge projects.*

The existing Raritan River drawbridge is more than 100 years old and suffered damage during Sandy in 2012, when ocean surge moved the approach girder spans out of alignment atop their supporting piers, resulting in the suspension of service across the bridge for three weeks after the storm. The purpose of the proposed project is to address the vulnerability of the existing Raritan River Drawbridge to major storm events, which will enhance the reliability of the NJCL. The proposed project will minimize delays to rail and maritime traffic by reducing the risk of bridge failures during storm events, and as a result of mechanical failures. To the extent safely practicable, mitigation strategies have been incorporated into the design of the project to minimize impacts. Therefore, the project would be consistent with this rule.

**7:7-14.1: RULE ON LOCATION OF LINEAR DEVELOPMENT**

*A linear development shall comply with the specific location rules to determine the most acceptable route, to the maximum extent practicable. If part of the proposed alignment of a linear development is found to be unacceptable under the specific location rules, that alignment (perhaps not the least possible distance) may nonetheless be acceptable, provided the following conditions are met:*

- 1. There is no prudent or feasible alternative alignment which would have less impact on sensitive areas and marine fish or fisheries as defined at N.J.A.C. 7:7-16.2;*
- 2. There will be no permanent or long-term loss of unique or irreplaceable areas;*
- 3. Appropriate measures will be used to mitigate adverse environmental impacts to the maximum extent feasible, such as restoration of disturbed vegetation, habitats, and land and water features; and*
- 4. The alignment is located on or in existing transportation corridors and alignments, to the maximum extent practicable.*

The proposed project is a linear development located on the existing transportation corridor and alignment. This rule may be applicable for some project elements. No reasonable alternatives would have less impact. There would be no permanent or long-term loss of unique or irreplaceable areas as part of the discussion of policies under N.J.A.C. 7:7-9.2 et seq. above, and any impacts to natural resources would be mitigated in accordance with an NJDEP-approved mitigation plan. To the extent safely practicable, mitigation strategies have been incorporated into the design of the project to minimize these impacts. Therefore, the proposed project will be consistent with this rule.

**7:7-14.2: BASIC LOCATION RULE**

*A location may be acceptable for development under N.J.A.C. 7:7-9, 12, 13, and 14, but the Department may reject or conditionally approve the proposed development of the location as reasonably necessary to:*

- 1. Promote the public health, safety, and welfare;*
- 2. Protect public and private property, wildlife and marine fisheries; and*
- 3. Preserve, protect and enhance the natural environment.*

As discussed throughout this analysis (e.g., under N.J.A.C. 7:7-12.14 - ‘Bridges’), the project is designed to enhance public safety and welfare by providing a reliable and resilient transit system. The new bridge location will be 50 to 170 feet west of the existing bridge. To the extent safely practicable, the design of the proposed project will protect public and private property, wildlife, and marine fisheries, as well as other natural resources such as wetlands and subtidal shallows. Therefore, the proposed project will be consistent with this rule.

**7:7-14.3: SECONDARY IMPACTS**

*Secondary impacts are the effects of additional development likely to be constructed as a result of the approval of a particular proposal. Secondary impacts can also include traffic increases,*

*increased recreational demand and any other offsite impacts generated by onsite activities which affect the site and surrounding region.*

The proposed project will not result in an increase in train frequency, capacity or rail ridership. It also will not induce development nor will it result in population or employment growth. As a result, no secondary impacts will occur as a result of the Build Alternative. Therefore, the proposed project will be consistent with this rule.

**7:7-7.5: TRANSPORTATION USE RULE**

*Standards relevant to public transportation are as follows:*

- 1. A clear need exists, taking into account the alternatives of upgrading existing roads and of using public transportation to meet the need.*
- 2. Provision is made for coordinated construction of public transportation rights-of-way and facilities, such as bus lanes, rail lines, and related transit stop or station facilities and parking, except where such construction would not be feasible.*

The proposed project is intended to improve the reliability and resilience of the existing public transit system, to address damage caused during Sandy in 2012 and to prepare for future severe storm events.

The Raritan River Drawbridge carries the NJCL and freight trains operated by Conrail across the Raritan River between South Amboy and Perth Amboy, New Jersey, and is a critical rail link for the NJCL to the Northeast Corridor and job centers in Newark, Jersey City, and Manhattan. The Raritan River Drawbridge suffered structural damage during the storm named Sandy in October 2012, when ocean surge moved the approach girder spans out of alignment atop their supporting piers. Protection of the bridge from future storm events is key to ensuring continued public transportation and freight service on the NJCL, which is the third busiest of NJ TRANSIT's commuter rail lines. Replacement of the Raritan River Drawbridge is therefore a key element of NJ TRANSIT's resilience program to repair and restore the transit system and make the system more resilient to future storm events. Therefore, the proposed project will be consistent with this rule.

**7:7-16.2: MARINE FISH AND FISHERIES**

*Marine fish are marine and estuarine animals other than marine mammals and birds. Marine fisheries means:*

*One or more stocks of marine fish which can be treated as a unit for the purposes of conservation and management and which are identified on the basis of geographical, scientific, technical, recreational and economic characteristics;*

*Any activity that would adversely impact on the natural functioning of marine fish, including the reproductive, spawning and migratory patterns or species abundance or diversity of marine fish, is discouraged. In addition, any activity that would adversely impact any New Jersey based marine fisheries or access thereto is discouraged.*

Several stocks of marine and estuarine fish have the potential of occurring in the project area. The impacts to these marine fish and fisheries would be minimized through the use of low-impact construction methods, such as the use of low-speed vibratory drilling instead of impact

hammering. Impacts from the use of these construction methods would be well below both the physical and behavioral effect thresholds for species such as the endangered Atlantic sturgeon. NOAA also recommends that in-water work within the lower Raritan River be avoided from March 1 to June 30 of each year.

In addition, upon completion of the proposed project, the amount of benthic habitat available will increase by approximately 28,000 square feet, taking into consideration the area affected by the piers of the new bridge and also the area return to habitat upon removal of the old bridge. This will benefit marine fish that utilize benthic habitats for forage and/or nursery use. Therefore, the proposed project will not adversely impact marine fish species and fisheries and will be consistent with this rule.

### **7:7-16.3: WATER QUALITY**

*As required by Section 307(f) of the Federal Coastal Zone Management Act (P.L. 92-583), Federal, State and local water quality requirements established under the Clean Water Act (33 U.S.C. § 1251) shall be the water resource standards of the coastal management program. These requirements include not only the minimum requirements imposed under the Clean Water Act but also the additional requirements adopted by states, localities, and interstate agencies pursuant to Section 510 of the Clean Water Act and such statutes as the New Jersey Water Pollution Control Act. In the waters under the jurisdiction of the Interstate Sanitation Commission in the New Jersey-New York metropolitan area, the requirements include the Interstate Sanitation Commission's Water Quality Regulations. Department rules related to water pollution control and applicable throughout the entire coastal zone include, for example, the Surface Water Quality Standards (N.J.A.C. 7:9B), the rules concerning Wastewater Discharge Requirements (N.J.A.C. 7:9-5), the Ground-Water Quality Standards (N.J.A.C. 7:9C), and the Regulations Concerning the New Jersey Pollutant Discharge Elimination System (N.J.A.C. 7:14A).*

Surface Water Quality Standards for New Jersey Waters (N.J.A.C. 7:9B) establish the designated uses to be achieved and specify the water quality criteria necessary to protect the state's waters. Designated uses include potable water, propagation of fish and wildlife, recreation, agricultural and industrial supplies, and navigation. These are reflected in use classifications assigned to specific waters.

NJDEP classifies this portion of the Raritan River as freshwater non-trout, saline estuarine waters (FW2-NT/SE1) by the NJDEP Surface Water Quality Standards (N.J.A.C. 7:9B) indicating that the study area is within the portion of the Raritan River where more saline water from the Raritan Bay mixes with freshwater from upstream, resulting in an estuarine environment. A small, unnamed tributary to the Raritan River has also been mapped on the east side of the railroad right-of-way in South Amboy. The lower Raritan River within the study area is in attainment for the general water quality criteria but is on the New Jersey 2012 303(d) list of impaired waters for certain pollutants.

The proposed project's construction activities will be conducted so as to minimize any adverse impacts to water quality. In-water construction activities for the bridge superstructure will be limited to drilling large-diameter piles for the replacement bridge and driving small-diameter piles for the temporary trestles, which will cause minimal bottom disturbance. The piers will be installed using large-diameter drilled shafts or steel casings that are put into place by vibratory

hammering or twisting; once those are in place, the piers will be filled with concrete, an activity within the casing that will not affect water quality. Turbidity curtains will be used around the construction zones during pile installation to limit the potential for sediment to affect other areas of the river. During demolition of the existing bridge, sheet piling will be used around each pier being demolished to minimize sediment re-suspension. The speed of the current within the Raritan River at the project site ranges from 0.7 to 0.9 knots (NOAA, 2015). Any sediment resuspension that occurs during pile installation and the demolition of the existing bridge would be temporary and localized, and would be expected to dissipate shortly after the sediment-disturbing activity.

Disturbance to water quality from barging activities will also be limited. Construction barges for work in deeper waters will be only staged where water depths are sufficient to minimize bottom disturbance. By using temporary trestles in the shallow portions of the construction area, the proposed project will avoid the use of construction barges and tugboats in waters too shallow to allow for their operation without disturbing bottom sediment, and thereby minimize sediment disturbance.

Operation of the NJCL over the replacement bridge is expected to be similar to the operation over the existing bridge and would not result in adverse impacts to water quality. Therefore, the proposed project will be consistent with this rule.

**7:7-16.6: STORMWATER MANAGEMENT**

*If a project or activity meets the definition of “major development” at N.J.A.C. 7:8-1.2, then the project or activity shall comply with the Stormwater Management rules at N.J.A.C. 7:8.*

All construction activities will be conducted in accordance with the policies outlined at N.J.A.C. 7:8-1.2, if applicable. Therefore, the proposed project will be consistent with this rule.

**7:7-16.7: VEGETATION**

*Vegetation is the plant life or total plant cover that is found on a specific area, whether indigenous or introduced by humans. Coastal development shall preserve, to the maximum extent practicable, existing vegetation within a development site. Coastal development shall plant new vegetation, particularly appropriate coastal species native to New Jersey to the maximum extent practicable.*

The proposed project will impact tidal and freshwater wetland and upland vegetation through direct loss and temporary construction disturbance. The temporary loss of freshwater wetland will be mitigated, as discussed under N.J.A.C. 7:7-9.27 (Wetlands) and N.J.A.C. 7:7-9.28 (Wetlands Buffers). Small areas of upland vegetation will also be impacted by project implementation in the upland areas adjacent to the on-land track approaches on northern side of the Raritan River in Perth Amboy and on the southern side of the Raritan River in South Amboy. Generally, the upland vegetation habitats identified in the project area are consistent with highly disturbed urban settings and transportation corridors and contain numerous invasive species and species common to these disturbed areas. Impacts to or loss of significant upland habitat would not result from the Build Alternative. The long-term operation of the project would not result in an adverse impact to terrestrial ecological communities of the region. Therefore, the project would be consistent with this rule.

#### **7:7-16.8: AIR QUALITY**

*The protection of air resources refers to the protection from air contaminants that injure human health, welfare or property, and the attainment and maintenance of State and Federal air quality goals and the prevention of degradation of current levels of air quality.*

*Coastal development shall conform to all applicable State and Federal regulations, standards and guidelines and be consistent with the strategies of New Jersey's State Implementation Plan (SIP). See N.J.A.C. 7:27 and New Jersey SIP for ozone, particulate matter, sulfur dioxide, nitrogen dioxide, carbon monoxide, lead, and visibility.*

*Coastal development shall be located and designed to take full advantage of existing or planned mass transportation infrastructures and shall be managed to promote mass transportation services, in accordance with the Traffic rule, N.J.A.C. 7:7-16.12.*

The proposed project will shift the existing rail alignment of the NJCL westward at the Raritan River, and will allow an increase in the speed of trains operating across the bridge and will allow freight trains with heavier rail cars. No increase in the number of trains each day is planned as a result of the proposed project. These changes will not result in changes to air emissions, since there will be no change in overall train operations. Without the speed and weight limitations of the existing bridge, it is expected that trains will operate more efficiently. With a new bridge, freight trains could potentially carry heavier loads, which could accommodate freight operations that currently either require longer freight trains or may now be undertaken by truck. This could reduce fuel usage and likely result in lower emissions from locomotives. The new bridge will also improve the efficiency of maritime traffic passing the bridge. No changes in boat traffic are expected as a result of the proposed project, but boats may experience shorter waits for bridge openings, which could reduce localized diesel emissions from maritime traffic. Overall, therefore, no adverse air quality impacts are predicted. No violations of the National Ambient Air Quality Standards (NAAQS) will result from the project and no existing violations of the NAAQS will be exacerbated.

The NJ TRANSIT Raritan River Drawbridge Replacement project is included within the North Jersey Transportation Planning Authority's approved FY 2016-2019 Transportation Improvement Plan (TIP) (Project ID: T909) and FY 2016-2025 Statewide Transportation Improvement Program (STIP).

The proposed project is intended to improve the reliability and resilience of the mass transportation system, taking full advantage of the existing NJCL. Therefore, the proposed project will be consistent with this rule.

#### **7:7-16.10: SCENIC RESOURCES AND DESIGN**

*Scenic resources include the views of the natural and/or built landscape. Large-scale elements of building and site design are defined as the elements that comprise the developed landscape such as size, geometry, massing, height and bulk structures. New coastal development that is visually compatible with its surroundings in terms of building and site design, and enhances scenic resources is encouraged. New coastal development that is not visually compatible with existing scenic resources in terms of large-scale elements of building and site design is discouraged.*

With the proposed project, views in the Raritan River viewshed will change because of the replacement of the existing bridge with a new span. The new bridge, like the existing bridge, will consist of two long approach spans and a center, movable span. Three different movable bridge types are being evaluated for the center span. Regardless of which bridge type is selected, the new movable component will be designed to be visually consistent with the existing bridge in terms of overall aesthetic character. Like the existing bridge, it is anticipated that the new bridge will have an arched steel span, painted the same or a similar color to the existing bridge. In addition, the new bridge will also have tall steel towers to support the traction power cables that run above the bridge, as well as shorter catenary poles. Overall, therefore, while the new bridge will be slightly west of the existing bridge and will not be exactly the same as the old bridge, views in the Raritan River viewshed will not be greatly changed by the proposed project. Therefore, the proposed project will be consistent with this rule.

**7:7-16.12: TRAFFIC**

*Traffic is the movement of vehicles, pedestrians or ships along a route. Coastal development shall be designed, located and operated in a manner to cause the least possible disturbance to traffic systems. Alternative means of transportation, that is, public and private mass transportation facilities and services, shall be considered and, where feasible, incorporated into the design and management of a proposed development, to reduce the number of individual vehicle trips generated as a result of the facility.*

The project is being proposed as an improvement to a rail transportation route. The NJCL is a vital link in northern New Jersey's transportation infrastructure and the potential loss of both passenger and freight service on the NJCL would have significant implications for daily mobility among Jersey shore communities and local businesses. Loss of the NJCL service would impose traffic congestion, higher costs of travel, and longer travel times. It is therefore critical that the NJCL remain in service, safely and reliably.

The bridge is also used by Conrail Shared Assets Operations (a rail freight operator that is jointly owned by Norfolk Southern and CSX) for approximately two freight trains each day, for a total of 2 million tons of freight annually. The bridge is also part of the rail access route to the U.S. Navy base Naval Weapons Station Earle in Colts Neck, New Jersey, and the joint base McGuire-Dix-Lakehurst southeast of Trenton.

It also serves maritime traffic that uses the navigable channel in the Raritan River, including commercial waterway users, emergency service providers (e.g., the U.S. Coast Guard and state police), and some recreational users. The drawbridge opens an average of four to five times per day (with a daily maximum of about 14 openings per day during busy summer months) for both recreational and commercial marine traffic.

Replacing the bridge through the proposed project would ensure the continued transport of vehicles, ships, and people across and through the Raritan River; therefore, the proposed project will be consistent with this rule.

**7:7-16.14 SOLID AND HAZARDOUS WASTE**

*Solid waste means any garbage, refuse, sludge or other waste material, including solid, liquid, semi-solid or contained gaseous material. A material is a solid waste if it is "disposed of" by*

*being discharged, deposited, injected, dumped, spilled, leaked or placed into or on any land or water so that such material or any constituent thereof may enter the environment or be emitted into the air or discharged into ground or surface waters. Solid waste becomes a hazardous waste when it exhibits any of the characteristics which are specified in the Federal Regulations on Identification and Listing of Hazardous Waste (40 C.F.R. 261). The general characteristics of hazardous waste include, but are not limited to, characteristics of ignitibility, characteristics of corrosivity, characteristics of reactivity and characteristics of toxicity. Coastal development shall conform with all applicable State and Federal regulations, standards and guidelines for the handling and disposal of solid and hazardous wastes, including the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq., the Solid Waste Management rules, N.J.A.C. 7:26, the Recycling rules, N.J.A.C. 7:26A, and the Hazardous Waste rules, N.J.A.C. 7:26G.*

The project will be enrolled as a linear construction project (LCP) as per NJDEP Linear Construction Technical Guidance. Construction activities will comply with the Site Remediation Reform Act (SRRA, N.J.S.A. 58:10C-1 et seq.), the Administrative Requirements for the Remediation of Contaminated Sites (ARRCS, N.J.A.C. 7:26C), the NJDEP Technical Requirements for Site Remediation (TRSR, N.J.A.C. 7:26E), May 2012, and applicable NJDEP Technical Guidance documents. A Construction Health and Safety Plan (CHASP) will be prepared to address the contamination issues prior to construction activities for the project. The CHASP would be prepared in accordance with OSHA regulations for Hazardous Waste Operations and Emergency Response (HAZWOPER) (29 CFR 1910.120), OSHA construction safety requirements (29 CFR 1926), and other applicable regulations and guidelines for the field personnel. Therefore, the proposed project will be consistent with this rule. ■

**Appendix E**  
**CONSTRUCTION NOISE AND VIBRATION ANALYSIS**

In accordance with FTA guidance, the level of detail of a construction noise and vibration assessment depends on the scale and type of the project as well as the stage of environmental review. Based on preliminary engineering information, the project will be constructed over the course of approximately 36 months. Major construction activities, including sheet driving, drilling and demolition would be necessary to remove the existing bridge and construct the new structure. Construction-induced vibration should be quantitatively assessed for activities such as blasting, pile driving, vibratory compaction, demolition, drilling and excavation in close proximity to sensitive structures, as such activities have the greatest potential to generate vibration impacts. Further, noise and vibration-sensitive receptors are located north and south of the bridge. Therefore, a construction assessment is warranted.

Construction means and methods, schedule, number of truck deliveries and haul routes are currently unknown; therefore, in general accordance with FTA guidance, reasonable assumptions were formulated based on preliminary engineering in order to perform a General Assessment of on-site construction activities for both noise and vibration. The heaviest operations anticipated in three main stages of project construction were identified and evaluated. General assumptions regarding these stages are described within.

- **Foundation Installation**—Installation of the new bridge foundation includes construction of the piers and abutments. Based on preliminary engineering design, in-water piers would be installed within drilled shafts. Impact pile driving would not occur. Therefore, the analysis assumes that sheet driving will be necessary to create cofferdams prior to drilling shafts. Further, a vibratory hammer will likely be utilized to install the piers. While the existing abutments are constructed of unreinforced masonry, the analysis assumes the new abutments will be constructed of concrete. Therefore, the heaviest operation during this stage with the greatest potential to generate noise and/or vibration impact would be sheet driving/pier installation, which both require use of a vibratory hammer.
- **Demolition of Existing Structure**—The existing bridge deck, superstructure and approach spans are constructed of riveted steel, while existing piers are constructed of masonry. Steel is typically removed with shears or saw cut in strategic locations. Based on preliminary engineering design information, existing masonry piers will be removed with a crane. The heaviest operation associated with this construction stage with the greatest potential to generate noise impact is steel removal with shears. In accordance with FTA guidance, activities occurring during bridge demolition are not anticipated to generate significant vibration.
- **Installation of Railroad Infrastructure** – During this stage, communication and signal systems will be installed in addition to catenary supports and wires. New track will be installed approximately between Lewis Street in Perth Amboy and 800 feet south of the existing abutment in South Amboy. Track is typically installed with an excavator and tie

inserter. Track installation is therefore assumed to be the heaviest operation during this stage, with the greatest potential to generate noise impact. In accordance with FTA guidance, activities associated with installation of railroad infrastructure are not anticipated to generate significant vibration.

The three main construction stages, activities with the greatest potential to generate noise and/or vibration impacts, and reasonable equipment assumptions and quantities are summarized within **Table E-1**.

**Table E-1**  
**Construction Noise Scenarios**

Construction Stage	Heaviest Operation	Potential Equipment Type	Reasonable Equipment Quantity
Foundation Installation	Sheet Driving/Pier Installation	Vibratory Hammer	1
Demolition of Existing Structure	Steel Removal	Shears	1
Installation of Railroad Infrastructure	Track Installation	Tie Inserter	1
		Excavator	1

*CONSTRUCTION NOISE ASSESSMENT*

A modified version of the FTA General Assessment of on-site construction noise sources was performed utilizing information currently available to evaluate worst-case construction scenarios, assuming equipment operates continuously for one hour at full load and from the project center. Attenuation due to ground effects is typically ignored under General Assessment procedures. Based on the nature of sheet driving, and approximate work locations and limits, adjustments to the General Assessment procedures were made accordingly, as described below.

Reference noise levels for construction equipment at a distance of 50 feet are provided in FTA’s guidance manual as well as the Federal Highway Administration’s (FHWA) Roadway Construction Noise Model (RCNM) database. In accordance with the FTA guidance manual, it is acceptable to utilize RCNM to evaluate construction noise impacts and incorporate reference noise levels provided in FTA’s guidance document within RCNM.

The RCNM algorithms for predicting construction noise levels are consistent with FTA methodology and assume equipment are point sources of noise, whereby the rate of reduction in noise levels is approximately 6 decibels per doubling of distance. However, RCNM provides a much more comprehensive database of equipment and therefore includes additional pieces of equipment not provided in FTA’s guidance. Further, the RCNM database includes more realistic reference noise emission levels, particularly for a vibratory hammer, based on field-measured levels as part of the Central Artery/Tunnel project in Boston, Massachusetts. Therefore, to perform a reasonable worst-case construction noise analysis, the FHWA’s RCNM was utilized, including reference noise emission levels provided within the model. FHWA’s RCNM method for prediction of construction noise is computed based on using equation (1):

$$(1) \text{Leq} = \text{E.L.} + 10 \log(\text{U.F.}) - 20 \log\left(\frac{D}{50}\right) - 10G \log\left(\frac{D}{50}\right) - A_{\text{shielding}}$$

where:

$L_{eq}$  =  $L_{eq}$  at receptor location resulting from operation of single piece of equipment over a specified time period

E.L. = reference equipment noise emission level (based on a  $L_{max}$  at 50 ft)

U.F. = equipment usage factor (percentage of time that equipment is operating at full power over the specified time period)

D = distance between source and receptor (ft)

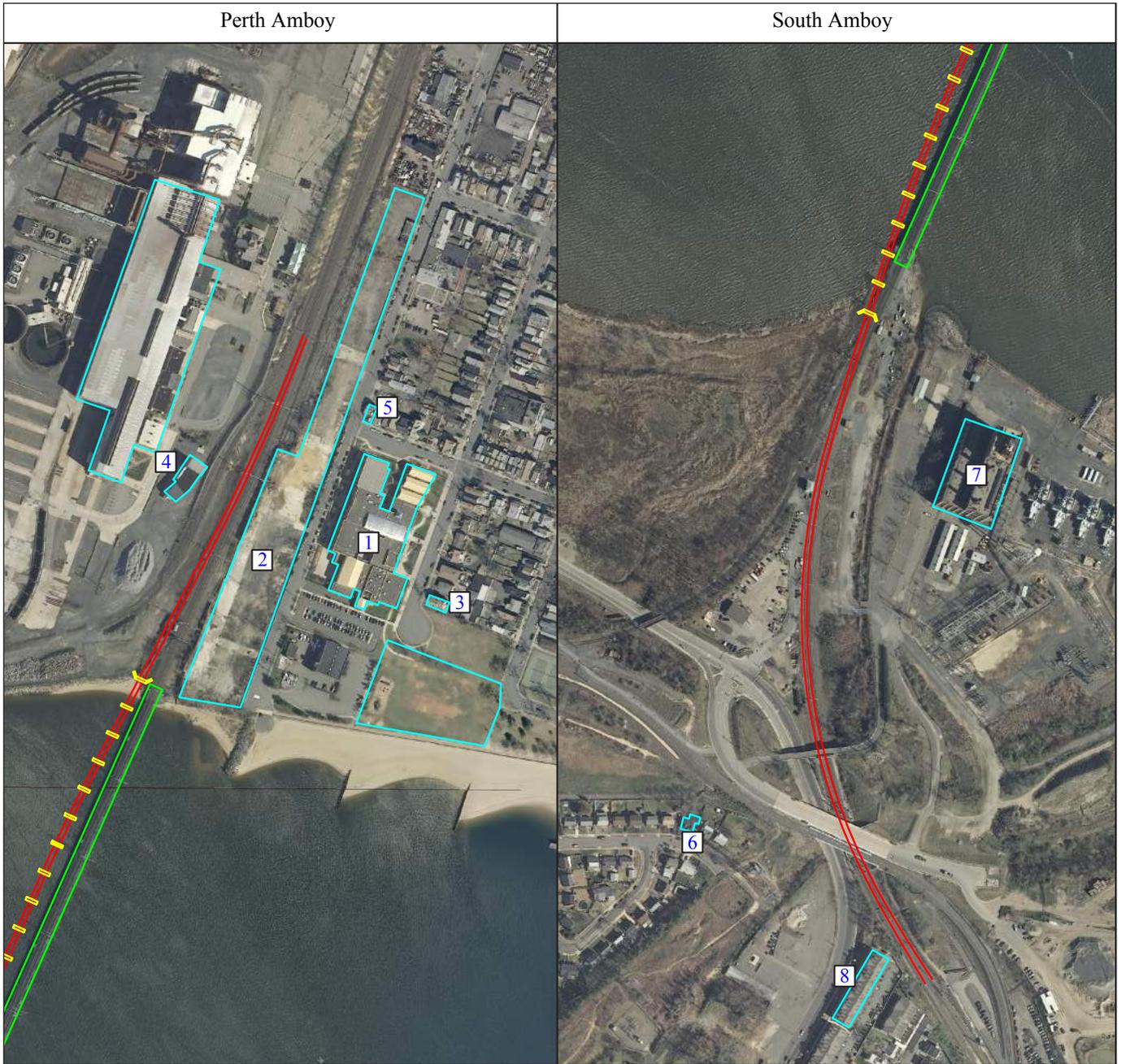
G = ground effects constant (zero for acoustically hard ground surface conditions)

$A_{shielding}$  = attenuation provided by intervening buildings, barriers, etc.

Default acoustic usage factors ('U.F.' in equation 1) provided in RCNM, representing the percentage of time equipment is operating during the analysis period, were also utilized rather than performing the analysis with the FTA General Assessment assumption that equipment operates continuously at full load for a one hour period (i.e., 100 percent of the hour). Due to soil obstructions and time to lift and ensure sheets are plumb, sheet driving operations do not typically run continuously for an entire hour.

Since approximate work locations and limits can be reasonably assumed for each activity (see **Figure E-1**), the analyses were performed based on these estimated work limits, as opposed to performing the analysis with the FTA General Assessment assumption that all equipment operates from project center. Consistent with FTA guidelines for General Assessment, ground effects ('G' in equation 1) were ignored (i.e., additional attenuation due to ground absorption was not accounted for in the analysis). Additional attenuation due to shielding by intervening buildings and barriers (' $A_{shielding}$ ' in equation 1) was also ignored in order to perform a preliminary worst-case analysis. Further, the analysis was performed for the closest, unobstructed noise-sensitive receivers to each construction activity.

Under FTA's General Assessment, construction noise levels are compared to both daytime (7:00 AM – 10:00 PM) and nighttime (10:00 PM – 7:00 AM) hourly equivalent noise level ( $L_{eq(h)}$ ) limits established for residential, commercial, and industrial land use. Due to the proximity of the proposed 2nd Street Community Park and the Robert N. Wilentz Elementary School to the areas of construction, and the daytime noise sensitivity of these facilities, these receptors were evaluated as residential land use for purposes of determining the potential for construction noise impacts. Weekday daytime construction during typical construction hours (i.e. 7:00 AM – 3:00 PM) was assumed for the analysis; therefore, impacts were assessed based on the daytime hourly equivalent noise level ( $L_{eq(h)}$ ) criteria for each land use type. FTA General Assessment construction noise criteria are presented in **Table E-2**.



-  Receiver Location
-  Receiver Number
-  Foundation Installation  
(Impact Pile Driving/Pier Installation)
-  Demolition of Existing Structure  
(Steel Removal)
-  Installation of Railroad Infrastructure  
(Track Installation)

Construction Activity and Receiver Locations  
Figure E-1

**Table E-2  
FTA Construction Noise Impact Criteria  
for General Noise Assessment**

Land Use	1-hour L <sub>eq</sub> (dBA) Daytime (7:00 AM – 10:00 PM)
Residential	90
Commercial	100
Industrial	100
<b>Source:</b> Transit Noise and Vibration Impact Assessment, FTA, FTA-VA-90-1003-06, May 2006, page 12-7.	

The closest receivers to each construction activity, representing each land use type (residential and commercial/industrial), as well as the proposed 2nd Street Community Park and Robert N. Wilentz Elementary School, were identified for the analysis. **Table E-3** summarizes the construction noise analysis locations in Perth Amboy and South Amboy. All receivers except 224 Lewis Street (Receiver No. 5) were included in the impact evaluations for sheet driving/pier installation and steel removal. Receiver No. 5 was not included in these impact evaluations because the closer residential receiver to sheet driving/pier installation and steel removal is receiver No. 3 (52 1st Street). For the impact evaluation related to track work, Receiver No. 5 replaced Receiver No. 3 as the closest residential land use type to the construction activity in Perth Amboy. Similarly, Receiver No. 8 was not included in the impact evaluations for impact pile driving and steel removal because the closer residential receiver to those activities in South Amboy is Receiver No. 6 (92 Pupek Road). However, for the impact evaluation related to track work, Receiver No. 8 (Beacon Pointe Condos) replaced Receiver No. 6 as the closest residential land use type to the construction activity in South Amboy.

**Table E-3  
Construction Noise Assessment Analysis Locations**

Receiver No.	Receiver Location	Land Use
1	Robert N. Wilentz Elementary School	Institutional
2	Future Site of 2nd Street Community Park	Recreational
3*	52 1st Street	Residential
4	Gerdau Ameristeel	Commercial/Industrial
5	224 Lewis Street	Residential
6	92 Pupek Road	Residential
7	Werner Generating Station	Commercial/Industrial
8	Beacon Pointe Condos	Residential
<b>Note:</b> * Receiver No. 3 represents the closest residential land use to both sheet driving/pier installation and steel removal, while Receiver Nos. 5 and 8 are the closest residential land use to track installation. <b>Source:</b> Paul Carpenter Associates, Inc., 2016.		

**Tables E-4, E-5, and E-6** summarize the results of the Construction Noise General Assessment for sheet driving/pier installation during foundation installation, steel removal during demolition of the existing structure, and track work during infrastructure installation, respectively.

**Appendix E: Construction Noise and Vibration Analysis**

**Table E-4**  
**Construction Noise Assessment Results**  
**Foundation Installation – Sheet Driving/Pier Installation**

Analysis Location No.	Analysis Location	Land Use	FTA Daytime Impact Criteria (dBA)	Distance Activity (ft)	Predicted 1-hour L <sub>eq</sub> Construction Noise Level (dBA)	Exceeds FTA Daytime Criteria?
1	Robert N. Wilentz Elementary School	Institutional	90	626	72.3	NO
2	Future Site of 2nd Street Community Park	Recreational	90	111	87.4	NO
3	52 1st Street	Residential	90	893	69.2	NO
4	Gerdau Ameristeel	Commercial/ Industrial	100	598	72.7	NO
6	92 Pupek Road	Residential	90	1618	64.1	NO
7	Werner Generating Station	Commercial/Industrial	100	418	75.8	NO

**Source:** Paul Carpenter Associates, Inc., 2016.

**Table E-5**  
**Construction Noise Assessment Results**  
**Demolition of Existing Structure – Steel Removal**

Analysis Location No.	Analysis Location	Land Use	FTA Daytime Impact Criteria (dBA)	Distance to Activity (ft)	Predicted 1-hour L <sub>eq</sub> Construction Noise Level (dBA)	Exceeds FTA Daytime Criteria?
1	Robert N. Wilentz Elementary School	Institutional	90	613	70.5	NO
2	Future Site of 2nd Street Community Park	Recreational	90	63	90.2	YES
3	52 1st Street	Residential	90	869	67.4	NO
4	Gerdau Ameristeel	Commercial/Industrial	100	650	69.9	NO
6	92 Pupek Road	Residential	90	1838	60.9	NO
7	Werner Generating Station	Commercial/Industrial	100	530	71.7	NO

**Source:** Paul Carpenter Associates, Inc., 2016.

**Table E-6**  
**Construction Noise Assessment Results**  
**Installation of Railroad Infrastructure – Track Installation**

Analysis Location No.	Analysis Location	Land Use	FTA Daytime Impact Criteria (dBA)	Distance to Activity (ft)	Predicted 1-hour L <sub>eq</sub> Construction Noise Level (dBA)	Exceeds FTA Daytime Criteria?
1	Robert N. Wilentz Elementary School	Institutional	90	299	66.9	NO
2	Future Site of 2nd Street Community Park	Recreational	90	49	82.6	NO
4	Gerdau Ameristeel	Commercial/ Industrial	100	112	75.4	NO
5	224 Lewis Street	Residential		255	68.2	NO
6	92 Pupek Road	Residential	90	348	65.5	NO
7	Werner Generating Station	Commercial/Industrial	100	59	81.0	NO
8	Beacon Pointe Condos	Residential	90	299	66.9	NO

**Source:** Paul Carpenter Associates, Inc., 2016.

As shown in the tables, the only receiver predicted to experience noise levels in excess of the FTA daytime construction noise criterion of 90 dBA ( $L_{eq(h)}$ ) is the future site of the 2nd Street Community Park during steel removal in the existing structure demolition stage. In all other locations, noise levels are predicted to be below the applicable FTA daytime construction noise criteria.

**CONSTRUCTION VIBRATION ASSESSMENT**

Due to the possible use of pile driving to install new in-water bridge piers as well as the piers at the abutment wall, there is a potential for significant construction-induced vibrations during the bridge foundation installation stage. The use of a vibratory hammer to initially drive piles will also generate significant vibrations; however, due to the higher source vibration levels generated by an impact pile driver, only the impact pile driving operation was assessed.

Impacts related to construction-generated vibration are typically assessed based on structural damage and annoyance thresholds. Structural damage is based on the peak particle velocity (PPV) of the vibrations in inches per second (in/sec), and the criteria for assessing damage is based on building material, as presented in **Table E-7**. All structures were assumed to be Building Category II structures, which are buildings constructed of engineered concrete and masonry. PPV estimates above 0.3 in/sec indicate a potential for damage to a structure in this category.

Vibration annoyance is evaluated based on vibration velocity levels ( $L_v$ ) measured in units of VdB. FTA criteria for assessing annoyance due to construction-related vibrations are based on the three land use presented in **Table E-7**. There are no vibration Category 1 land use types within the study area.

**Table E-7**  
**FTA Construction Vibration Annoyance Criteria**

Land Use Category	GBV Impact Levels (VdB re 1 micro-inch/sec)		
	Frequent Events	Occasional Events	Infrequent Events
Category 1: Buildings where vibration would interfere with interior operations.	65 VdB <sup>4</sup>	65 VdB <sup>4</sup>	65 VdB <sup>4</sup>
Category 2: Residences and buildings where people normally sleep.	72 VdB	75 VdB	80 VdB
Category 3: Institutional land use with primarily daytime use.	75 VdB	78 VdB	83 VdB
<b>Notes:</b> <ol style="list-style-type: none"> <li>1. "Frequent Events" is defined as more than 70 vibration events of the same source per day.</li> <li>2. "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day.</li> <li>3. "Infrequent Events" is defined as fewer than 30 vibration events of the same kind per day.</li> <li>4. This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels.</li> </ol>			
<b>Source:</b> FTA Transit Noise and Vibration Impact Assessment, May 2006. Report No. FTA-VA-90-1003-06, page 8-3.			

For comparison to the criteria, it was assumed that vibration events would be infrequent (i.e., less than 30 events per day, per the FTA criterion definition), thereby indicating that vibration velocity levels above 80 VdB would be considered to be annoying to nearby residents, and above 83 VdB would be considered to be annoying to nearby structures with office spaces.

The FTA's May 2006 guidance manual includes a list of construction equipment with reference vibration source levels in PPV and VdB at a distance of 25 feet. The reference source levels are representative of a variety of measured data. Although soil conditions can vary actual vibrations, FTA guidance states that these reference source levels provide a reasonable estimate for a wide range of soil conditions. For the sheet driving operation, the upper range value of a sonic (vibratory) pile driver was utilized to perform a conservative worst-case analysis.

Reference source levels are utilized within equations (2) and (3), which are provided in the FTA's guidance manual, to identify vibration velocity levels at nearby structures. Equation (2) was utilized to perform the construction vibration damage assessment, and includes a factor "n" to account for the attenuation rate of vibrations through the ground in accordance with FTA procedures. The value of "n" may be varied if detailed soil information is known. An "n" value of 1.5 is representative of "competent soils" (including sand, sandy clays, silty clays, silts, gravel and weathered rock). Equation (3) was utilized to predict vibration velocity levels for the annoyance assessment.

$$(2) PPV_{\text{equip}} = PPV_{\text{ref}} * \left(\frac{25}{D}\right)^n; \text{ and}$$

$$(3) Lv(D) = Lv(25\text{ft}) - 30\log\left(\frac{D}{25}\right)$$

where:

PPVref = reference vibration level in in/sec at 25 feet

D = distance between source and receptor (ft)

n = attenuation rate of vibrations through the ground

Equations (2) and (3) were manipulated to determine impact areas. Specifically, within 45 feet of the sheet driving/pier installation operation, utilizing one vibratory hammer, there is a potential for vibration-induced structural damage. There are no structures within this impact area; therefore, structural damage is not anticipated as a result of sheet driving or pier installation utilizing one vibratory hammer.

Vibration-induced annoyance to residential land use (Category 2) is predicted to occur within 170 feet of the sheet driving/pier installation operation utilizing one vibratory hammer. Vibration-induced annoyance to institutional or commercial structures with quiet office spaces (Category 3) is predicted to occur within 135 feet of the sheet driving/pier installation operation utilizing one vibratory hammer. Since there are no residential, institutional or commercial structures with quiet office spaces within applicable distances from the sheet driving/pier installation operation, utilizing one vibratory hammer, vibration-induced

annoyance is not anticipated to occur during project construction. **Table E-8** summarizes the results of the construction vibration impact assessment for vibration-induced structural damage and annoyance.

**Table E-8**  
**Construction Vibration General Assessment Results**

Vibration Impact Type	Land Use	Structures Within Sheet Driving/Pier Installation Impact Areas
Structural Damage	All Structures	NO
Annoyance	Category 2	NO
	Category 3	NO
<b>Source:</b> Paul Carpenter Associates, Inc., 2016.		



**Appendix F**  
**AGENCY AND PUBLIC OUTREACH COORDINATION**

**Appendix F**  
**AGENCY AND PUBLIC OUTREACH COORDINATION**

**F-1: Public Outreach Summary**

## F.1 INTRODUCTION

A summary of the public outreach events that have occurred to date and the feedback received from these events are presented below. NJ TRANSIT held two public information sessions and a Waterway User Survey was conducted (see Appendix H) to inform the proposed project's design.

## F.2 PUBLIC INFORMATION SESSIONS

Public information sessions were held in Perth Amboy and South Amboy on September 20, 2016, and September 27, 2016, respectively. The Perth Amboy meeting was held in the Community Room of the Alexander F. Jankowski Community Center, and the South Amboy meeting was held in the South Amboy Council Chambers. Notices of the meetings were widely distributed and advertised in English- and Spanish-language newspapers. English and Spanish notices of the sessions were posted at the Section 8 housing authorities in Perth Amboy and South Amboy and at the Perth Amboy Public Library and the Sadie Pope Dowdell Public Library. In addition, e-blast notifications and letters were sent to stakeholders in the public outreach database. At the Public Information Sessions a project fact sheet (in English and Spanish) and presentation boards describing the proposed project and NEPA process were available, a short presentation was given, and project team members were available to answer questions. Spanish interpretation services were available at the meetings.

There were 18 attendees at the South Amboy Public Information Session and four people submitted comment forms, either in support of the proposed Project or requesting to be added to the Project's mailing list. At the Perth Amboy Public Information Session, there were 30 attendees and seven submitted substantive comments either at the meeting or via the Project's web page, as follows:

**Comment 1:** I'm concerned that the entire 70-mile plus path of NJ TRANSIT train tracks should be restored, with special consideration for wetland areas along the route. (Vincent Mackiel, resident)

**Response:** The Raritan River Bridge Replacement Project is only one of the projects in NJ TRANSIT's Resiliency Program, which is rebuilding the transit system to better withstand future severe weather events. To develop the Program, NJ TRANSIT identified the most vulnerable elements of the system and prioritized projects by taking into account funding availability and how best to meet the current and future needs of NJ TRANSIT customers. While elevating tracks on the entire NJCL is not part of the Resiliency Program, new signal devices, cabling, and Remote Terminal Units (RTUs), which control power for the catenary traction system when trains are in service, will be installed at elevations well above potential flood levels along the portion of the NJCL that is most vulnerable to flooding. In addition, wiring, cables and other components

that cannot be raised above the design flood elevation will be made more resilient with the use of waterproof components, connections and cabling systems. While track level flooding can cause service suspensions during severe storms, damage to the overhead catenary system and other electrical systems can result in longer term service suspensions and so are prioritized.

**Comment 2:** Any dredging disposal of the piles of materials should be done in conformance with current EPA approved methods for clean disposal, especially given the number of people who live in the many towns connected by the commuter corridor. (Vincent Mackiel, resident)

**Response:** The project will be enrolled as a linear construction project and adhere to the *New Jersey Department of Environmental Protection (NJDEP) Linear Construction Technical Guidance* and all relevant federal, state and local rules and regulations. Excavated material will be characterized via soil sampling to classify the material (e.g., as contaminated waste, petroleum-contaminated waste, historic fill containing construction and demolition debris, or uncontaminated native soils). Waste material will be stockpiled with soil and sediment control measures in place to prevent potential impacts to human health and the environment. Licensed waste haulers will be used to transport materials in accordance with local, state, and federal regulations. Licensed disposal facilities will be selected based on the type of waste being disposed and a NJ TRANSIT review of its practices.

**Comment 3:** Past munition conditions related to the 1950 South Amboy explosion should be investigated by proper naval personnel. I believe the Monmouth Base did an exploratory search in the South Amboy dock area around 1985-7. Having a search near the bridge replacement is advised. (Vincent Mackiel, resident)

**Response:** NJ TRANSIT will perform records search of all available existing data from local, state and federal agencies to identify and evaluate the potential for munitions from the 1950 South Amboy Explosion within the project area and take the necessary actions prior to any construction activities. All Munitions and Explosives of Concern (MEC) clearance activities and unexploded ordnance (UXO) identified will first be cleared of potential munitions hazards by UXO-qualified personnel having expertise in the Military Munitions Response Program (MMRP). UXO-qualified personnel will inspect, transport and dispose of all recovered munitions in accordance with applicable Department of Defense (DoD) requirements. Additionally, a sampling program will be conducted to identify potentially contaminated/hazardous materials within the project's construction footprint. Sampling will be performed in accordance with the NJDEP *Field Sampling Procedure Manual*, August 2005 and will comply with all applicable federal, state and local rules and regulations. A Materials Management Plan (MMP) will be developed to manage any contaminated media encountered during construction. On-site monitoring will ensure that handling, stockpiling, and disposal of contaminated

soil, groundwater, or any other media is done in compliance with the MMP and all regulatory requirements. The plan will include methods to minimize/avoid disturbance of contaminated soil and groundwater, and describe procedures for proper storage, disposal, or re-use of contaminated soil.

**Comment 4:** As part of a redevelopment initiative, there is a popular interest to connect the waterfront from Sadowski Parkway to Riverview Drive. With the train elevation of six feet, what is the viability of creating a promenade/walkway for pedestrians and bikes. This initiative is part of many development conversations including the city's municipal arts plan. It would be acceptable if the underpass would be subject to flooding. The nature of what is desired can be seen behind the Raritan Yacht Club, where the waterfront walkway has been extended. (Lisett Lebron, Perth Amboy Redevelopment Team for Neighborhood Enterprise and Revitalization aka P.A.R.T.N.E.R.; Greg Bender, President of Perth Amboy Artworks)

**Response:** The Build Alternative will facilitate the construction of a promenade/walkway for pedestrians and bikes. The abutment of the proposed bridge would be located upland from the existing abutment and at a greater distance from the water's edge. This would allow an adequate area to accommodate the waterfront path beneath the bridge along the shoreline and outside of tidal fluctuations. The height of the proposed bridge would provide for adequate vertical clearance for bicyclists.

**Comment 5:** This question is directed to the improvements to the Perth Amboy train station. There is currently a grant initiative to utilize the Elm Street train station entrance for a farmer's market. Who would be the contact to ensure use of property as well as partner in conversations to help launch this concept plan? (Lisett Lebron, Perth Amboy Redevelopment Team for Neighborhood Enterprise and Revitalization aka P.A.R.T.N.E.R.)

**Response:** This comment is not related to the Raritan River Bridge Replacement Project and has been forwarded to the Project Manager of the Perth Amboy Station Platforms project.

**Comment 6:** Please consider a secondary reuse of the existing bridge as a fishing pier. You have to maintain the existing structure in usable condition until the new bridge is completed. Perth Amboy is currently building a 2 ½ block long city park immediately adjacent to the NJ TRANSIT right-of-way. This could add more diversity to activities in the park. Even if only several piers of the old bridge could be converted to a public pier it would be useful to the city and would save NJ TRANSIT the cost of demolition. The public pier would also serve as a breakwater to limit storm impacts on the new structure and provide much needed habitat for our struggling ecosystem. On the South Amboy side, the city is in the process of re-establishing ferry service on the old generating station property. Residential properties on the west side of the railroad right-of-way are planned and might welcome another amenity to make his project more acceptable to

South Amboy citizens. (Bill Schultz, Raritan Riverkeeper; Greg Bender, President of Perth Amboy Arts Council, Captain Paul Eidman)

**Response:** NJ TRANSIT evaluated leaving several piers of the existing bridge in place on either or both sides of the River as a fishing pier. However, the close proximity of the fishing pier to the new bridge would violate the railroads safety standards. The fishing pier would be located within the fouling zone of the railroad and arcing electricity from the overhead catenary system would be problematic. Additionally, security would be a concern. In addition, the remnant of the bridge would have adverse effects on the plans for waterfront walkway/bikeway connection (which could be constructed beneath the new bridge) and aquatic natural resources, which are affected by shading and loss of water area. For these reasons, a fishing pier cannot be accommodated and the existing bridge (or any portion of it) cannot be left in place.

**Comment 7:** What is the funding source and budget for this project? (S. D. Hubberman)

**Response:** The project, which is estimated to cost approximately \$595,000 million in 2016 dollars, is being funded through the Federal Transit Administration's Emergency Relief Program.

**Comment 8:** I had the understanding from prior conversations that the overall above mean high water clearance (not just in swing opening portion) would be much higher than this video suggests. Please clarify fixed portion clearance and opening clearance. Thank you. (Denise Nickel)

**Response:** The existing bridge has eight feet vertical clearance to the Mean High Water level in closed position. The new bridge will be raised an additional ten feet to protect the railroad tracks and equipment from future storm surges. Therefore, the vertical clearance in a closed position will increase to 18 feet. The height of the new bridge is limited by the need to tie into the existing railroad tracks prior to the Perth Amboy and South Amboy stations while maintaining a grade of less than 1.5 percent to permit the operation of freight trains on the North Jersey Coast Line. In the open position the vertical lift will provide a vertical clearance of 110 feet, which is the same as the vertical clearance of the adjacent Victory Bridge.

**Comment 9:** From the overview presentation, I believe NJ TRANSIT did an excellent job in both alternatives analysis and selection of the best opening span and alignment. This alternative appears cost effective and will result in minimum community and rail rider impacts. (Greg Bender, President of Perth Amboy Arts Council)

**Response:** Comment noted.

**Comment 10:** The Perth Amboy Arts community views the historic signal bridge structure, near the old bridge, as a potential "gateway" to the City's proposed Second Street Park. This

structure would serve as an industrial sculpture and a link to a Perth Amboy's transportation and manufacturing past. Request that it be preserved and not scrapped. (Greg Bender, President of Perth Amboy Arts Council)

**Response:** If an agreement can be worked out with the City of Perth Amboy, NJ TRANSIT will donate the historic signal bridge structure for use in the proposed Second Street Park.

**Comment 11:** The new bridge will be built with higher strength pilings and piers so that much larger freight cars could move over it. While increasing the capacity of the bridge to 286,000 lb cars makes sense since it's essentially the new standard for rail freight, going to 315,000 lbs seems like "requirement creep". As such, it's really an economic development initiative and an exclusive benefit to the CONRAIL Shared Assets freight railroad. Is the freight railroad paying for incremental additional cost? (Greg Bender, President of Perth Amboy Arts Council)

**Response:** The project is federally funded (see response to Comment 7 above) and will be designed to meet code requirements for its structural capacity. Since the new bridge will have a useful life of 75 to 100 years, it would be remiss to only address today's standards for rail freight. Transporting freight by rail is environmentally beneficial, since it reduces highway congestion, truck traffic, and associated air emissions.

■

**Appendix F**

**AGENCY AND PUBLIC OUTREACH COORDINATION**

**F-2: Agency Comments on  
Draft Environmental Assessment and Responses**



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
GREATER ATLANTIC REGIONAL FISHERIES OFFICE  
55 Great Republic Drive  
Gloucester, MA 01930-2276

**APR 20 2017**

Dan Moser  
Federal Transit Administration - Region 2  
1 Bowling Green, Room 429  
New York, NY 10004

**Re: New Jersey Transit Raritan River Bridge Replacement Project**

Dear Mr. Moser:

We received your email on April 18, 2017, regarding the proposed Raritan Bridge replacement project. In your email, you requested comments regarding the draft environmental assessment. We offer the following comments.

**Endangered Species Act**

*Sea Turtles*

Four species of ESA listed threatened or endangered sea turtles under our jurisdiction are seasonally present in Raritan Bay and could occur in the lower Raritan River: the threatened Northwest Atlantic Ocean distinct population segment (DPS) of loggerhead, the threatened North Atlantic DPS of green, and the endangered Kemp's ridley and leatherback sea turtles. Sea turtles typically occur along the New York coast from May to mid-November, with the highest concentration of sea turtles present from June through October.

*Atlantic Sturgeon*

Atlantic sturgeon are present in the waters of Raritan Bay and could occur in the lower Raritan River. The New York Bight, Chesapeake Bay, Carolina, and South Atlantic DPS of Atlantic sturgeon are endangered; the Gulf of Maine DPS is threatened. Adult and subadult Atlantic sturgeon originating from any of these DPSs could occur in the proposed project area. As young remain in their natal river/estuary until approximately age 2, and early life stages are not tolerant of saline waters, no eggs, larvae, or juvenile Atlantic sturgeon will occur within the waters of Raritan Bay and the lower Raritan River.

As project details develop, we recommend you consider the following effects of the project on sea turtles and sturgeon:

- For any impacts to habitat or conditions that temporarily render affected water bodies unsuitable for the above-mentioned species, consider the use of timing restrictions for in-water work.
- For activities that increase levels of suspended sediment, consider the use of silt management and/or soil erosion best practices (i.e., silt curtains and/or cofferdams).



- For the relocation of underground cables, consider using the Horizontal Directional Drilling (HDD) method which would prevent the mechanical activity coming into contact with sea turtles and sturgeon in the area.
- For pile driving or other activities that may affect underwater noise levels, consider the use of cushion blocks and other noise attenuating tools to avoid reaching noise levels that will cause injury or behavioral disturbance to sea turtles, and sturgeon - see the table below for more information regarding noise criteria for injury/behavioral disturbance in sturgeon or sea turtles.

Organism	Injury	Behavioral Modification
Sturgeon	206 dB re 1 $\mu$ PaPeak and 187 dB cSEL	150 dB re 1 $\mu$ PaRMS
Sea Turtles	180 dB re 1 $\mu$ PaRMS	166 dB re 1 $\mu$ PaRMS

Depending on the amount and duration of work that takes place in the water, listed species of sea turtles and sturgeon may occur within the vicinity of your proposed project. The Federal Transit Administration will be responsible for determining whether the proposed action may affect listed species. If they determine that the proposed action may affect a listed species, they should submit their determination of effects, along with justification and a request for concurrence to the attention of the Section 7 Coordinator, NMFS, Greater Atlantic Regional Fisheries Office, Protected Resources Division, 55 Great Republic Drive, Gloucester, MA 01930 or nmfs.gar.esa.section7@noaa.gov. Please be aware that we have recently provided on our website guidance and tools to assist action agencies with their description of the action and analysis of effects to support their determination. See - <http://www.greateratlantic.fisheries.noaa.gov/section7>. After receiving a complete, accurate comprehensive request for consultation, in accordance to the guidance and instructions on our website, we would then be able to conduct a consultation under section 7 of the ESA. Should project plans change or new information become available that changes the basis for this determination, further coordination should be pursued. If you have any questions regarding these comments, please contact Edith Carson (978-282-8490; Edith.Carson@noaa.gov).

**Magnuson-Stevens Fishery Conservation and Management Act**

The proposed project area may contain essential fish habitat (EFH) for a federally managed species. For a listing of EFH and further information, please go to our website at: <http://www.greateratlantic.fisheries.noaa.gov/habitat>. If you have any questions regarding EFH, please contact Ursula Howson (732-872-3116; Ursula.Howson@noaa.gov).

Sincerely,



Mark Murray-Brown  
Section 7 Coordinator  
for Protected Resources Division

**From:** [Mars, Steve](#)  
**To:** [Moser, Daniel \(FTA\)](#)  
**Cc:** [Popowski, Ron](#); [Hoar, Alex](#); [Eric Schrading](#); [Burns, Donald \(FTA\)](#)  
**Subject:** Re: Request for USFWS Review of New Jersey Transit Raritan River Bridge Replacement Project Environmental Assessment with 4(f) Document  
**Date:** Monday, April 24, 2017 10:43:43 AM

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Mr. Moser:

The U.S. Fish and Wildlife Service (Service) concurs in that the Project will not adversely affect a listed species under Service jurisdiction. The Service recommends that no tree clearing occur from March 15 to September 30 to protect any nesting migratory birds in the Project area that are protected under the Migratory Bird Treaty Act. Any work (maintenance or demolition) proposed on the existing bridge during the March 15 to September 30 period should also be surveyed to ensure Project activities are sufficiently protective of any potential nesting species that may be utilizing the bridge. The Service also recommends that no in-water work occur from 3/1 to 6/30 to protect migrating/spawning shad and herring species. All unavoidable impacts to the aquatic environment should be mitigated for in accordance with the Final Rule: Mitigation for Losses of Aquatic Resources, Department of Defense and the Environmental Protection Agency, April 10, 2008 (Federal Register Vol. 73, No 70: pp. 19594-19705).

if you have any additional question please feel free to contact me at 609-382-5267.

Steve Mars  
Sr. Biologist  
USFWS/NJFO

On Tue, Apr 18, 2017 at 5:12 PM, Moser, Daniel (FTA) <[daniel.moser@dot.gov](mailto:daniel.moser@dot.gov)> wrote:

Good Afternoon Eric and Steve

The preliminary Environmental Assessment (EA) with 4(f) Document for the New Jersey Transit Raritan River Bridge Replacement Project (the "EA/4(f)") is now available for your review and comment. The Federal Transit Administration (FTA) is the lead Federal agency for the project and New Jersey Transit is the sponsor.

You are receiving this request because your agency has agreed to be a cooperating or participating agency with the opportunity to provide a technical review of the EA/4(f) prior to public review.

To access the and download the Raritan Bridge Replacement Project EA/4(f) files:

1. Go to: <https://nyctransfer.akrf.com>
2. Login with credentials:  
Username: **RaritanRiverBridge**  
Password: **Files4FederalAgencyRvw**

[Please Note: Username and Password are Case Sensitive]

3. A window should appear where you can:
  1. Select extranet files to transfer to your computer; or
  2. Select files on your computer to transfer to the extranet.

(Files stored on AKRF's WebFolders\* system are available for thirty days only).

Please send any comments to FTA by 5:00 p.m., Friday May 12, 2017. If you have any comments by this date, FTA will consider them for inclusion in the EA/ 4(f) before it is made available for public review.

Please send comments via email and/or scanned attachment to Daniel Moser [daniel.moser@dot.gov](mailto:daniel.moser@dot.gov) and Donald Burns [donald.burns@dot.gov](mailto:donald.burns@dot.gov).

Please contact me at (212) 668-2326 or by email if you have any questions regarding this email.

Dan Moser

Community Planner

Federal Transit Administration - Region 2

1 Bowling Green, Room 429

New York, NY 10004

Phone: (212) 668-2326 / Fax (212) 668-2136

*\*WebFolders works best with the latest version of your web browser. If you are using an*

*older web browser or a mobile phone, you may have trouble using the "full version" of the site: After a successful login, try the "View Lite Version" link at the bottom of the page. If you are having trouble, contact your IT department. For password issues, contact AKRF's IT Help Desk [\(646\) 388-9729](tel:6463889729).*

Phone: (212) 668-2326 / Fax (212) 668-2136

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**From:** Knutson, Lingard [<mailto:Knutson.Lingard@epa.gov>]  
**Sent:** Tuesday, May 09, 2017 9:43 AM  
**To:** Moser, Daniel (FTA) <[daniel.moser@dot.gov](mailto:daniel.moser@dot.gov)>; Musumeci, Grace <[Musumeci.Grace@epa.gov](mailto:Musumeci.Grace@epa.gov)>  
**Cc:** Burns, Donald (FTA) <[Donald.Burns@dot.gov](mailto:Donald.Burns@dot.gov)>; [RPalladino@njtransit.com](mailto:RPalladino@njtransit.com); [JColangelo-bryan@njtransit.com](mailto:JColangelo-bryan@njtransit.com); [LDigiovanni@njtransit.com](mailto:LDigiovanni@njtransit.com)  
**Subject:** RE: Request for USEPA Review of New Jersey Transit Raritan River Bridge Replacement Project Environmental Assessment with 4(f) Document

Dan: No major issues...just make sure you are coordinating closely with NOAA on EFH and ESA. My only comments:

While wetland areas are identified in Chapter 3, potential impacts to wetlands should be quantified, and possible mitigation identified.

The project is within the New Jersey Coastal Plain Aquifer System SSA, and must be reviewed by EPA under Section 1424(e) of the Safe Drinking Water Act (SDWA). This can be done with a request within the EA, and we'll send the answer with our comments.

Lingard

Lingard Knutson  
Environmental Scientist  
US EPA, Region 2  
290 Broadway, 25<sup>th</sup> floor  
New York, NY 10007  
[212 – 637-3747](tel:212-637-3747)

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**From:** Moser, Daniel (FTA) [<mailto:daniel.moser@dot.gov>]  
**Sent:** Tuesday, April 18, 2017 5:22 PM  
**To:** Musumeci, Grace <[Musumeci.Grace@epa.gov](mailto:Musumeci.Grace@epa.gov)>; Knutson, Lingard <[Knutson.Lingard@epa.gov](mailto:Knutson.Lingard@epa.gov)>  
**Cc:** Burns, Donald (FTA) <[Donald.Burns@dot.gov](mailto:Donald.Burns@dot.gov)>; [RPalladino@njtransit.com](mailto:RPalladino@njtransit.com); [JColangelo-bryan@njtransit.com](mailto:JColangelo-bryan@njtransit.com); [LDigiovanni@njtransit.com](mailto:LDigiovanni@njtransit.com)

-----Original Message-----

From: Handell, Naomi J CIV USARMY CENAN (US) [<mailto:Naomi.J.Handell@usace.army.mil>]  
Sent: Tuesday, May 16, 2017 10:45 AM  
To: Burns, Donald (FTA) <[Donald.Burns@dot.gov](mailto:Donald.Burns@dot.gov)>; Moser, Daniel (FTA) <[daniel.moser@dot.gov](mailto:daniel.moser@dot.gov)>  
Cc: Karen Greene - NOAA Federal <[karen.greene@noaa.gov](mailto:karen.greene@noaa.gov)>; Ursula Howson - NOAA Affiliate <[ursula.howson@noaa.gov](mailto:ursula.howson@noaa.gov)>; [knutson.lingard@epa.gov](mailto:knutson.lingard@epa.gov)  
Subject: RE: NAN-2016-00900-EHA NJDOT Raritan River Bridge

Mr. Burns:

As per my discussion today with Mr. Moser, I am providing additional details regarding comment 7 below and the 404(b)(1) Guidelines:

Please be advised that the proposed work in wetlands and waters of the United States must meet the 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material. These Guidelines require you to examine practicable alternatives to the proposed discharge and in fact do not allow a discharge if there is a practicable alternative which would have less adverse impact on the aquatic ecosystem. The 404(b)(1) Guidelines specify that vegetated wetlands are defined as special aquatic sites (40 CFR 230.41 and 230.42). As per 40 CFR 230.3 (q-1) "Special aquatic sites means those sites identified in subpart E. They are geographic areas, large or small, possessing special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values. These areas are generally recognized as significantly influencing or positively contributing to the general overall environmental health or vitality of the entire ecosystem of a region."

Note that 40 CFR 230.10(a)(3) states that "...In addition, where a discharge is proposed for a special aquatic site, all practicable alternatives to the proposed discharge which do not involve a discharge into a special aquatic site are presumed to have less adverse impact on the aquatic ecosystem..."

You must demonstrate that placing a discharge of fill into a wetland and waters of the United States is required to achieve the project purpose. Additionally, you must demonstrate steps taken to avoid minimize impacts to the wetlands and waters at the site.

As stated above, wetlands are vital areas that constitute a productive and valuable public resource, the unnecessary alteration or destruction of which is to be discouraged. The following must be included in any discussion: explain the need to locate the proposed activity in the wetland and describe alternate locations and methods of construction considered and consider alternatives that can be utilized to minimize or eliminate the need for filling within the wetland.

Naomi Handell  
Project Manager  
U.S. Army Corps of Engineers  
New York District  
Regulatory Branch-Eastern Section  
26 Federal Plaza, Room 1937  
New York, New York 10278  
P: [917-790-8523](tel:917-790-8523)  
F: [212-264-4260](tel:212-264-4260)

PLEASE USE THE ABOVE 18-CHARACTER FILE NUMBER ON ALL CORRESPONDENCE WITH THIS OFFICE.

-----Original Message-----

From: Handell, Naomi J CIV USARMY CENAN (US)  
Sent: Tuesday, May 16, 2017 10:27 AM  
To: Burns, Donald (FTA) <[Donald.Burns@dot.gov](mailto:Donald.Burns@dot.gov)>; 'Moser, Daniel (FTA)' <[daniel.moser@dot.gov](mailto:daniel.moser@dot.gov)>  
Cc: 'Karen Greene - NOAA Federal' <[karen.greene@noaa.gov](mailto:karen.greene@noaa.gov)>; Ursula Howson - NOAA Affiliate <[ursula.howson@noaa.gov](mailto:ursula.howson@noaa.gov)>; 'knutson.lingard@epa.gov' <[knutson.lingard@epa.gov](mailto:knutson.lingard@epa.gov)>  
Subject: NAN-2016-00900-EHA NJDOT Raritan River Bridge

Mr. Burns,

In response to your letter of April 20, 2017, regarding a request for a review of the preliminary Draft Environmental Assessment (DEA) with 4(f) document for the New Jersey Raritan River Bridge Replacement Project, we offer the following comments:

1. Page 3-40 these wetlands are probably tidal and or within 1000 feet therefore Corps permit required.
2. Section 3.11 wetlands, EFH, ESA, etc seems like there is a focus on impacts after project is built. Document should focus more on construction impacts-noise, sedimentation, turbidity, etc.
3. Section 3.13.3 discusses HDD of 2 cables. Will this be included with the proposed work or as a separate application? Requires Corps review and permitted.
4. Section 3.15 Note, Corps authority is 404. No section 10 because USCG has jurisdiction.
5. Section 4.2.9.5 states low speed vibratory drilling does not cause physiological impacts to fish. Is this correct?
6. Page 4-15 Section 4.2.9.7 first document states no in water work from March to June then says work during that time would be within a cofferdam??
7. General comment: A discussion regarding how the proposed alternative was developed to avoid and minimize wetland fill impacts should be added. This discussion should be done in accordance with the Part 230 Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material. Any fill impacts that cannot be avoided or minimized would require compensatory mitigation in accordance with 33 CFR 332.

If there are any questions regarding these comments, please contact me at [\(917\) 790-8523](tel:9177908523).

Thank you.

Naomi Handell  
Project Manager  
U.S. Army Corps of Engineers  
New York District  
Regulatory Branch-Eastern Section  
26 Federal Plaza, Room 1937  
New York, New York 10278  
P: [917-790-8523](tel:9177908523)  
F: [212-264-4260](tel:2122644260)

PLEASE USE THE ABOVE 18-CHARACTER FILE NUMBER ON ALL CORRESPONDENCE WITH THIS OFFICE.



16591/  
Raritan River/NJ

May 17, 2017

Mr. Dan Moser  
Regional Administrator  
Federal Transit Administration  
Region II  
One Bowling Green, Rm 428  
New York, NY 10004-1415

Subj: REVIEW OF THE DRAFT ENVIRONMENTAL ASSESSMENT (DEA) FOR THE RARITAN RIVER RAILROAD BRIDGE REPLACEMENT PROJECT IN MIDDLESEX COUNTY, NEW JERSEY

Dear Mr. Moser,

This responds to request for comments regarding the Raritan River Railroad (RRRR) Bridge proposed project– Draft Environmental Impact Statement dated April 2017. The U. S. Coast Guard has reviewed the document and offers the following comments:

1. Table of Contents: include a List of Acronyms
2. Executive Summary:
  - (i) Include a section with the current navigational related dimensions of the existing bridge structure to include the minimum vertical clearance in the open position at 130 feet.
  - (ii) Table S-2. Include the following in the Mitigation/Commitment Section for the Transportation Technical Discipline and in corresponding EA sections.

Summary of Temporary Potential Long-Term Adverse Effects and Mitigation

Technical Discipline	Potential Effects	Mitigation/ Commitment
Transportation	PA reduction in vertical clearance from 130 to 110 feet.	Acquire the information necessary to prepare a Navigational Impact Report. <sup>1</sup>

Summary of Temporary Construction-Period Effects and Mitigation

Technical Discipline	Potential for Adverse Effects	Mitigation/Commitment
Transportation	Maritime traffic will be affected during the vertical lift span construction.	Coordination with USCG Waterways Management Branch, Sector NY

<sup>1</sup> Memorandum of Understanding, USCG, FHA, FTA, FRA, Section V (c), dtd January 14, 2014.

May 16, 2017

(iii) further, several corresponding mitigation/commitment for the technical disciplines categories in the summary charts are designated non-applicable (N/A). Until the required agencies can determine the potential impacts, recommend all corresponding mitigation/commitments be changed from N/A to awaiting final permit conditions, authorization and/or certification or concurrence of non-adverse effect/ mitigation from required agencies as indicated in section 3.15.

3. Chapter 3:

(i) Environmental Considerations. Provide an additional Appendix to document consultation and coordination with local and government agencies to include letters and meeting minutes regarding pre-coordination, potential impacts posed by construction as well as mitigation strategies if applicable in regards to the environmental considerations, i.e. compliance with air quality control, impacts to traffic and noise control.

(ii) Section 3.7.1.3. Maritime Traffic: Include the regulatory site for Raritan River New Jersey Transit Rail Operations. 33 CFR Section 117.747 "The draw of New Jersey Transit Rail Operations Railroad Bridge at mile 0.5 shall open on signal; except that, from 6 a.m. to 9:30 a.m. and 4:30 p.m. to 7:30 p.m., Monday through Friday, except holidays, the bridge need not open."

Note: 33 CFR Section 117.5 drawbridges must open promptly and fully for the passage of vessels when a request or signal to open is given in accordance with this subpart". Confirm that references in the EA to the amount of time it takes to open the lift is commensurate with opening the bridge fully.

New Jersey Department of Transportation (NJDOT) conceptual preferred alternative (PA) for the proposed project is a new replacement vertical lift bridge west of the existing RRRR bridge. As described in DEA including Executive Summary and Section 2.4.1, the PA provides for a vertical clearance (VC) of 110 feet above MIIW with a width of approximately 300 feet. The Victory Bridge is a high-level fixed bridge and provides for a vertical clearance (VC) of 110 feet above MIIW. It is located at mile point 1.6 and controls VC for all points upstream of the proposed structure. Further outreach and public comments is required to determine how the proposed reduction of the RRRR Bridge in the VC from 130 feet to 110 feet at MHW may affect navigation between the RRRR Bridge and the Victory Bridge.

(iii.) Section 3.11. Natural Resources, should address the specific mitigation recommendations made by the NMFS and USFWS. This should include the in-water work dates and timing restrictions for tree and shrub clearing. Further, should NMFS determine that the potential impacts of the project will result in an incidental take of any of the listed species; the Coast Guard will also need to review the Biological Opinion.

(iv.) 3.15 Permits, Approvals and Consultation. Insert the General Bridge Act of 1946, 33 U.S.C. 525 after Section 9 of the Rivers and Harbor Act of 1899 in the Coast Guard section.

May 16, 2017

5. The final permit conditions and authorizations have not been received from USACE and NJDEP's freshwater wetlands permit. The NJDEP Water Quality Certification will also provide the status of state concurrence with New Jersey's Coastal Zone Management Program (CZMP).

6. As mentioned, refer to coordination with the Coast Guard to ensure that the needs of marine navigation are considered during construction, it is imperative that we continue to be included in construction planning and scheduling.

7. As a cooperating agency for the National Environmental Policy Act (NEPA) efforts, the Coast Guard reviews the lead federal agency's environmental consultations with agencies such as the U.S. Army Corps of Engineers (USACE), U.S. Fish and Wildlife Service (FWS), National Marine Fisheries Service (NMFS), the New Jersey Department of Environmental Protection (NJDEP) and other appropriate state and local authorities as part of the bridge application process.

8. Thank you for the opportunity to comment on the Draft Environmental Impact Statement (DEIS) for the Raritan River Railroad Bridge Project. Please refer to the Bridge Application Guide: which can be found at <https://www.uscg.mil/hq/cg5/cg551/BPAG Page.asp>, for information about the bridge permit application requirements.

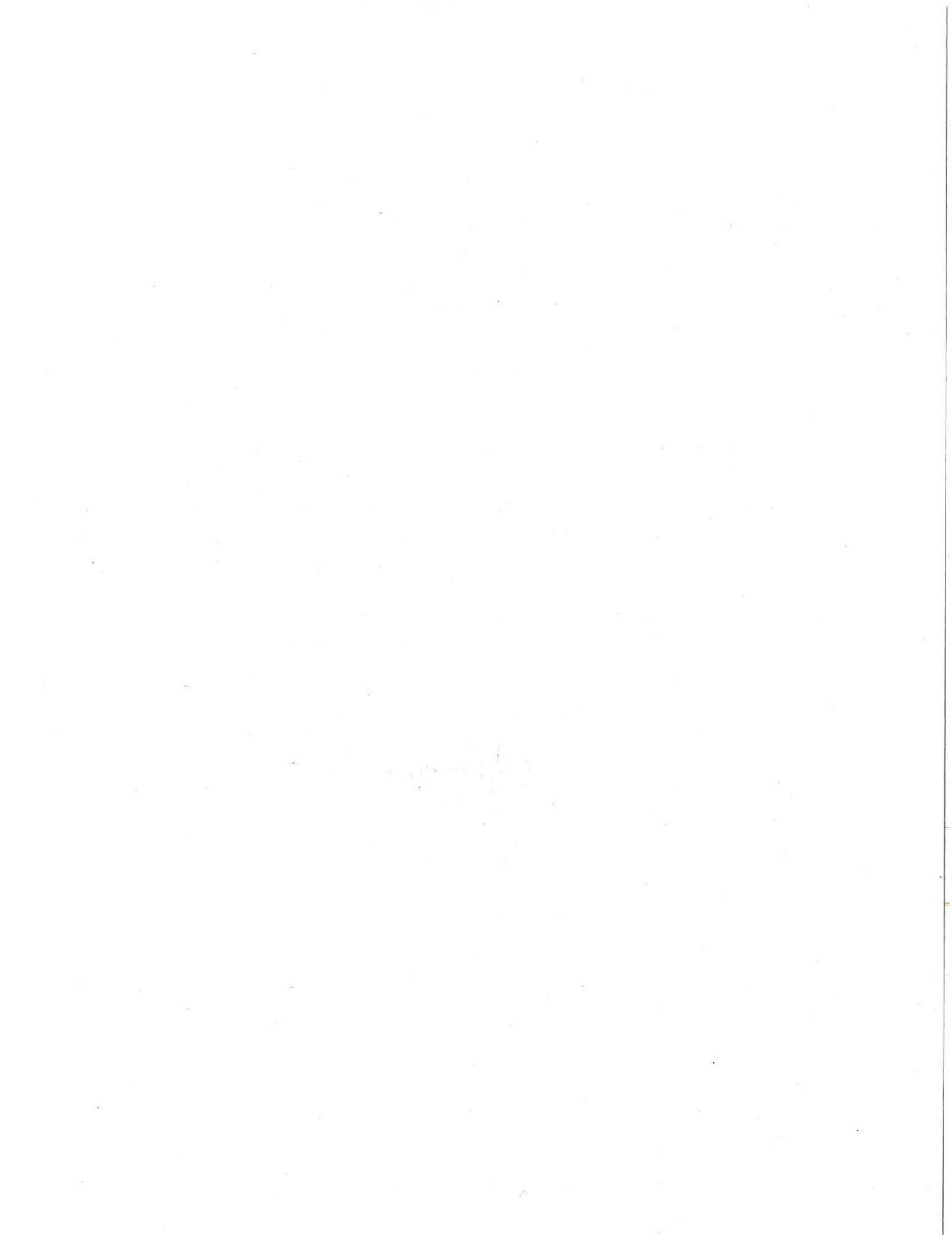
Please contact me at the above telephone number or at [christopher.j.bisignano@uscg.mil](mailto:christopher.j.bisignano@uscg.mil) or Ms. Donna Leoce [donna.d.leoce@uscg.mil](mailto:donna.d.leoce@uscg.mil); 212 514-4332 if you have any questions.

Sincerely,



C. J. BISIGNANO  
Supervisory Bridge Management Specialist  
U.S. Coast Guard  
By direction

Copy: 1) CG-BRG-2  
2) D1 (dp)  
3) CG SECNY (wmm)



## **Response to Agency Comments on Draft Environmental Assessment**

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### **FEDERAL RAILROAD ADMINISTRATION (FRA)**

**Comment 1:** Page 14: If flood protection is of main concern may want to explain why increased span lengths haven't been investigated further to increase the hydraulic width of the openings? For example, why was a through girder system (2 way floor system) not investigated further as it would increase spans lengths.

**Response:** A through girder system was investigated and the analysis is presented in Appendix A "Alternatives Analysis". The use of steel multi-girders was selected as the preferred option as a result of cost, maintenance, and constructability considerations. In addition, steel multi-girders will better replicate the appearance of the existing bridge (a consideration due to the bridge's historic status). Please see additional details related to the alternatives analysis below in the response to FRA Comment 18.

The river is half a mile wide; therefore, the piers do not present a significant obstruction to the river flow. The new piers are much smaller in size than the existing stone piers, so the hydraulic width will be greater with the new structure. Flood resilience will be achieved by raising the alignment by 10 feet above the water surface. The bearings are being designed to provide structural resistance to the forces imposed by a storm, and the multi-girder superstructure will be resilient to future severe weather events.

**Comment 2:** Page 14: Bridge width exceeding AREMA 1/20? How does a wider two track bridge fit into the goals and objectives. What are the current track centers if so? Is the new bridge width a safety improvement for MOW and passing trains? If so how does this fit into the goals and objectives?

**Response:** One of the project's goals is to "provide rail improvements that minimize service disruption and optimize operations." While the proposed bridge width would exceed AREMA standards, it meets NJ TRANSIT's requirements for shared freight tracks. The current track centers on the existing bridge are 12'10" ± apart. The wider track centers on the proposed bridge will be a significant safety improvement over the existing condition.

**Comment 3:** Page 17: Are there existing interlockings within these locations.

**Response:** There are two existing interlockings within the project limits, which will be removed and replaced. New interlockings will be installed, one near the south shore at a new connection to Essay Running Track and the other on the north shore in Perth Amboy. The existing Essay Interlocking is within a super elevated curve (which is not standard practice).

Both new interlockings will be on tangent track. The new interlocking on the north shore will replace a No. 10 universal crossover with a No. 20 universal crossover.

**Comment 4:** Page 17: Is the tower considered historic?

**Response:** Yes, the Essay Tower (an interlocking tower in the South Amboy portion of the project site) is a contributing resource to the New York and Long Branch Railroad Historic District. Constructed during the period of significance of the historic district, the building retains sufficient integrity to convey its associations with the railroad and contributes to the significance of the historic district.

**Comment 5:** Page 17: If increased capacity is not part of the goals and objectives then why the need for increased speeds? Are there current speed restrictions on the bridge? What is creating the speed restrictions?

**Response:** There are speed restrictions on the bridge (20 mph for freight and 30 mph for passenger trains), which are a result of the damage incurred during Superstorm Sandy. The new bridge will be designed to accommodate speeds of up to 60 mph, however, the effective operating speed will be lower due to the distance between the Perth Amboy and South Amboy stations (which dictates a 40 mph speed for passenger trains) and the curvature of Essay Running Track (which dictates 10 to 15 mph for freight trains). Since building to a lesser track speed of 40 mph would have minimal (if any) cost savings, and future railroad operations during perturbed conditions may require trains to operate at higher speed in order to “minimize service disruption and optimize operations”, as per one of the project’s goals, a speed of 60 mph was adopted as a design criterion.

**Comment 6:** Page 17: Is there a current demand for increased weight in freight cars? Is the freight railroad currently having a demand for 286K cars on the line? The goals and objectives are for flood protection. No mention of capacity demands. Increased capacity on freight and speed impacts design and costs.

**Response:** As described in Section 3.7.1.2 “Freight Railroad Operations”, currently there are no plans to operate heavier freight trains across the bridge. However, the new bridge will be in place for the next 50 to 100 years, and the operation of heavier freight trains is foreseeable – as the trend is to improve freight transportation and material handling efficiencies via increasing the capacity of freight trains (see NJDOT’s “New Jersey Statewide Freight Rail Strategic Plan, Moving New Jersey Forward”.) Bridges that are not designed to current standards have an increased likelihood of becoming functionally obsolete prior to the end of their useful life.

**Comment 7:** Page 19: Will there be any disturbance to rail traffic or closure of the tracks? If so, what's the impact to freight traffic? Sounds like no disruption to freight traffic, but can you say that explicitly?

**Response:** Construction activities and sequencing will be designed to minimize conflicts with rail traffic. Temporary disruptions will occur as connections are made between the new bridge approach tracks and mainline tracks. In general, this will be staged so that one track will remain in service at all times, to avoid disruption to rail service.

Essay Running Track will be taken out of service for a period of about four to eight weeks to replace the interlocking and construct the new track. During this time, Conrail freight trains will be rerouted to alternate routes to Amboy Secondary track in South Amboy and through Monmouth Junction on Amtrak's Northeast Corridor.

**Comment 8:** Page 38: How does the new drop power the bridge? Or is it just for the new interlocking?

**Response:** The JCP&L power drop on the south side will be upgraded and feed a 4160V – 480/277V transformer for bridge power. The 4160V supply may also be tapped for interlocking equipment on the south side. The north side will have a new PSE&G power drop for interlocking equipment.

**Comment 9:** Page 39: Why design for 60MPH when only 40PMH is achievable?

**Response:** Please see above response to Comment 5.

**Comment 10:** Page 39: The fact that design for increased freight car weight is based on the state rail plan and not one of the goals and objectives of the bridge may need to be clarified better, as the increase in freight car weight will increase the costs of the bridge.

**Response:** Please see above response to Comment 6.

**Comment 11:** Page 43: How does the shift in the new alignment impact the "Wye" layout? Will the new alignment impact any grade separated crossings?

**Response:** The proposed track design shifts the location of the Essay Running Track turnout on Track 1 at the north point of the wye. The Essay Running Track will be slightly shifted for approximately 1,300 feet, and the track shift will end at the existing Conrail Bridge over Main Street. There are no proposed changes to this or any other grade-separated crossing.

**Comment 12:** Page 78: Why design for heavier if system currently cannot handle the heavier freight cars? Just thinking initial costs vs. future return on investment.

**Response:** Please see above response to Comment 6.

**Comment 13:** Page 81: The discrepancy between the design speed and operating speeds does beg the question about what would need to occur to achieve those design speeds, and if such speeds are truly realistic in near future.

**Response:** Please see above response to Comment 5.

## Raritan River Bridge Replacement EA

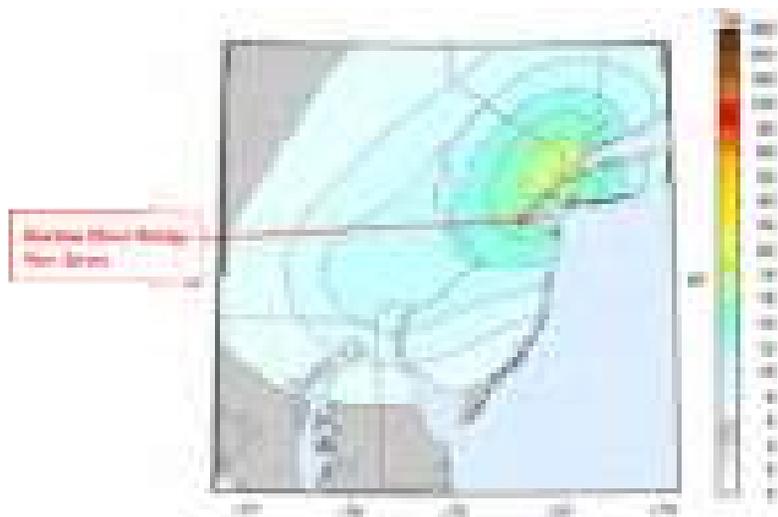
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**Comment 14:** Page 96: When doing the vibration assessment, did you account for the potential use of heavier freight cars? It's not clear as written that you did (maybe I missed it, but it does seem as though you're trying to do a 'worst case scenario')

**Response:** As per FTA's guidance document, a General Vibration Assessment was used to determine the need for a detailed vibration assessment. This screening level analysis uses worst case assumptions for vibration level amplification and propagation through soil but does not differentiate train weight. The results of the screening level assessment indicate that the project will not cause significant ground borne noise or vibration impacts either with or without the operation of heavier freight trains across the bridge.

**Comment 15:** Page 133: Are there any potential seismic impacts to the project? Location in proximity to fault line....Limits on number of shafts installed at same time?

**Response:** At the location of the Raritan River Bridge, the USGS (2008) hazard map shown on the figure below predicts 0.16-0.2g peak ground acceleration on firm ground or soft rock, for a probability level of 2% chance of exceeding in 50 years. This is a moderate level of soft rock ground shaking, which will be considered in the design of the bridge foundations and superstructure. There are no known active faults in the eastern United States. There is no need for restrictions on shaft installation.



**Comment 16:** Page 133: [Four to eight week disruption to Conrail service] seems like a significant disruption. How is it being mitigated, and what consultation was conducted with Conrail?

**Response:** As noted in response to FRA Comment 7 above, Conrail has alternate access to its Amboy Secondary track in South Amboy and Monmouth Junction on Amtrak's Northeast Corridor. Conrail is aware of the proposed project and has been invited to participate in the

NEPA process. NJ TRANSIT routinely coordinates with Conrail on track outages, and will continue to meet with Conrail representatives to discuss the project and minimize impacts to rail operations to the greatest extent practicable.

**Comment 17:** Page 136: See earlier comment. Consultation with Conrail should be conducted and documented.

**Response:** Please see above response to Comment 16.

**Comment 18:** Page 198: Has a cost analysis been performed between the Through Girder and Multi Girder alternatives for steel construction, pier construction and superstructure maintenance. It appears as though only redundancy has been investigated.

**Response:** As mentioned in Appendix A, “Alternatives Analysis”, a cost analysis was performed to determine the preferred option of girders. The feasible approach span alternatives evaluated included 95-foot multi-girders, 140-foot through girders and 190-foot trusses. These alternatives were evaluated and compared with regards to the construction cost, maintenance, constructability and flood resiliency. Constructability and maintenance were the key factors in determining the most feasible solution. The conceptual construction cost for the approach spans is \$160.4M for the multi-girders, 174.1M for the through girders and \$205.5M for the trusses. In regards to constructability, multi-girders are the easiest to erect. As they are comprised of only a few sections of steel, the multi-girders can be easily delivered to the site on barges and/or trucks and erected using conventional equipment. This is unlike the through girder spans, which would require longer erection time for heavier sections and more components (girders, floor beams, stringers).

## UNITED STATES COAST GUARD

**Comment 1:** Table of Contents: Include a List of Acronyms

**Response:** A List of Acronyms has been added to the document. It follows the Table of Contents.

**Comment 2:** Executive Summary: Include a section with the current navigational related dimensions of the existing bridge structure to include the minimum vertical clearance in the open position at 130 feet.

**Response:** The minimum vertical clearance in the open position was added to Section S.2.1 in the Executive Summary and Section 2.3 of the “Project Alternatives” chapter. The vertical clearance is controlled by the aerial cables over the channel, which have a clearance of 140 feet above MHW when the bridge is opened.

**Comment 3:** Table S-2. Include the following in the Mitigation/Commitment Section for the Transportation Technical Discipline and in corresponding EA sections.

Summary of Temporary Potential Long-Term Adverse Effects and Mitigation

**Raritan River Bridge Replacement EA**

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Technical Discipline	Potential Effects	Mitigation/ Commitment
Transportation	PA reduction in vertical clearance from 130 to 110 feet.	Acquire the information necessary to prepare a Navigational Impact Report.

Summary of Temporary Construction-Period Effects and Mitigation

Technical Discipline	Potential for Adverse Effects	Mitigation/Commitment
Transportation	Maritime traffic will be affected during the vertical lift span construction.	Coordination with USCG Waterways Management Branch, Sector NY

**Response:** The information was added to Tables S-2 and S-3 in the Executive Summary as suggested.

**Comment 4:** Several corresponding mitigation/commitment for the technical disciplines categories in the summary charts are designated non-applicable (N/A). Until the required agencies can determine the potential impacts, recommend all corresponding mitigation/commitments be changed from N/A to awaiting final permit conditions, authorization and/or certification or concurrence of non-adverse effect/ mitigation from required agencies as indicated in section 3.15.

**Response:** The “Mitigation/Commitment” column in Tables S-2 and S-3 in the Executive Summary were revised as suggested. Cross references to the “Construction Methods and Effects” chapter have been included to address the mitigation recommended for USFWS and NMFS resources.

**Comment 5:** Chapter 3 (i) Environmental Considerations. Provide an additional Appendix to document consultation and coordination with local and government agencies to include letters and meeting minutes regarding pre-coordination, potential impacts posed by construction as well as mitigation strategies if applicable in regards to the environmental considerations, i.e. compliance with air quality control, impacts to traffic and noise control.

**Response:** Correspondence with regulatory agencies was previously included in Appendix B, “Section 106 Correspondence” and Appendix C, “Natural Resources Correspondence”. Additional meeting minutes from project team meetings with USCG, USACE, and NJDEP have been added accordingly in Appendix C.

**Comment 6:** Section 3.7.1.3. Maritime Traffic: Include the regulatory site for Raritan River New Jersey Transit Rail Operations. 33 CFR Section 117.747 "The draw of New Jersey Transit Rail Operations Railroad Bridge at mile 0.5 shall open on signal; except that, from 6 a.m. to 9:30 a.m. and 4:30 p.m. to 7:30 p.m., Monday through Friday, except holidays, the bridge need not open."

**Response:** The reference and text from 33 CFR Section 117.747 was added to Section 3.7.1.3.

**Comment 7:** 33 CFR Section 117.5 drawbridges must open promptly and fully for the passage of vessels when a request or signal to open is given in accordance with this subpart". Confirm that references in the EA to the amount of time it takes to open the lift is commensurate with opening the bridge fully.

**Response:** As mentioned in Section 3.7.3, the vertical lift bridge can be opened fully within three minutes.

**Comment 8:** The NJ TRANSIT conceptual preferred alternative (PA) for the proposed project is a new replacement vertical lift bridge west of the existing bridge. As described in DEA including Executive Summary and Section 2.4.1, the PA provides for a vertical clearance (VC) of 110 feet above MHW with a width of approximately 300 feet. The Victory Bridge is a high-level fixed bridge and provides for a VC of 110 feet above MHW. It is located at mile point 1.6 and controls VC for all points upstream of the proposed structure. Further outreach and public comments is required to determine how the proposed reduction of the proposed bridge in the VC from 130 feet to 110 feet at MHW may affect navigation between the Raritan Bridge and the Victory Bridge.

**Response:** A detailed summary of the maritime stakeholder outreach has been included as a new Appendix H, "Maritime User Outreach Summary". A Navigation Impact Report, dated November 15, 2016, was also prepared by the design team (Hardesty & Hanover / Gannett Fleming), which included a formal written survey of waterway users and consideration of the 11 responses that were received; meetings with the USCG, U.S. Army Corps of Engineers (USACE), and the Harbor Safety Operations and Navigation Committee of the Port of New York and New Jersey (Harbor Ops); review of existing drawings and current bridge operation practices; review of bathymetric surveys; review of Master Plans, Redevelopment Plans, and study area zoning; review of upstream and downstream vertical and horizontal clearances; and review of documented Raritan River Tide and Current information. Results of the navigation impact report did not identify a need to accommodate vessels larger than what the existing controlling vertical clearance between the Raritan River Bridge and Victory Bridge. No additional maritime outreach is anticipated for the purposes of the EA.

**Comment 9:** Section 3.11. Natural Resources, should address the specific mitigation recommendations made by the NMFS and USFWS. This should include the in-water work dates and timing restrictions for tree and shrub clearing. Further, should NMFS determine that the potential impacts of the project will result in an incidental take of any of the listed species; the Coast Guard will also need to review the Biological Opinion.

**Response:** Recommendations from NMFS and USFWS have been incorporated into the EA, including timing restrictions for in-water work and tree clearing. The USCG will be provided the opportunity to review any Biological Assessment prepared for the project and the subsequent Biological Opinion issued by a Federal agency.

**Comment 10:** 3.15 Permits, Approvals and Consultation. Insert the General Bridge Act of 1946, 33 U.S.C. 525 after Section 9 of the Rivers and Harbor Act of 1899 in the Coast Guard section.

## **Raritan River Bridge Replacement EA**

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**Response:** The following was added to the USCG bullet in Section 3.15: “U.S. Coast Guard: General Bridge Act of 1946, 33 U.S.C. 525.”

**Comment 11:** The final permit conditions and authorizations have not been received from USACE and NJDEP's freshwater wetlands permit. The NJDEP Water Quality Certification will also provide the status of state concurrence with New Jersey's Coastal Zone Management Program (CZMP).

**Response:** Comment noted.

**Comment 12:** As mentioned, refer to coordination with the Coast Guard to ensure that the needs of marine navigation are considered during construction, it is imperative that we continue to be included in construction planning and scheduling.

**Response:** Comment noted.

**Comment 13:** As a cooperating agency for the National Environmental Policy Act (NEPA) efforts, the Coast Guard reviews the lead federal agency's environmental consultations with agencies such as the U.S. Army Corps of Engineers (USACE), U.S. Fish and Wildlife Service (FWS), National Marine Fisheries Service (NMFS), the New Jersey Department of Environmental Protection (NJDEP) and other appropriate state and local authorities as part of the bridge application process.

**Response:** Comment noted.

**Comment 14:** Thank you for the opportunity to comment on the Draft Environmental Impact Statement (DEIS) for the Raritan River Railroad Bridge Project. Please refer to the Bridge Application Guide: which can be found at <https://www.uscg.mil/hq/cg5/cg551/BPAG Page.asp>, for information about the bridge permit application requirements.

**Response:** Comment noted.

## **UNITED STATES ARMY CORPS OF ENGINEERS**

**Comment 1:** Page 3–40 these wetlands are probably tidal and or within 1000 feet therefore Corps permit required.

**Response:** A USACE permit will be required; most of the affected wetlands are within 1,000’ of mean high water. There are 3 linear wetland features on the Perth Amboy side of the Raritan River that are beyond 1,000’ of mean high water and will only be regulated by NJDEP. A fourth linear wetland is proximate to the 1,000’ limit and may be regulated by the USACE.

**Comment 2:** Section 3.11 wetlands, EFH, ESA, etc seems like there is a focus on impacts after project is built. Document should focus more on construction impacts - noise, sedimentation, turbidity, etc.

**Response:** Potential construction impacts to wetlands, water quality, EFH, and threatened and endangered species are discussed in Section 4.2.9. Cross references to Chapter 4, “Construction Methods and Effects”, have been included in Chapter 3, “Environmental Considerations”, to address the mitigation recommended for these resources.

**Comment 3:** Section 3.13.3 discusses HDD of 2 cables. Will this be included with the proposed work or as a separate application? Requires Corps review and permitted.

**Response:** As the HDD is being treated as a separate permit process. Permit applications for the relocation of the AT&T line were submitted to NJDEP and USACE in March 2017. The HDD project is awaiting authorization from USACE, and a permit has been received from NJDEP (Permit # 1200-17-0002.1; WFD 170001 and CZM 170001).

**Comment 4:** Section 3.15 Note, Corps authority is 404. No section 10 because USCG has jurisdiction.

**Response:** "Section 10 of the Rivers and Harbors Act of 1899" was deleted from the USACE bullet in Section 3.15. However, previous permits for rail bridge projects over tidal waters have included a Section 10 authorization with the 404 permit and the USCG Section 9 permit. Typically, a jurisdictional boundary between the USCG and USACE has been established cooperatively and the three permits issued for respective work.

**Comment 5:** Section 4.2.9.5 states low speed vibratory drilling does not cause physiological impacts to fish. Is this correct?

**Response:** This is correct. Unlike impact pile driving, low speed vibratory drilling is not a percussive activity, and it does not result in underwater noise levels that exceed the 206 dB SPLpeak threshold for physiological injury to fish. It is more similar to pile driving with a vibratory hammer, which is often recommended by NMFS for minimization of underwater noise effects. Drilling typically results in even lower noise levels than use of a vibratory hammer.

**Comment 6:** Page 4-15 Section 4.2.9.7 first document states no in water work from March to June then says work during that time would be within a cofferdam?

**Response:** In-water construction activities conducted between March 1 and June 30 will be within dewatered cofferdams, and would not have the potential to affect aquatic biota. The cofferdams will be installed and removed outside of the restricted time period.

**Comment 7:** A discussion regarding how the proposed alternative was developed to avoid and minimize wetland fill impacts should be added. This discussion should be done in accordance with the Part 230 Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material. Any fill impacts that cannot be avoided or minimized would require compensatory mitigation in accordance with 33 CFR 332.

Please be advised that the proposed work in wetlands and waters of the United States must meet the 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material. These Guidelines require you to examine practicable alternatives to the proposed discharge and in fact do not allow a discharge if there is a practicable alternative which would have less adverse impact on the aquatic ecosystem. The 404(b)(1) Guidelines specify that vegetated wetlands are defined as special aquatic sites (40 CFR 230.41 and 230.42). As per 40 CFR 230.3 (q1)" Special aquatic sites means those sites identified in subpart E. They are geographic areas, large or small,

## **Raritan River Bridge Replacement EA**

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possessing special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values. These areas are generally recognized as significantly influencing or positively contributing to the general overall environmental health or vitality of the entire ecosystem of a region."

Note that 40 CFR 230.10(a)(3) states that "...In addition, where a discharge is proposed for a special aquatic site, all practicable alternatives to the proposed discharge which do not involve a discharge into a special aquatic site are presumed to have less adverse impact on the aquatic ecosystem..."

You must demonstrate that placing a discharge of fill into a wetland and waters of the United States is required to achieve the project purpose. Additionally, you must demonstrate steps taken to avoid minimize impacts to the wetlands and waters at the site.

As stated above, wetlands are vital areas that constitute a productive and valuable public resource, the unnecessary alteration or destruction of which is to be discouraged. The following must be included in any discussion: explain the need to locate the proposed activity in the wetland and describe alternate locations and methods of construction considered and consider alternatives that can be utilized to minimize or eliminate the need for filling within the wetland.

**Response:** Section 3.11.3.1 of the EA discusses the need to mitigate for the approximately 1.97 acres of wetland impacts, most likely through the purchase of mitigation credits. A 404(b)(1) evaluation will be included in the permit application submitted to the USACE for construction of the portion of the project under USACE jurisdiction. Details on how the proposed alternative was developed to avoid and minimize wetland and fill impacts will be addressed through the permitting process.

### **UNITED STATES FISH AND WILDLIFE SERVICE, NEW JERSEY FIELD OFFICE**

**Comment 1:** The U.S. Fish and Wildlife Service (Service) concurs in that the Project will not adversely affect a listed species under Service jurisdiction.

#### Recommendations:

- No tree clearing occur from March 15 to September 30 to protect any nesting migratory birds in the Project area (Migratory Bird Treaty Act).
- Any work (maintenance or demolition) proposed on the existing bridge during the March 15 to September 30 period should also be surveyed to ensure Project activities are sufficiently protective of any potential nesting species that may be utilizing the bridge.
- No in-water work occur from 3/1 to 6/30 to protect migrating/spawning shad and herring species.
- All unavoidable impacts to the aquatic environment should be mitigated for in accordance with the Final Rule: Mitigation for Losses of Aquatic Resources, Department of Defense and the Environmental Protection Agency, April 10, 2008 (Federal Register Vol. 73, No 70: pp. 19594-19705)

**Response:** Comment noted. USFWS recommendations have been incorporated into the EA.

**NOAA NATIONAL MARINE FISHERIES SERVICE**

**Comment 1:** Depending on the amount and duration of work that takes place in the water, four listed species of sea turtles and Atlantic sturgeon may occur within the vicinity of your proposed project. The Federal Transit Administration will be responsible for determining whether the proposed action may affect listed species.

As project details develop, we recommend you consider the following effects of the project on sea turtles and sturgeon:

- For any impacts to habitat or conditions that temporarily render affected water bodies unsuitable for the above-mentioned species, consider the use of timing restrictions for in water work.
- For activities that increase levels of suspended sediment, consider the use of silt management and/or soil erosion best practices (i.e., silt curtains and/or cofferdams).
- For the relocation of underground cables, consider using the Horizontal Directional Drilling (HDD) method which would prevent the mechanical activity coming into contact with sea turtles and sturgeon in the area.
- For pile driving or other activities that may affect underwater noise levels, consider the use of cushion blocks and other noise attenuating tools to avoid reaching noise levels that will cause injury or behavioral disturbance to sea turtles, and sturgeon - see the table for more information regarding noise criteria for injury/behavioral disturbance in sturgeon or sea turtles.

**Response:** Comment Noted. NMFS recommendations have been incorporated into the EA.

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

**Comment 1:** While wetland areas are identified in Chapter 3, potential impacts to wetlands should be quantified, and possible mitigation identified.

**Response:** Utilizing the conservative limits of disturbance designation as a basis for assessing impacts, the approximate wetland impacts have been included in Section 3.11.3.1. Mitigation for a conservative total of 1.97 acres of wetlands impacts may include wetland creation, wetland mitigation bank credit from an approved wetland mitigation bank, or on-site mitigation activities to support ecological/wetland restoration efforts within the Raritan River watershed.

**Comment 2:** The project is within the New Jersey Coastal Plain Aquifer System SSA, and must be reviewed by EPA under Section 1424(e) of the Safe Drinking Water Act (SDWA). This can be done with a request within the EA, and we'll send the answer with our comments.

**Response:** A new Section 3.11.1.9 "Sole Source Aquifers" was added to the EA, providing details on the New Jersey Coastal Plain sole-source aquifer system.

**Appendix G**  
**EVALUATION OF CONSTRUCTION EMISSIONS**

The conformity requirements of the CAA and regulations promulgated thereunder (conformity requirements) limit the ability of federal agencies to assist, fund, permit, and approve projects in non-attainment areas that do not conform to the applicable SIP. When subject to this regulation, the lead agency is responsible for demonstrating conformity for its proposed action. Conformity determinations for federal transportation projects that are approved, funded, or implemented by the Federal Transit Administration (FTA), such as the Raritan River Bridge Replacement Project (the project), must be made according to the requirements of 40 CFR 93, Subpart A (federal transportation conformity regulations). The project is subject to Transpiration Conformity, and is included in the Transportation Improvement Program (TIP) for the region.

In some cases, if construction non-road emissions are considered to not be included in the SIP (transportation conformity covers on-road emissions, and the SIP includes forecast growth for non-road construction engines), general conformity may also apply. In such cases, a general conformity applicability analysis may be required. Furthermore, since federal permits will be issued for the project by Army Corps of Engineers and the U.S. Coast Guard an applicability analysis may also be required for those actions. An applicability analysis is the process of determining whether a Federal action (such as issuing a permit) must be supported by a general conformity determination. As described in 40 CFR 93.153, the applicability analysis may find that a conformity determination is not required if, among other things, the Federal action is presumed to conform (e.g., based on comparisons with other projects) or would result in total direct and indirect emissions of the criteria pollutants or precursors that is less than the *de minimis* rates contained in 40 CFR 93.153(b).

General conformity *de minimis* threshold levels for the non-attainment and maintenance areas relevant to the project are presented in **Table G-1**.



2007) were calculated for each pollutant by dividing the emissions by the expenditure. EI for 2019 (the first construction year) for each pollutant were then calculated by multiplying the corresponding 2007 EI by the ratio of 2019 to 2007 total weighted construction emissions<sup>3</sup> from a generic NONROAD model output for those years to account for the improvement in fleet average emissions over the years, and dividing by the 2019 to 2007 ratio of the annual construction cost index for Roads, Railroads,<sup>4</sup> and Bridges to account for the increasing construction costs. The 2019 EI for each pollutant was then multiplied by the maximum annual project construction cost to estimate annual emissions. The maximum annual construction cost is conservatively estimated at \$223 million.

For example:

Total VOC emissions in the nonattainment area in 2007 were 1,352.4 tons

The ratio of construction related VOC emissions in NONROAD 2019/2007 is 48%

The bridge cost index ratio of 2019 / 2007 is 129%

Therefore—

2007 EI<sub>(VOC)</sub> = 1,352.4 tons / \$33.442 million = 0.040 tons/\$million

2019 EI<sub>(VOC)</sub> = 0.040 tons/\$million x 48% / 129% = 0.015 tons/\$million

⇒ maximum annual project VOC emissions = 0.015 tons/\$million x \$223 million = **3.4 tons**

The nonattainment area emissions, emission adjustment factors, calculated EIs, and resulting maximum annual project emissions are presented in **Table G-2**. As presented in the table, the estimated maximum annual construction emissions for the project would be substantially lower than the applicable *de minimis* emissions levels. Therefore, emissions would clearly be *de minimis* and general conformity analysis and/or determination is not required.

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NJDEP. *State Implementation Plan (SIP) for the 75 ppb 8-Hour Ozone National Ambient Air Quality Standard (NAAQS) Reasonably Available Control Technology (RACT) Determination, 2011 Periodic Emission Inventory, and 8-Hour Carbon Monoxide NAAQS Maintenance and Monitoring Plan*. Apx. II-9. Date Posted: 7/23/2014 Updated: 6/24/2015

Note that VOC, CO, and PM<sub>10</sub> were available only for 2011. 2007 emissions were estimated using the 2011 VOC/NO<sub>x</sub>, CO/NO<sub>x</sub>, and PM<sub>10</sub>/PM<sub>2.5</sub> ratio and multiplying by the 2007 emissions of NO<sub>x</sub> and PM<sub>2.5</sub>, respectively.

<sup>3</sup> Emissions were weighted by activity so as to account only for changes in engine technology rather than growth in the number of engines and activity. For each engine category, total 2019 emissions were divided by the 2019 activity level and multiplied by the 2011 activity level.

<sup>4</sup> USACE. *Civil Works Construction Cost Index System (CWCCIS)*. 2012.

Note that the USACE CWCCIS includes projections for future years, used to estimate future construction costs, similar to the 2019 estimates prepared for the project.

**Table G-2**

**Nonattainment Area Construction Emissions, Emissions Intensities, and Projected  
Maximum Annual Project Construction Emissions**

Pollutant	2007 Construction Emissions in Northern NJ*	2019 / 2007 Construction Emissions Ratio	Emissions Intensity (ton/\$Million)		Maximum Annual Project Construction Emissions 2019 (tons)	<i>De Minimis</i> level (tons/year)
			2007	2019***		
VOC**	1,352.4	48%	0.040	0.015	3.4	50
NO <sub>x</sub>	9596.2	35%	0.287	0.077	17.1	100
CO**	10,506.8	53%	0.314	0.130	29.0	100
PM <sub>2.5</sub>	825.6	36%	0.025	0.007	1.5	100
SO <sub>2</sub>	735.6	85%	0.022	0.015	3.2	100
PM <sub>10**</sub>	853.0	100%	0.026	0.007	1.6	100
<b>Notes:</b>						
* Source: NJDEP.						
** Based on 2011 values. See text for details.						
***Based on emissions ratio and on 129% cost index ratio. See text for details.						



**Appendix H**  
**MARITIME USER OUTREACH COORDINATION**

## **H.1 INTRODUCTION**

A new vertical lift bridge across the Raritan River will improve navigation beneath the bridge. Proper operation of the bridge is essential to the area's maritime traffic, which includes tankers, commercial barges being towed by tugboats, commercial fishing, cruise ships, and recreational vessels. The Raritan River navigational channel divides around the existing swing bridge's center pier as it passes beneath the bridge into two channels (approximately 125 feet each). The vertical clearance of the existing bridge is controlled by aerial cables over the channel with a clearance of 140 feet above MHW when the bridge is opened. The proposed bridge piers and associated fenders for the vertical lift bridge will be placed outside the channel, which will allow a wider area for ship passage than with the existing bridge. The vertical lift span will provide for a vertical clearance of 110 feet and an unimpeded navigation channel, with a width of approximately 300 feet. The 110 feet vertical clearance is the same as at the nearest upstream bridge, Victory Bridge, which carries Route 35 over the Raritan River upstream from the Raritan River Bridge.

The new lift will operate reliably and the number and severity of delays related to bridge malfunction will be reduced. Most recreational boats will be able to pass beneath the new bridge without opening the lift span since it will be approximately ten feet higher than the existing bridge (18 feet above MHW). For the larger vessels, the lift can be opened quickly (within three minutes as compared to 3.5 minutes under existing conditions), reducing wait times. Finally, the risk of boat collisions and the potential for damage related to those collisions will be greatly reduced due to the unimpeded channel width and the provision of bridge fenders at the bridge piers for the main span.

## **H.2 OUTREACH METHODOLOGY**

Outreach methodology was developed using guidance found in USCG Bridge Permit requirements and the Memorandum of Understanding between USCG, FHWA, FTA, and FRA (dated January 14, 2014). In addition, guidance from the "USCG Bridge Program Reasonable Needs of Navigation White Paper" (Version 1.1, October 5, 2012) was used to develop a Maritime Stakeholder Survey. The project design team (Hardesty & Hanover / Gannett Fleming) prepared a *Navigation Impact Report*<sup>1</sup>, which summarizes the results of the Maritime Stakeholder Survey. A summary of the agency and public outreach that has occurred to date is presented below.

In addition to the maritime user outreach, NJ TRANSIT held two public information sessions to inform the general public of the proposed project's design, as detailed in Appendix F. A project outreach database (i.e., mailing list) was developed, which includes information on project stakeholders (elected officials, community groups, maritime users, local businesses, public agencies, affiliated team

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<sup>1</sup> Raritan River Bridge Replacement Navigation Impact Report, H&H/Gannett Fleming, November 15, 2016.

## Raritan River Bridge Replacement EA

members, and other interested parties). A project website is being maintained to provide information on the project and any upcoming milestones or meetings. The website is accessible through NJ TRANSIT's resilience website ([www.njtransitresilienceprogram.com/raritanriveroverview](http://www.njtransitresilienceprogram.com/raritanriveroverview)).

### H.2.1 LIST OF STAKEHOLDERS

The following table shows a list of contacts identified for distribution of the Maritime Navigation User Survey for the Raritan River Bridge Replacement project.

Location	Type	Stakeholder
Regional	Maritime	Captain Eric Johansson, Director Maritime Association of the Port of NY/NJ, Tug & Barge Committee 17 Battery Place, New York, NY 10004
Regional	Maritime	Jack Olthuis, Director Sandy Hook Pilots Association 201 Edgewater Street, Staten Island, NY 10004
Regional	Maritime	Genevieve Boehm Clifton NJDOT Office of Maritime Services 1035 Parkway Avenue 3rd Floor Main Office Building, Trenton, NJ 08625
Regional	Maritime	Lieutenant Kenneth Ryan, NJ Boating Law Administrator National Association of Boating Law Administrators Marine Services Bureau, PO Box 7068, West Trenton, NJ 08628
Regional	Maritime	Bill Schultz, Raritan Riverkeeper NY/ NJ BAYKEEPER 52 West Front Street, Keyport, NJ 07735
Regional	Maritime	Melissa Danko, Executive Director New Jersey Marine Trades Association 2516 Highway 35, Suite 201, Manasquan, NJ 08736
Regional	Maritime	Andre M. Stuckey, Executive Director New Jersey Maritime Pilot & Docking Pilot Commission One Penn Plaza East, 9th Floor, Newark, NJ 07105
Regional	Government	Paul Truban NJDOT Freight Planning and Services 153 Halsey Street, Newark, NJ 07102
Regional	Government	Kathleen Shaw, Director Middlesex County Office of Economic & Business Development County Administrative Building, 75 Bayard Street, 2nd Floor New Brunswick, NJ 08901
Regional	Government	Zenobia Fields, Director NJTPA, Department of Planning One Newark Center, 1085 Raymond Boulevard, 17th Floor Newark, NJ 07102

**Appendix H: Maritime User Outreach Summary**

Location	Type	Stakeholder
New Brunswick	Government	Glenn Patterson, Director of Planning, Community & Economic Development City of New Brunswick PO Box 269, 25 Kirkpatrick Street, New Brunswick, NJ 08903
Sayreville	Government	Sayreville Recreation Department 167 Main Street Sayreville, NJ 08872
Edison	Government	Denise Halliwell-DeSantis, Director Town of Edison Recreation Department Stelton Community Center 100 Municipal Boulevard, 2nd Floor, Edison, NJ 08817
Perth Amboy	Local Business	Mustafa Kilic, President Cornucopia Cruise Line 401 Riverview Drive, Perth Amboy, NJ 08861
Perth Amboy	Local Business	Buchanan Marine / Tilcon 39 East Ferry Street New Haven, CT 06513
Keasbey	Local Business	Bayshore Recycling Corporation 75 Crows Mill Road, PO Box 290 Keasbey, NJ 08832
Keasbey	Local Business	Selective Transportation Corporation 19 Crows Mill Road Keasbey, NJ 08832
Woodbridge	Local Business	Mike Mattsson Buckeye Raritan Bay Terminal 1196 State Street, Perth Amboy, NJ 08861
Newark	Local Business	Joseph Villa, Vice President Columbia Group, Columbia Coastal Transport 106 Allen Road, Liberty Corner, NJ 07938
Keasbey	Local Business	Raritan Central & Pennsylvania & Southern Corporate Headquarters Raritan Logistics Center One Gateway Center, Suite 501B, Newtown, MA 02458
Liberty Corner	Local Business	Ronald Treloni, President Trevcon Construction 30 Church Street, Liberty Corner, NJ 07938

**Raritan River Bridge Replacement EA**

Location	Type	Stakeholder
Edison	Local Business	Anthony Rispoli, Director of Real Estate Federal Business Centers 300 Raritan Center Parkway, Edison, NJ 08837
Sayreville	Local Business / Utilities	NRG Sayreville Station 7702 River Road Sayreville, NJ 08872
Regional	Local Business / Utilities	J. Christopher Hocker, Vice President of Planning PowerBridge LLC Neptune Regional Transmission System 501 Kings Highway East, Suite 300, Fairfield, CT 06825
Sayreville	Recreational	Morgan Marina 8000 Gondek Drive Parlin, NJ 08859
Perth Amboy	Recreational	Judie Mrozek, Office Manager Perth Amboy Municipal Marina Harborside Marina Utility 260 Front Street, Perth Amboy, NJ 08861
Perth Amboy	Recreational	Coach Bruce Bertucci Perth Amboy High School Sailing Team 2 Second Street, Perth Amboy, NJ 08861
Perth Amboy	Recreational	Joann Bauer, Club Steward Raritan Yacht Club 160 Water Street, Perth Amboy, NJ 08861
Edison	Recreational	Edison Boat Basin, Township of Edison Edison Municipal Complex 100 Municipal Boulevard, Edison, NJ 08817
Keasbey	Recreational	Keasbey Outboard Boating Club 155 Smith Street Keasbey, NJ 08832
Edison	Recreational	Raritan River Boat Club 200 Player Avenue Edison, NJ 08817
Old Bridge	Recreational	Rivers End / Mermaids Cove Marina 5 John Street Old Bridge, NJ 08723

Location	Type	Stakeholder
South River	Recreational	South River Boat Club PO Box 293 South River, NJ 08882

## H.2.2 MARITIME NAVIGATION STAKEHOLDER SURVEY

NJ TRANSIT conducted the Maritime Navigation Stakeholder Survey to gather feedback from the various users of the Raritan River and vicinity (see Attachment 1). The survey was sent to the above list of stakeholders, including commercial and recreational maritime users, as well as local businesses and property owners. A total of 11 survey responses were received (see Attachment 2), and the data collected was summarized in the *Navigation Impact Report*, which will support the U.S. Coast Guard permit application that is needed for the proposed Project. Of the 11 survey responses, five users submitted comments regarding the bridge replacement project, as follows:

- Cornucopia Cruise Lines indicated that the current bridge limits their operation to a set schedule, and they would prefer a minimum clearance of 60 feet with a moveable bridge opening 70 plus feet.
- Buckeye Pilots would prefer a bridge with greater horizontal clearance (up to 250 feet for two-way traffic) with a substantial fendering system.
- A recreational user suggests increasing the clearance by about 10 feet to eliminate the need for many openings to stimulate recreational traffic and commercial operations. Additionally, the user suggests preserving a portion of the existing bridge as a fishing pier adjacent to the future Second Street Park in Perth Amboy.
- Harbor Pilots of NY and NJ would like a similar clearance as the Lehigh Valley Railroad Bridge with a width of 300 feet, height of 105 feet, and a beam 40 feet.
- The Sandy Hook Pilots request that the Raritan River should remain navigable to large ocean-going ships. They also request that existing clearances and limitations of the Raritan River Bridge should be maintained and not reduced.

The largest vessels reported by respondents to the Waterway User Survey had maximum dimensions of 30-foot depth, 105-foot wide beam, and 135-foot air draft. However, one respondent who reported the largest air draft of 135 feet (Buckeye Pilot) has a storage facility up river of the Victory Bridge which has a limiting vertical clearance of 110 feet. Buckeye has multiple facilities in the area (Port Reading, Woodbridge, NJ and Perth Amboy, NJ) on the Arthur Kill, which would support a larger air draft than that of the Raritan River facility. The Harbor Pilots of NY NJ also reported a Maximum Vessel Air Draft of 135 feet. Similarly to the Buckeye vessel, Harbor Pilots is limited by the 110-foot Vertical Clearance at the Victory Bridge. Harbor Pilots of NY NJ expressed interest in a 135 foot vertical clearance at an early coordination meeting with New Jersey TRANSIT, citing potential development between the Raritan River Railroad Bridge and the Victory Bridge. Based on research conducted, it appears that future development between the Raritan River Railroad Bridge and the Victory Bridge is unlikely to result in vessels requiring up to 135 feet of vertical clearance. In addition to Buckeye, Bayshore Recycling Facility

also responded with a maximum air draft of 115 feet. Similar to the Buckeye Raritan River facility, Bayshore Recycling Facility is located upstream of the Victory Bridge (110 feet vertical clearance), as well as the Edison Bridges and the Driscoll Bridge. For these commercial users, the Victory Bridge (and Edison Bridges) vertical clearance of 110 feet controls for the vessel dimensions used in their operations.

Additionally, the second largest group of vessels to utilize this waterway are commercial recreation vessels. The Cornucopia Cruise Line is located between the Victory Bridge and the Raritan River Railroad Bridge on the Perth Amboy side of the river. The Cornucopia Cruise Line is the only current commercial recreational user between the Victory Bridge and the Raritan River Railroad Bridge. The controlling vessel dimensions for the Cornucopia Cruise Line vessels are 220' Length, 70' Beam and 70' Air Draft (empty).

### **H.3 PUBLIC INFORMATION SESSIONS**

Public information sessions were held in Perth Amboy and South Amboy on September 20, 2016, and September 27, 2016, respectively. The Perth Amboy meeting was held in the Community Room of the Alexander F. Jankowski Community Center, and the South Amboy meeting was held in the South Amboy Council Chambers. Notices of the meetings were widely distributed and advertised in English- and Spanish-language newspapers. An e-blast notification and/or letters were sent to stakeholders in the public outreach database, including maritime users. At the Public Information Sessions a project fact sheet and presentation boards describing the proposed project and NEPA process were available, a short presentation was given, and project team members were available to answer questions. The information presented at the public information sessions included the proposed design and navigational clearances. One comment during the public information session requested clarification on the proposed clearances, as stated below:

**Comment 1:** I had the understanding from prior conversations that the overall above mean high water clearance (not just in swing opening portion) would be much higher than this video suggests. Please clarify fixed portion clearance and opening clearance. Thank you. (Denise Nickel)

**Response:** The existing bridge has eight feet vertical clearance to the Mean High Water level in closed position. The new bridge will be raised an additional ten feet to protect the railroad tracks and equipment from future storm surges. Therefore, the vertical clearance in a closed position will increase to 18 feet. The height of the new bridge is limited by the need to tie into the existing railroad tracks prior to the Perth Amboy and South Amboy stations while maintaining a grade of less than 1.5 percent to permit the operation of freight trains on the North Jersey Coast Line. In the open position the vertical lift will provide a vertical clearance of 110 feet, which is the same as the vertical clearance of the adjacent Victory Bridge.

### **H.4 AGENCY COORDINATION**

NJ TRANSIT held a meeting with the Harbor Safety Operations and Navigation Committee of the Port of New York and New Jersey (Harbor Ops) Steering Committee on May 4, 2016 at the United States Coast

Guard, New York Sector office. The meeting included agency representatives from NJ TRANSIT, USCG, U.S. Army Corps of Engineers (USACE), New Jersey Department of Transportation (NJDOT), and the Maritime Association of the Port of New York/New Jersey Tug & Barge Committee. Meeting minutes from this meeting are included in Appendix C-4. There was a discussion about bridge type as it affects navigability and support for a lift bridge. The meeting attendees noted a need for a wider navigation channel beneath the bridge, which would be afforded by a lift bridge. Other benefits of a lift bridge that were identified include its ability to be opened partway to accommodate smaller vessels, which reduces the amount of time needed for the lift. There was some discussion about the need to accommodate future development upriver of the bridge between the Raritan River Bridge and Victory Bridge. Following this meeting, the site owners between the two bridges were identified and invited to participate in the Maritime User Survey. The group also discussed future coordination and how best to conduct outreach with maritime users.

NJ TRANSIT held a separate meeting with the USCG and USACE on June 29, 2016 at the FTA, Region 2 office. Meeting minutes from this meeting are included in Appendix C-4. The Maritime Navigation User Survey and its distribution list were reviewed and discussed at the meeting. Additional potential sources of information on maritime uses of the river were identified, including the USACE's Waterborne Commerce report on commercial vessel activity, USCG's vessel traffic information, and NJ TRANSIT's bridge opening logs. As the proposed navigational clearances were discussed, USCG noted their preference for a wider horizontal channel that a vertical lift bridge would allow and noted that 110 feet should be an adequate vertical clearance. Regarding demolition of the existing bridge piers, USCG requires that the piers be removed to below the mudline.

As part of the NEPA process, USCG, USACE, USEPA, USFWS were identified as participating agencies and agency representatives reviewed and commented on draft of the Environmental Assessment. Agency comments and responses to those comments are presented in Appendix F-2

■

## **Attachment 1**

### Maritime Navigation User Outreach Summary

**NJ TRANSIT**

**Raritan River Bridge Replacement Project**

**Maritime Navigation Stakeholder Survey**

NJ TRANSIT is proposing to replace and then remove the existing 108-year-old Raritan River railroad bridge. The new bridge would run parallel to the existing bridge location and preserve existing passenger and freight rail service. The proposed replacement bridge would also include a moveable span to replace the existing swing bridge in order ensure continued maritime navigation between the Raritan River and the Atlantic Ocean.

To make sure the needs of existing and projected maritime users are fully considered in the design of the future bridge, NJ TRANSIT is requesting your input regarding your or your organization's needs regarding the Raritan River navigation channel and swing bridge. Information obtained in the questionnaire will be used to complete a Maritime Navigation Evaluation required by the U.S. Coast Guard, the U.S. Army Corps of Engineers, and other review agencies to better understand and mitigate the potential impacts of the proposed Raritan River Bridge Replacement Project on river navigation.

The questionnaire is entirely voluntary. No individual responses will be shared with the general public. Any proprietary information you choose to share will not be released to the general public. Any non-proprietary data shared with the public will be in summary form only. Attachments may be used to answer questions, as you find appropriate.

Questions 1-14 are for all maritime users of the Raritan River channel in the vicinity of the Raritan River Bridge.

Questions 15-23 pertain only to operators of large commercial freight, fishing, or passenger vessels/service.

**Please return completed surveys no later than June 14, 2016.**

**Email:** [RPalladino@njtransit.com](mailto:RPalladino@njtransit.com)

**Fax:** (973) 805-4824

**Mail:** RJ Palladino

NJ TRANSIT Capital Planning

One Penn Plaza East - 8th Floor

Newark, NJ 07105-2246

**NJ TRANSIT thanks you for your input.**

**NJ TRANSIT Raritan River Bridge Replacement Project  
Maritime Navigation Stakeholder Survey**

**1. Characterize the purpose of the vessel(s) you or your organization use(s) to transit the Raritan River waterway? Check all that apply.**

\_\_\_\_\_ Personal Use/Rental Use/Private Charter Use

\_\_\_\_\_ Commercial Passenger

\_\_\_\_\_ Commercial Freight/River Construction

\_\_\_\_\_ Public Safety (Fire and Rescue, Police, USCG, US Naval Vessel)

**2. What are the type(s) and number of vessel(s) your organization uses to transit the Raritan River rail bridge or expects to use on the waterway during the future, including a long-term future horizon? (Please provide number for each type of vessel listed below. If the number varies or will increase in the foreseeable future, please state as a range of numbers or maximum.)**

\_\_\_\_\_ Canoe/Kayak/Rowboat

\_\_\_\_\_ Small Motorboat

\_\_\_\_\_ Cabin Cruiser

\_\_\_\_\_ Houseboat

\_\_\_\_\_ Pontoon Boat

\_\_\_\_\_ Sailboat

\_\_\_\_\_ Passenger Ferry

\_\_\_\_\_ Passenger/Vehicle Ferry

\_\_\_\_\_ Passenger Cruise Ship

\_\_\_\_\_ Tug/Barge (Coastal)

\_\_\_\_\_ Freight Ship (Oceangoing)

\_\_\_\_\_ Tanker (Oceangoing)

\_\_\_\_\_ RO/RO (Oceangoing)

\_\_\_\_\_ Commercial Fishing Vessel

\_\_\_\_\_ Other. Describe \_\_\_\_\_

**NJ TRANSIT Raritan River Bridge Replacement Project  
Maritime Navigation Stakeholder Survey**

**3. What are the maximum vessel dimensions of your organization's largest vessel(s)? Please provide the maximum dimension from any of your vessels in answering this question.**

Maximum Vessel length overall \_\_\_\_\_

Maximum Vessel beam (widest point- at, above, or below the waterline) \_\_\_\_\_

Maximum Vessel draught (depth of hull below waterline at full load) \_\_\_\_\_

Maximum Vessel air draft (height of the highest fixed point of the vessel above the waterline, when empty) \_\_\_\_\_

*Optional: Please attach a photograph of your organization's largest vessel(s) (by height, length, beam, draught and/or air draft) using the waterway*

**4. What are the minimum dimensional bridge safety margin(s) (depth, width, overhead clearance) required by your largest vessels to navigate through the bridge?**

- Minimum channel depth \_\_\_\_\_
- Minimum horizontal width clearance \_\_\_\_\_
- Minimum vertical/ overhead clearance (above waterline) \_\_\_\_\_

**5. Please state any specific or special vessel characteristics required to transit the existing Raritan River rail bridge (e.g., if tug assist is required for transit through the bridge due to limited horizontal clearance, if cargos or barge tows consisting of more than one barge must be separated, other limitations on maneuverability etc.).**

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**NJ TRANSIT Raritan River Bridge Replacement Project  
Maritime Navigation Stakeholder Survey**

**6. What is/are the primary vessel mooring location(s) of your organization's vessels (name, address and (if known) waterway mile point)?**

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**7. Does your organization have plans to add or change primary mooring locations in the future, including a long-term future horizon? If so, where?**

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**8. How often in total do your vessels transit through the Raritan River rail bridge? Please add any notes on variation due to day of the week or season.**

Average Transits per Day? \_\_\_\_\_

Peak Transits per Day? \_\_\_\_\_

What day(s) of week are peak? \_\_\_\_\_

Average Transits per Month? \_\_\_\_\_

Peak Transits per Month? \_\_\_\_\_

What month(s) are peak? \_\_\_\_\_

Average Transits per Year \_\_\_\_\_

**9. Does your organization plan to increase the frequency of transit through the Raritan River rail bridge in the future, including a long-term future horizon?**

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**NJ TRANSIT Raritan River Bridge Replacement Project  
Maritime Navigation Stakeholder Survey**

**10. Do you or your organization have plans to use vessels larger than currently in use for transit of the Raritan River Rail Bridge?**

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**11. Do you operate or plan to operate your vessel(s) through the Raritan River rail bridge in hours of darkness?**

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**12. Do you know of any planned waterway improvements elsewhere on the Raritan River intended to facilitate vessels larger than currently in use and that are intended to navigate past the Raritan River rail bridge?**

Yes \_\_\_\_\_ No \_\_\_\_\_

If "yes," what are they? \_\_\_\_\_

**13. Do you know of any existing waterway obstructions or hazards near the Raritan River rail bridge or elsewhere on the Raritan River that pose a threat to bridge reconstruction?**

Yes \_\_\_\_\_ No \_\_\_\_\_

If so, what are they? \_\_\_\_\_

**14. Please provide any other comments, questions, or concerns regarding the proposed Raritan River Bridge Replacement Project in the space below or as an attachment.**

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**NJ TRANSIT Raritan River Bridge Replacement Project  
Maritime Navigation Stakeholder Survey**

**FOR COMMERCIAL VESSELS/ VESSEL OPERATORS ONLY**

**15. What are your typical/ maximum vessel transit speeds and load configurations?**

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**16. How many commercial passengers does your organization carry through the Raritan River rail bridge per year?**

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**17. Does your organization have plans to increase the number of passengers transiting the Raritan River rail bridge?**

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**18. How much maritime cargo (tonnage) does your organization transit through Raritan River rail bridge per year?**

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**19. Does your organization have plans to increase the tonnage of cargo transiting the Raritan River rail bridge?**

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**20. What type(s) of cargo does your organization transport through the Raritan River rail bridge?**

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**21. Do you use these waters used to transport interstate or foreign commerce?**

Yes \_\_\_\_\_ No \_\_\_\_\_

**NJ TRANSIT Raritan River Bridge Replacement Project  
Maritime Navigation Stakeholder Survey**

**22. Do you know of any plans to use or expand use of the river for interstate and foreign commerce (freight or passenger)?**

Yes \_\_\_\_ No \_\_\_\_\_

If so, what are they? \_\_\_\_\_

**23. Please provide the following for all commercial vessels utilizing the waterway or expected to utilize the waterway in the future, including a long-term future horizon (add sheet or attach separately if necessary):**

- Vessel name and registration/documentation numbers
- Vessel owner contact information (company/individual name, address, contact info)

## **Attachment 2**

Maritime Navigation User Survey and Summary Table

**Raritan River Bridge Replacement Project - Waterway User Survey Results**

Question	Cornucopia	Bayshore	Buckeye Partners	Buckeye Pilot	Federal Business Centers	Harbor Pilots of NY NJ	Marina	Raritan Yatch Club	Sandy Hook Pilots Assn	Unknown Tug and Barge	Marina	Min	Max
<b>#3. What are the maximum vessel dimensions of your organization's largest vessel(s)?</b>													
Maximum Vessel length overall	220	730	550	690	300	650	54	90	184	150	34	54	730
Maximum Vessel beam (widest point- at, above, or below the waterline)	70	75	90	80	60	105	16	14	34	48	15	14	105
Maximum Vessel draught (depth of hull below waterline at full load)	7	30	25	28	12	n/a	5.5	7	15	10	3.5	5.5	30
Maximum Vessel air draft (height of the highest fixed point of the vessel above the waterline, when empty)	70	115*	90	135*	80	135	24	60	88	60	18	24	135
<b>#4. What are the minimum dimensional bridge safety margin(s) (depth, width, overhead clearance) required by largest vessels to navigate through the bridge?</b>													
Minimum channel depth	7	30	n/a	28	18	35	6	n/a	n/a	20	8	6	35
Minimum horizontal width clearance	70	n/a	150	140	100	300	16	n/a	n/a	150	22	16	300
Minimum vertical/ overhead clearance (above waterline)	n/a	n/a	90	135*	100	135	24	n/a	n/a	60	25	24	135

Question	Cornucopia	Bayshore	Buckeye Partners	Buckeye Pilot	Federal Business Centers	Harbor Pilots of NY NJ	Marina	Raritan Yacht Club	Sandy Hook Pilots Assn	Unknown Tug and Barge	Marina	Min	Max
<b>#8. How often does your vessel or the total of all your vessels transit through the Raritan River Drawbridge?</b>													
Average transits per day?	2	2	n/a	1	2	n/a	6	variable 0-1	n/a	n/a	n/a	1	6
Peak transits per day?	n/a	4	n/a	n/a	2	n/a	20	variable 0-2	n/a	n/a	n/a	2	20
What day(s) of week are peak?	Sat-Sun	variable	n/a	n/a	Wednesday	n/a	Sat-Sun	n/a	n/a	n/a	n/a	n/a	n/a
Average transits per month?	variable 25-30	48	variable 16-28	n/a	40	variable 1-6	180	variable 0-2	n/a	n/a	n/a	1	180
Peak transits per month?	30	96	20	n/a	40	n/a	160	variable 0-2	n/a	n/a	n/a	2	160
What months are peak?	May-Sept	variable	Oct-March	n/a	August	n/a	June-Aug	n/a	n/a	n/a	n/a	n/a	n/a
Average transits per year	n/a	500	variable 192-240	n/a	200	variable	n/a	variable 5-10	variable 2-4	n/a	n/a	2	500

**Color Code:**

Emergency Ops, National Defense or Channel Maintenance Vessels
Recreational Vessels
Commercial Vessels
Unknown

\* Buckeye and Bayshore are restricted by the 110' Vertical Clearance at the Victory Bridge. These vessels have no mooring between Victory Bridge and Raritan River Railroad Bridge.