MEMORANDUM

Date: May 20, 2015

To: Robert Perry Jr., Superintendent
City of Hudson Department of Public Works

From: Matt Hunt, PE
Creighton Manning Engineering, LLP

cc: 

Project: Ferry Street Bridge over CSX/Amtrak (BIN 2223000)
Bridge Engineering Assessment
City of Hudson, Columbia County, NY

Re: Final Scope Summary Memorandum

1. Introduction

The purpose of this memorandum is to present alternatives of varying feasibility for the above referenced project, document the existing conditions, establish project objectives, document environmental concerns, and provide a basis for obtaining project funding and proceeding to final design.

The Ferry Street bridge over CSX/Amtrak railroad lines is located at the intersection of Front Street, Allen Street, and Ferry Street in the City of Hudson. The area is urban with mixed residential and commercial use to the east of the bridge. The bridge provides access to a boat launch, marina, and Henry Hudson Riverfront Park. Ferry Street is a two-lane road with an asphalt roadway width that varies from 40 to 48 ft. at the approaches.

Originally built in 1905, the existing bridge is a 69 ft. single span steel pony truss type structure with a north, south, and center truss on stone block gravity abutments. The existing vertical clearance above the tracks is 19'-5" with an existing superstructure depth (top of deck to bottom of low chord) of approximately 1'-5". The existing abutments are set approximately at a 7 degree skew which closely matches the alignment of the railroad tracks below. The bridge roadway is separated by an unprotected center truss member, with each section carrying a 17.5 ft. wide timber roadway. No sidewalks are carried across the bridge; an adjacent structure currently carries a pedestrian walkway over the railroad tracks with a vertical clearance approximately the same as the existing Ferry Street bridge of 19'-5".

There are two other adjacent structures to the north of the existing bridge and pedestrian bridge. The first is a steel structure carrying a broken water main with a vertical clearance approximately the same as the existing Ferry Street bridge of 19'-5". The other is a concrete structure that carries fiber-optic lines, with a vertical clearance greater than the other structures.

2. Conditions

The Ferry Street Bridge was closed to traffic in 2014 by the City of Hudson due to its deteriorated condition. The bridge is in very poor condition and was rated a “3” in the 2014 biennial bridge inspection report. The center and north steel trusses exhibit section losses up to 80% of the main load carrying members. The south truss is in better condition with only minor areas of deterioration. All steel floorbeams frame into the truss panel points and have section losses up to 75% in the webs with several 2” to 3” diameter holes and
section losses up to 55% in the top and bottom flanges. The timber stringers are supported by steel seat angles connected to the floorbeam webs and are in fair to good condition with minor rot and splitting. The timber deck is in poor condition with numerous water stains on the underside of the deck and the timber wearing surface is also in poor condition with wearing in the wheel paths and random areas of checking/splitting.

The substructures are comprised of laid up stone stems and timber plank backwalls with conditions ranging from good to poor. The east abutment is generally in good condition with some deterioration to the bearings, backwall, and bridge seat. The west abutment is in fair to poor condition with bearings and the backwall being severally deteriorated. The bridge seat is in fair condition and is covered with debris. The west abutment stem is in fair to poor condition with several vertical and diagonal cracks up to ¼” wide. This condition is long standing and there are no unusual displacements of any stones. Both abutment stems are functioning well.

The approaches are in fair to good condition with only minor deterioration to the pavement and impact damage to the guide rail.

Due to the type and condition of superstructure, rehabilitation of the existing truss superstructure is not a feasible alternative and will not be evaluated.

Photo 1: South side of existing bridge and west abutment
3. **Project Objectives**

- Provide a structurally and geometrically sufficient structure meeting current NYSDOT standards with a 50+ year design life
- Provide unrestricted access to waterfront and future development of City property

4. **Design Criteria**

The design criteria for this project are based on the New York State Department of Transportation (NYSDOT) Highway Design Manual, Chapter 2 and the NYSDOT Bridge Design Manual, 2006. The project is being designed for an anticipated annual average daily traffic (AADT) of 733 vpd for the design year 2045, a highway classification as “local urban street” with a design speed of 20 mph, and with consideration to the 5% truck traffic generated by the boat launch and marina.

4.1 **Critical Design Elements**

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<td>2 Lane Width</td>
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<td>30 ft.</td>
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<td>10.7%*</td>
<td>11.5%<em>,</em>**</td>
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<td>6 Stopping Sight Distance</td>
<td>115 ft. Min. – HDM Sect. 2.7.4.2, Exhibit 2-8</td>
<td>165 ft.</td>
<td>88 ft.<em>,</em>** (Headlight)</td>
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<td>7 Vertical Clearance</td>
<td>22 ft. (BM 2.4.2)</td>
<td>19'-5&quot;**</td>
<td>19'-5&quot;<strong>,</strong>*</td>
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<td>AASHTO HL-93 Live Load - BM Sect 2.6.1</td>
<td>&lt;3 tons**</td>
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* Non-Standard Feature
** Bridge is currently closed; however, it was posted for 3 tons in 2013.
***Recommended alternative
5. **Feasible Alternatives**

5.1 **Alternative 1 – Replace Superstructure on Alignment (Maintaining Existing Vertical Clearance)**

Alternative 1 will completely replace the existing 69 ft. single span steel pony truss superstructure with a new structure on the same roadway alignment. The proposed structure is a 70 ft. single span concrete through-girder superstructure. The bridge and approach roadway section will consist of two 10 ft. wide travel lanes, two 5 ft. wide shoulders, and two 5 ft. wide sidewalks with 5 inch curbs for a curb-to-curb width of 30 ft. and a rail-to-rail bridge width of 40’-10”. The new superstructure will be supported by the existing stone abutments with a new concrete bridge seat and backwall. The existing abutments will be repaired as necessary with crack injection utilizing epoxy grout to fill any voids between and within the existing stone blocks.

In order to minimize reconstruction impacts and the rise of the vertical profile, a single span precast concrete through-girder superstructure with transverse prestressed precast concrete slab floor system is proposed. This will effectively limit the depth of the superstructure to the depth of the transverse slabs; approximately 2.0 ft.

Other superstructure types are possible but result in greater superstructure depths, higher roadway profile, and less desirable approach grades. The approximate superstructure depth for a steel pony truss superstructure, which would replicate the appearance of the existing bridge, is 3.5 ft.

The horizontal roadway alignment will closely match the existing alignment. The profile will be raised approximately 2 ft. at the west abutment and 1 ft. at the east abutment to maintain the existing 19’-5” vertical clearance from top of rail under the bridge. The profile raise increases the east approach grade from 3.7% to approximately 6.0%, and the west approach from 10.7% to approximately 11.5%. The west approach grade is non-standard for the existing and proposed configuration. See Figure 1 in Appendix A for preliminary plan, profile, and section.

The three existing adjacent structures to the north of the bridge, consisting of the pedestrian bridge, waterline structure, and fiber-optic lines structure, will remain. The vertical clearance of the existing pedestrian bridge to remain is the lowest of the three structures and is approximately the same as the existing bridge at 19’-5”.

Architectural treatments in the form of decorative fencing, concrete form liners, pilasters, and decorative approach rail will all be considered in the design. Some or all of these types of architectural treatments will be incorporated, based on public input.

The total cost of this alternative including construction, design, and inspection is approximately $1,830,000 (see estimate in Appendix B for additional details).

*Concrete through-girder superstructure example – courtesy of the Fort Miller Group, Inc.*
Concrete through-girder construction example – courtesy of the Fort Miller Group, Inc.

5.2 **Alternative 2 – Replace Superstructure on Alignment (Increasing Vertical Clearance to 22 ft.)**

Alternative 2 will completely replace the existing 69 ft. single span steel pony truss superstructure with a new structure on the same roadway alignment. The proposed structure and abutment rehabilitation is the same as described in Alternative 1.

The horizontal roadway alignment will closely match the existing alignment. The profile will be raised approximately 4.6 ft. at the west abutment and 3.2 ft. at the east abutment to achieve the standard 22 ft. vertical clearance from top of rail to the low chord of the bridge. The profile raise increases the east approach grade from 3.7% to approximately 8.4%, and the west approach from 10.7% to approximately 12.8%. The west approach grade is non-standard for the existing and proposed configuration, while the east approach is standard in its existing configuration and would be made non-standard for this alternative. See Figure 2 in Appendix A for preliminary plan, profile, and section.

The three existing adjacent structures to the north of the bridge, consisting of the pedestrian bridge, waterline structure, and fiber-optic lines structure, will remain. The vertical clearance of the existing pedestrian bridge to remain is the lowest of the three structures and is approximately the same as the existing bridge at 19'-5”.

The total cost of this alternative including construction, design, and inspection is approximately $2,140,000 (see estimate in Appendix B for additional details).

6. **Non-Feasible Alternatives**

6.1 **Alternative 3 – Reconstruct Ferry Street at Grade Crossing and Pedestrian Bridge**

Alternative 3 will eliminate Ferry Street and reroute vehicular traffic to the south to the existing grade crossings at Broad Street. The grade crossings and approach roadways will be completely reconstructed to improve the condition and overall roadway geometry and safety. The reconstructed roadway section will consist of two 10 ft. wide travel lanes, two 5 ft. wide shoulders, and a 5 ft. wide sidewalk on the west side of Water Street. The existing 69 ft. single span steel pony truss superstructure will be completely removed and replaced with a 75 ft. single span arched steel through-truss superstructure that will carry a 10 ft. wide multi-use path. This will connect to new curbed sidewalks along Front Street. The profile of the new multi-use path will be approximately 3.4 ft. and 2.2 ft. higher than the existing bridge at the west and east abutment, respectively, to provide the standard 22 ft. clearance above the tracks. American Disability Act (ADA) compliant ramps will be provided on each side of the multi-use bridge. The multi-use
path superstructure will be supported by new cast-in-place concrete footings and abutments placed directly behind the existing stone abutments. The existing stone abutments will be rehabilitated as described in Alternative 1.

Sidewalks will extend on the west side of Water Street to a crosswalk at the multi-use path at the existing Ferry Street which will allow pedestrians to safely access the Henry Hudson Riverfront Park, existing boat launch, and marina. No sidewalks will be provided at the grade crossing to deter pedestrian access and promote pedestrian safety.

The horizontal roadway alignment will closely match the existing alignment of Broad Street and Water Street. The profile will also closely match the existing grades at Front Street, Broad Street, and Water Street.

This alternative does not meet the project objectives and has been deemed non-feasible.
6.2 Alternative 4 – Complete Replacement on New Alignment to South (22 ft. Vertical Clearance)

Alternative 4 will completely replace the existing 69 ft. single span steel pony truss with a new structure on a new roadway alignment to the south. The proposed superstructure is the same as described in Alternative 1, and it will be supported by new concrete abutments founded on bedrock.

The new horizontal roadway alignment shifts the bridge approximately 130 ft. south and the profile will be raised to achieve the standard 22 ft. vertical clearance from top of rail to the low chord of the bridge. The new alignment lengthens the west and east approach by approaching the bridge at different angles. The west approach will extend into the existing boat launch parking lot. By lengthening the approach roadways, maximum grades at the east and west approaches is approximately 8%, which is standard for the project design criteria.

This alternative would require extensive coordination with CSX/Amtrak and the encroachment into the Hudson Station footprint is not likely to be accepted. Additionally, property acquisitions will be required from New York State at the boat launch, with construction eliminating at least 12 spaces in the parking lot. Extensive retaining walls would be necessary to retain the new roadway and maintain access along Water Street and the parking lot. This alternative will also acquire a large portion of the City owned property at the intersection of water Street and Ferry Street, for which the City has made a priority to remain open for future development. For the above mentioned reasons, Alternative 4 has been deemed non-feasible.

6.3 Alternative 5 – Complete Replacement on Existing Alignment and Raising Intersection (22 ft. Vertical Clearance)

Alternative 5 will completely replace the existing 69 ft. single span steel pony truss superstructure with a new structure on the same roadway alignment. The proposed structure is the same as described in Alternative 1.
The horizontal roadway alignment will closely match the existing alignment, except the western approach will be lengthened by curving into the existing boat launch parking lot. The profile will be raised approximately 4.6 ft. at the west abutment and 3.2 ft. at the east abutment to achieve the standard 22 ft. vertical clearance from top of rail to the low chord of the bridge. The profile raise increases the east approach grade from 3.7% to approximately 8%, and decreases the west approach from 10.7% to approximately 8%.

To achieve the standard grades mentioned above, the intersection at Front Street and Allen Street will need to be raised and the horizontal alignment of Allen Street will need to shift south at the intersection. This raise will result in approximately 225 ft. of reconstruction along Front Street and 175 ft. of reconstruction along Allen Street. Grade separating retaining walls will be constructed between the realigned Ferry Street and Water Street.

This alternative will require a small acquisition of property at a vacant lot on 13 Allen Street, extensive acquisition along the west side of the New York State boat launch parking lot with the elimination of at least 15 spaces, and the complete acquisition of 52 Front Street, which is a listed Historic Property. This alternative will also not allow direct access to Water Street from Ferry Street, thereby partially blocking access to City owned property at the intersection of Water Street and Ferry Street, for which the City has made a priority to remain open for future development. For the above mentioned reasons, this alternative has been deemed non-feasible.

7. **Recommended Alternative**

Alternative 1 is recommended as the preferred alternative for the project. Alternative 1 meets all of the project objectives at the lowest cost. Alternative 1 provides a roadway profile that is more geometrically sufficient and safer to vehicles and pedestrians than Alternative 2. Although Alternative 1 does not meet the standard 22’-0” vertical clearance, it maintains the existing vertical clearance and no additional impacts
to the railroads would occur. Furthermore, the existing adjacent pedestrian bridge and utility structures will remain, and will still restrict the vertical clearance in the area to the existing vertical clearance of 19'-5’; therefore, presenting no benefit to the railroads should Alternative 2 be progressed to construction. Creighton Manning Engineering has reached out to CSX, Amtrak, and NYSDOT and none have confirmed whether or not maintaining the existing vertical clearance is acceptable.

8. **Geotechnical/Substructure**

No soil borings were progressed for this project, as feasible alternatives 1 and 2 propose to utilize the existing gravity abutments.

9. **Maintenance and Protection of Traffic**

The bridge is currently closed to traffic due to its deteriorated condition. The bridge will remain closed, allowing construction to progress in one stage for feasible alternatives 1 and 2. Vehicular traffic will continue to use the only existing access to the west side of Ferry Street via a grade crossing on Broad Street while pedestrians can use the existing pedestrian bridge adjacent to Ferry Street through construction.

10. **Utilities**

The existing bridge carries a gas, electric, and telephone lines owned by National Grid and Verizon, respectively. The electric and telephone lines on the bridge are no longer in service and are now carried on overhead lines along the south fascia. Provisions will be made to carry a gas line on the new bridge's south fascia to avoid conflict with the vertical clearance under the bridge. One adjacent structure carries a damaged water main that will remain. The existing pedestrian bridge will be repurposed to carry a new water main as part of the proposed project. Another adjacent concrete structure carries fiber-optic lines that transition underground on the west side of the bridge and continue under the Hudson River.

An alternative to carrying the gas line on the proposed bridge fascia beams would be to utilize the existing adjacent pedestrian bridge to the north that will remain. The gas line could be carried on the outside or above the existing girders as to not encroach upon the existing vertical clearance above the railroad.

Overhead electric, telephone, and cable lines owned by National Grid, Verizon, and Charter, respectively, cross the railroad tracks parallel to the south bridge fascia, connecting two utility poles near each abutment. Electric service lines from each of the poles cross each approach near the abutments. During lifting operations for removal of the existing structure and installation of the new structure, the service lines crossing the approaches will need to be de-energized and dropped, and the electric lines parallel to the south fascia will need to be de-energized.

The utility relocations will be coordinated during final design.

11. **Right of Way**

All elements of the new bridge in feasible alternatives 1 and 2 will be within the existing highway ROW; no easements will be required for construction.

12. **Environmental Concerns**

12.1 **SEQR**

The City of Hudson would be the SEQR lead agency. In accordance with 6 NYCRR, Part 617, “Procedures for
Implementation of State Environmental Quality Review Act”, the project is a SEQR Type II Action, therefore no further SEQR processing would be required.

12.2 **SHPO**

A query of the NYSHPO website was conducted to identify any cultural resources located within or immediately adjacent to the project site. The Cultural Resource Information System (CRIS) identified two nearby structures that are listed on the National Register of Historic Places, 48 and 52 Front Street. However, neither of these cultural resources are located within the proposed project limits of the feasible alternatives. The existing truss structure was identified in CRIS with an undetermined status. Confirmation on the historic eligibility of the truss will need to be determined prior to final design. Furthermore, this project will not affect any previously undisturbed areas, since the new bridge is to be constructed on an identical alignment and will reuse the existing substructures.

Based upon this information, and with possible exception of a determination on the existing steel truss, this project will have no effect on properties on or eligible for inclusion in the National Register of Historic Places.

12.3 **Environmental Screenings**

An environmental screening of the project area was performed and it has been determined that the proposed construction will not have an impact on any of the following:

- Freshwater or tidal wetlands and associated areas;
- Floodplains;
- Prime or unique agricultural land;
- Agricultural districts, when more than one acre may be affected;
- Water resources, including lakes, reservoirs, rivers and streams;
- Water supply sources;
- Designated wild, scenic and recreational rivers;
- Unique ecological, natural wooded or scenic areas;
- Any area designated as a critical environmental area pursuant to 6 NYCRR, Part 617

The New York State Department of Environmental Conservation’s (NYSDEC) Environmental Resource Mapper identified the Golden Club (Orontium aquaticum) as a potential rare plant in the vicinity of the project. Per the NYSDEC Environmental Resource Mapper, the Golden Club exists in tidal mudflats, of which there are none in the immediate project site. For this reason, it can be concluded that no rare plants will be impacted by this project.

The NYSDEC Environmental Resource Mapper identified the nearby Hudson River Estuary as a tidal river natural community. The proposed project disturbance area is limited to the currently developed roadway and will not disturb any natural communities near the water’s edge; therefore the project will have no impact on significant natural communities.

The United State Fish and Wildlife Service (USFWS) online Information, Planning, and Conservation System (IPAC) tool identified three possible endangered species in the vicinity of the project. The Indiana Bat and the Northern Long Eared Bat were two of the species identified. Both bat species rely upon trees for a habitat as stated in the species information on the IPAC website. This project does not involve the taking of any trees, therefore it can be determined that the project will have no impact upon either of the species. The New England Cottontail rabbit was the third species identified, which relies on thickets in wooded areas for its habitat according to the species information on the IPAC website. The project disturbance area
is limited to developed roadways and maintained grass areas, therefore it can be determined that the project will have no impact on this species.

See Appendix D for further environmental and cultural resource screening information.

12.4 **Anticipated Environmental Permits**

The proposed project will not require any environmental permits.

13. **Railroad Coordination**

The proposed project will require ongoing coordination with CSX and Amtrak. CSX is the owner of the property and railroad tracks below the bridge and the bridge itself, with Amtrak having a lease for operation and maintenance responsibilities of the tracks and bridge. The following permits are anticipated:

- Preliminary Engineering Agreement for review of the design by Amtrak engineers
- Construction Agreement to provide financial reimbursement to Amtrak for providing a full-time railroad flagger
Appendix A – Plan, Profile, and Section Figures
Appendix B – Cost Estimates
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Incidental/Contingency (25%) $253,000.00

Subtotal 1 $1,262,000.00

Field Change Order (5%) $64,000.00

Subtotal 2 $1,326,000

Mobilization (4%) $54,000

Subtotal 3 $1,380,000

Expected Award Amount (3.5%/yr) $1,430,000.00

Engineering* $200,000.00

Construction Inspection/Support $100,000.00

Railroad Flaggers ($1000/day) $60,000.00

Railroad Track Monitoring/Coordination $15,000.00

Railroad Review/Permit $25,000.00

ROW Costs -

TOTAL $1,830,000.00

*Assumes proprietary superstructure type designed by manufacturer
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Incidental/Contingency (25%)  $308,000.00

Subtotal 1 $1,539,000.00
Field Change Order (5%) $77,000.00

Subtotal 2 $1,616,000
Mobilization (4%) $65,000

Subtotal 3 $1,681,000
Expected Award Amount (3.5%/yr) $1,741,000.00
Engineering* $200,000.00

Construction Inspection/Support $100,000.00
Railroad Flaggers ($1000/day) $80,000.00
Railroad Track Monitoring/Coordination $15,000.00
Railroad Review/Permit $25,000.00

ROW Costs -

TOTAL $2,141,000.00

*Assumes proprietary superstructure designed by manufacturer
Appendix C – Photos
Photo 1 – Aerial view of bridge with approximate project construction boundaries (red).
Photo 2 – West bridge approach from the southwest.

Photo 3 – East bridge approach from the northeast
Photo 4 – West abutment, looking west

Photo 5 – East abutment, pedestrian bridge, and waterline structure, looking southeast
Photo 6 – West approach, looking west

Photo 7 - From left to right: concrete fiber-optic lines support structure, water main support structure, pedestrian bridge, and existing Ferry Street bridge
Appendix D – Environmental and Cultural Resource Screening
Please set your printer orientation to “Landscape”.

Disclaimer: This map was prepared by the New York State Department of Environmental Conservation using the most current data available. It is deemed accurate but is not guaranteed. NYS DEC is not responsible for any inaccuracies in the data and does not necessarily endorse any interpretations or products derived from the data.
The Coordinates of the point you clicked on are:

NYTM
E: 999171
Long/lat/coordinates
W: 73.797
N: 4578779

Rare Plants and Rare Animals
This location is in the vicinity of one or more
Rare Animals and/or Rare Plants

Natural Communities Near This Location:

<table>
<thead>
<tr>
<th>Natural Community Name</th>
<th>Location</th>
<th>Ecological System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tidal river</td>
<td>Hudson River</td>
<td>Estuary Tidal Wetlands (Estuary)</td>
</tr>
</tbody>
</table>

Old or Potential Records (these records are not displayed on the map):

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Date Last Documented</th>
<th>Location</th>
<th>Habitat Where Last Seen</th>
<th>Animal, Plant, or other</th>
<th>NYS Protected Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Golden Club</td>
<td>Orontium aquaticum</td>
<td>1976-05-01</td>
<td>Middle Ground Flatten</td>
<td>Tidal mudflat.</td>
<td>Rare Plant</td>
<td>Threatened</td>
</tr>
</tbody>
</table>

If your project or action is within or near an area with a rare animal, a permit may be required if the species is listed as endangered or threatened and the department determines the action may be harmful to the species or its habitat.

If your project or action is within or near an area with rare plants and/or significant natural communities, the environmental impacts may need to be addressed.

The presence of a unique geological feature or landform near a project, unto itself, does not trigger a requirement for a NYS DEC permit. Readers are advised, however, that there is the chance that a unique feature may also show in another data layer (e.g., a wetland) and thus be subject to permit jurisdiction.

Please refer to the "Need a Permit?" tab for permit information or other authorizations regarding these natural resources.

Disclaimer: If you are considering a project or action in, or near, a wetland or a stream, a NYS DEC permit may be required. The Environmental Resources Mapper does not show all natural resources which are regulated by NYS DEC, and for which permits from NYS DEC are required. For example, Regulated Tidal Wetlands, and Wild, Scenic, and Recreational Rivers, are currently not included on the maps.
Wetlands

Visible Layers

Disclaimer: This map was prepared by the New York State Department of Environmental Conservation using the most current data available. It is deemed accurate but is not guaranteed. NYS DEC is not responsible for any inaccuracies in the data and does not necessarily endorse any interpretations or products derived from the data.
This resource list is to be used for planning purposes only — it is not an official species list.

Endangered Species Act species list information for your project is available online and listed below for the following FWS Field Offices:

New York Ecological Services Field Office  
3817 LUKER ROAD  
CORTLAND, NY 13045  
(607) 753-9334  
http://www.fws.gov/northeast/nyfo/es/section7.htm

Project Name:  
114-249
Trust Resources List

Project Location Map:

Project Counties:
Columbia, NY

Geographic coordinates (Open Geospatial Consortium Well-Known Text, NAD83):
MULTIPOLYGON (((-73.798268 42.2551576, -73.7974178 42.2549869, -73.7972863 42.2549571, -73.7973427 42.25483, -73.798327 42.2550266, -73.798268 42.2551576)))

Project Type:
Bridge Construction / Maintenance
Trust Resources List

Endangered Species Act Species List (USFWS Endangered Species Program).
There are a total of 3 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 fishes may appear on the species list because a project could cause downstream effects on the species. Critical habitats listed under the Has Critical Habitat column may or may not lie within your project area. See the Critical habitats within your project area section below for critical habitat that lies within your project area. Please contact the designated FWS office if you have questions.

Species that should be considered in an effects analysis for your project:

<table>
<thead>
<tr>
<th>Mammals</th>
<th>Status</th>
<th>Has Critical Habitat</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indiana bat (Myotis sodalis) Population: Entire</td>
<td>Endangered</td>
<td>species info</td>
<td>New York Ecological Services Field Office</td>
</tr>
<tr>
<td>New England Cottontail rabbit (Sylvilagus transitionalis)</td>
<td>Candidate</td>
<td>species info</td>
<td>New York Ecological Services Field Office</td>
</tr>
<tr>
<td>northern long-eared Bat (Myotis septentrionalis) Population:</td>
<td>Proposed Endangered</td>
<td>species info</td>
<td>New York Ecological Services Field Office</td>
</tr>
</tbody>
</table>

Critical habitats within your project area:

There are no critical habitats within your project area.


There are no refuges found within the vicinity of your project.

FWS Migratory Birds (USFWS Migratory Bird Program).

The protection of birds is regulated by the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA). Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. For more information regarding these Acts see: http://www.fws.gov/migratorybirds/RegulationsandPolicies.html.
All project proponents are responsible for complying with the appropriate regulations protecting birds when planning and developing a project. To meet these conservation obligations, proponents should identify potential or existing project-related impacts to migratory birds and their habitat and develop and implement conservation measures that avoid, minimize, or compensate for these impacts. The Service’s Birds of Conservation Concern (2008) report identifies species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become listed under the Endangered Species Act as amended (16 U.S.C 1531 et seq.).


To search and view summaries of year-round bird occurrence data within your project area, go to the Avian Knowledge Network Histogram Tool links in the Bird Conservation Tools section at: [http://www.fws.gov/migratorybirds/CCMB2.htm](http://www.fws.gov/migratorybirds/CCMB2.htm).

For information about conservation measures that help avoid or minimize impacts to birds, please visit: [http://www.fws.gov/migratorybirds/CCMB2.htm](http://www.fws.gov/migratorybirds/CCMB2.htm)

### Migratory birds of concern that may be affected by your project:
There are 17 birds on your Migratory birds of concern list. The underlying data layers used to generate the migratory bird list of concern will continue to be updated regularly as new and better information is obtained. User feedback is one method of identifying any needed improvements. Therefore, users are encouraged to submit comments about any questions regarding species ranges (e.g., a bird on the USFWS BCC list you know does not occur in the specified location appears on the list, or a BCC species that you know does occur there is not appearing on the list). Comments should be sent to the ECOS Help Desk.

<table>
<thead>
<tr>
<th>Species Name</th>
<th>Bird of Conservation Concern (BCC)</th>
<th>Species Profile</th>
<th>Seasonal Occurrence in Project Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>American bittern (<em>Botaurus lentiginosus</em>)</td>
<td>Yes</td>
<td><a href="#">species info</a></td>
<td>Breeding</td>
</tr>
<tr>
<td>Bald eagle (<em>Haliaeetus leucocephalus</em>)</td>
<td>Yes</td>
<td><a href="#">species info</a></td>
<td>Year-round</td>
</tr>
<tr>
<td>Black-billed Cuckoo (<em>Coccyzus erythropthalmus</em>)</td>
<td>Yes</td>
<td><a href="#">species info</a></td>
<td>Breeding</td>
</tr>
<tr>
<td>Black-crowned Night-Heron (<em>Nycticorax nycticorax</em>)</td>
<td>Yes</td>
<td><a href="#">species info</a></td>
<td>Breeding</td>
</tr>
<tr>
<td>Blue-winged Warbler (<em>Vermivora pinus</em>)</td>
<td>Yes</td>
<td><a href="#">species info</a></td>
<td>Breeding</td>
</tr>
</tbody>
</table>
**Trust Resources List**

<table>
<thead>
<tr>
<th>Species</th>
<th>Status</th>
<th>Species Info</th>
<th>Breeding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada Warbler <em>(Wilsonia canadensis)</em></td>
<td>Yes</td>
<td>species info</td>
<td>Breeding</td>
</tr>
<tr>
<td>Golden-Winged Warbler <em>(Vermivora chrysoptera)</em></td>
<td>Yes</td>
<td>species info</td>
<td>Breeding</td>
</tr>
<tr>
<td>Least Bittern <em>(Ixobrychus exilis)</em></td>
<td>Yes</td>
<td>species info</td>
<td>Breeding</td>
</tr>
<tr>
<td>Peregrine Falcon <em>(Falco peregrinus)</em></td>
<td>Yes</td>
<td>species info</td>
<td>Breeding</td>
</tr>
<tr>
<td>Pied-billed Grebe <em>(Podilymbus podiceps)</em></td>
<td>Yes</td>
<td>species info</td>
<td>Breeding</td>
</tr>
<tr>
<td>Prairie Warbler <em>(Dendroica discolor)</em></td>
<td>Yes</td>
<td>species info</td>
<td>Breeding</td>
</tr>
<tr>
<td>Red-headed Woodpecker <em>(Melanerpes erythrocephalus)</em></td>
<td>Yes</td>
<td>species info</td>
<td>Breeding</td>
</tr>
<tr>
<td>Rusty Blackbird <em>(Euphagus carolinus)</em></td>
<td>Yes</td>
<td>species info</td>
<td>Wintering</td>
</tr>
<tr>
<td>Short-eared Owl <em>(Asio flammeus)</em></td>
<td>Yes</td>
<td>species info</td>
<td>Wintering</td>
</tr>
<tr>
<td>Upland Sandpiper <em>(Bartramia longicauda)</em></td>
<td>Yes</td>
<td>species info</td>
<td>Breeding</td>
</tr>
<tr>
<td>Wood Thrush <em>(Hylocichla mustelina)</em></td>
<td>Yes</td>
<td>species info</td>
<td>Breeding</td>
</tr>
<tr>
<td>Worm eating Warbler <em>(Helmitheros vermivorum)</em></td>
<td>Yes</td>
<td>species info</td>
<td>Breeding</td>
</tr>
</tbody>
</table>

**NWI Wetlands (USFWS National Wetlands Inventory).**

The U.S. Fish and Wildlife Service is the principal Federal agency that provides information on the extent and status of wetlands in the U.S., via the National Wetlands Inventory Program (NWI). In addition to impacts to wetlands within your immediate project area, wetlands outside of your project area may need to be considered in any evaluation of project impacts, due to the hydrologic nature of wetlands (for example, project activities may affect local hydrology within, and outside of, your immediate project area). It may be helpful to refer to the USFWS National Wetland Inventory website. The designated FWS office can also assist you. Impacts to 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.
Trust Resources List

Data Limitations, Exclusions and Precautions
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 and/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.

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 tuberificid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

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.

IPaC is unable to display wetland information at this time.
### Building USNs (4 Results Found)

<table>
<thead>
<tr>
<th>View</th>
<th>Zoom</th>
<th>USN</th>
<th>Name</th>
<th>Status</th>
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</thead>
<tbody>
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<td>02140.000028</td>
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<td>Undetermined</td>
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<tr>
<td></td>
<td></td>
<td>02140.000257</td>
<td>48 FRONT ST</td>
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<tr>
<td></td>
<td></td>
<td>02140.000258</td>
<td>52 FRONT ST</td>
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<tr>
<td></td>
<td></td>
<td>02140.000835</td>
<td>FERRY ST LATTICE PONY TRUSS BRIDGE - FERRY ST</td>
<td>Undetermined</td>
</tr>
</tbody>
</table>

### Buildings District (1 Results Found)

<table>
<thead>
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<th>View</th>
<th>Zoom</th>
<th>USN</th>
<th>Name</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>02140.000907</td>
<td>Hudson Historic District</td>
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</tbody>
</table>

### Building NRs (1 Results Found)

<table>
<thead>
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<th>Zoom Number</th>
<th>Name</th>
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</thead>
<tbody>
<tr>
<td>90NR00252</td>
<td>Hudson Historic District</td>
<td>Hudson</td>
</tr>
</tbody>
</table>