

**New NY Bridge**  
**Memorandum of Understanding and Settlement Agreement**

This Memorandum of Understanding (MOU) is entered into and effective this 22nd day of March, 2013 by and between the New York State Department of Environmental Conservation (NYSDEC); the New York State Thruway Authority (NYSTA); Riverkeeper, Inc.(Riverkeeper) and Scenic Hudson, Inc. (Scenic Hudson).

**WHEREAS**, NYSDEC has published a draft permit and Water Quality Certificate (WQC) that would authorize NYSTA to construct components of the New NY Bridge and to demolish the Tappan Zee Bridge;

**WHEREAS**, Riverkeeper and Scenic Hudson have submitted written comments concerning the draft permit and requested an adjudicatory hearing concerning the terms and conditions of the draft permit;

**WHEREAS**, the parties wish to avoid the possible delay, inconvenience and uncertainty of permit adjudication or a dispute regarding the failure to hold an adjudicatory hearing as well as potential judicial or administrative action challenging the approval of the replacement of the Tappan Zee Bridge.

**NOW THEREFORE**, without any admission of fact or law and in consideration of the mutual covenants contained herein and for other good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, the parties agree as follows:

**1. Waiver of Permit Adjudication/Covenant Not to Sue**

In consideration of the actions to be performed by the NYSDEC and NYSTA, Riverkeeper and Scenic Hudson jointly and severally:

- (A) withdraw their requests for a hearing pursuant to Environmental Conservation Law (ECL) §70-0119(1) and 6 NYCRR §621.8(b) concerning the terms and conditions of the draft permit and WQC and waive any and all rights to adjudicate the terms and conditions of NYSDEC's permit or WQC.
- (B) without prejudice to their rights, if any, to seek to enforce the terms of the final permit or WQC based upon events that occur during construction, waive any and all rights to challenge, and covenant not to sue or take administrative action, or otherwise assist or encourage third-parties to sue or take administrative action, to challenge any permits, licenses or other approvals issued to, or applied for to date, in connection with the replacement of the Tappan Zee Bridge, including but not limited to the final NYSDEC permit and WQC; the Final Environmental Impact Statement; the Joint Record of Decision and any SEQR Findings Statements.

This waiver and covenant not to sue shall take effect upon execution of this agreement.

2. **MOU Contingent Upon NYSDEC's Permit and WQC**

In the event that NYSDEC does not make the necessary findings required by ECL Article 8 and 6 NYCRR 617 and formally issue a final permit and WQC which conform in all material respects with Exhibit A (draft permit attached hereto) prior to 11:59 pm on March 26, 2013, then without further notice, this MOU shall be void and shall have no further force or effect and no reference to, or reliance upon this MOU or the draft permit attached as Exhibit A shall be made by any party. Provided, however that if NYSDEC issues a final permit and WQC which conforms in all material respects with Exhibit A, this MOU shall not create additional rights beyond existing rights, if any, allowing Riverkeeper, Scenic Hudson or any other third-party to enforce the NYSDEC permit or WQC or to seek to otherwise compel NYSDEC to take administrative or judicial action to enforce the permit or WQC.

3. **NYSTA's Program for Community Related Benefits**

Within 180 days of execution of the MOU, NYSTA will submit to Riverkeeper and Scenic Hudson a plan for developing and a schedule (which shall not exceed 5 years) for implementing, riverfront restoration and revitalization projects which:

- (A) targets Tarrytown, Sleepy Hollow; Irvington; Upper Nyack; Nyack; South Nyack; Grand View on Hudson; Piermont and Orangetown;
- (B) includes a process for obtaining stakeholder input;
- (C) requires consultation with NYSDEC where NYSDEC regulatory approvals might be required and the New York State Department of State Office of Communities and Waterfronts, and
- (D) funds such approved projects with a total aggregate value of \$1.5 million.

4. **NYSTA Notification of Posting Final Plans**

When final plans, reports or data are generated in accordance with the final NYSDEC permit or WQC NYSTA shall:

- (A) promptly post such materials on the project website, and
- (B) within one business day of posting notify the designated representatives of Riverkeeper and Scenic Hudson of the same by telephone or e-mail.

5. **Consultation**

NYSTA shall: (i) conduct regular site visits (not less than semi-annually) with Riverkeeper and Scenic Hudson; (ii) conduct quarterly meeting with Riverkeeper and Scenic Hudson to present updates concerning construction and environmental monitoring, (iii) conduct quarterly meetings with Riverkeeper and Scenic Hudson to solicit input during design and implementation of mitigation plans, including but not limited to the supplemental compensatory mitigation projects described in Exhibit A – Mitigation Section D, and (iv) be reasonably available throughout the construction of the project to consult with Riverkeeper and Scenic Hudson concerning construction and environmental monitoring.



Any meeting required by this provision may, with the consent of all involved parties, take place by telephone or webcast.

**6. Joint Press Release**

The parties agree to work cooperatively on a joint press release and shall not, in advance of the joint press release, otherwise announce the terms or conditions of this MOU. The parties also acknowledge that the Federal Highway Administration and United States Department of Transportation, as lead agency under NEPA, may, in their discretion, issue a press release and respond to press inquiries.

**7. Integrated Agreement; Severability**

This MOU constitutes the entire understanding between the parties concerning the subject matter hereof. No prior or contemporaneous representations or agreements, oral or otherwise, between the parties not embodied in this MOU shall be of any force or effect. This MOU may not be modified except in a writing signed by all parties. If any provision of this MOU shall for any reason be held to be invalid, unenforceable, or contrary to public policy, whether in whole or in part, the remaining provisions shall not be affected by such holding.

**8. Authority to Execute**

Each party affirms that the person executing this MOU on its behalf has full authority to do so.

**9. No Construction Against Party Drafting**

The parties acknowledge that all parties through their legal counsel played an equal role in drafting and/or had an equal opportunity to review and/or modify the provisions set forth in this MOU. Thus, in the event of any misunderstanding, ambiguity, or dispute concerning this MOU provisions, or interpretations, no rule of construction shall be applied that would result in having this MOU interpreted against any party.

**10. Counterparts**

This MOU may be executed in one or more counterparts, all of which shall together constitute one and the same instrument and shall become effective when one or more counterparts have been signed by each and every party hereto and delivered to each party.

IN WITNESS WHEREOF, the parties hereto have duly executed this MOU effective as of the date first above written.

RIVERKEEPER, INC.

Date: 3/22, 2013

By: Phillip Musegaas  
Phillip Musegaas  
Hudson River Program Director


**SCENIC HUDSON, INC.**

Date: \_\_\_\_\_, 2013

By: \_\_\_\_\_  
Steven Rosenberg  
Senior Vice-President

**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION**

Date: 3/22 \_\_\_\_\_, 2013

By:  \_\_\_\_\_  
Joseph J. Martens  
Commissioner

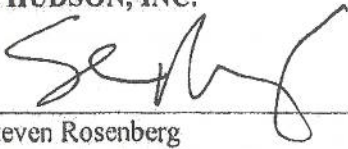
**NEW YORK STATE THRUWAY AUTHORITY**

Date: \_\_\_\_\_, 2013

By: \_\_\_\_\_  
Thomas J. Madison, Jr.  
Executive Director

**SCENIC HUDSON, INC.**

Date: March 22, 2013

By:   
Steven Rosenberg  
Senior Vice-President

**NEW YORK STATE DEPARTMENT OF  
ENVIRONMENTAL CONSERVATION**

Date: \_\_\_\_\_, 2013

By: \_\_\_\_\_  
Joseph J. Martens  
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Date: \_\_\_\_\_, 2013

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Steven Rosenberg  
Executive Vice-President

**NEW YORK STATE DEPARTMENT OF  
ENVIRONMENTAL CONSERVATION**

Date: \_\_\_\_\_, 2013

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Joseph J. Martens  
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**NEW YORK STATE THRUWAY  
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Date: 3/22, 2013

By: \_\_\_\_\_  
  
Thomas J. Madison, Jr.  
Executive Director

Exhibit A to March 22, 2013

New NY Bridge  
Memorandum of Understanding and Settlement Agreement

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**New York State  
Department of Environmental Conservation**



**PERMIT**

**Under the New York State Environmental Conservation Law (ECL)**

**PERMITTEE AND FACILITY INFORMATION**

**PERMITTEE**

New York State Thruway Authority  
200 Southern Boulevard PO Box 189  
Albany, NY 12209-0189

**FACILITY**

Tappan Zee Bridge/The New NY Bridge

**PROJECT LOCATION**

The Hudson River north of the existing Tappan Zee Bridge.

**AUTHORIZED ACTIVITY**

The Permittee will construct a new crossing of the Hudson River consisting of two parallel structures between Rockland County and Westchester County. The new bridge will replace the existing Tappan Zee Bridge, which will be demolished.

This permit approves the following Authorized Activity:

1. Implementation of a phased Pile Load Testing Program, including the installation and removal of 15 temporary piles in the Hudson River.
2. Construction of two parallel bridge structures extending from landings to be built in Rockland and Westchester Counties. The new structures will span the Hudson River navigation channel using cable-stayed towers. This work will require the dredging, installation of piles, pile caps, piers, and other support structures in the Hudson River, and includes the following:
  - Dredging of 951,000 cubic yards of sediment over 139 acres of Hudson River bottom.
  - Covering, or "armoring," 107 acres of dredged river bottom with sand and stone up to two feet in depth.
  - Construction of 6.69 acres of temporary fixed platforms and 2.44 acres of trestles and permanent fixed platforms supported by steel piles, over the Hudson River.
  - Construction of 42 in-water pile-supported support piers.
  - Installation of 150 linear feet of steel sheet pile bulkhead.
  - Installation of piles (other than piles for Pile Load Testing Program in 1, above).





3. Demolition and removal of the existing Tappan Zee Bridge from the bed and banks of the Hudson River.
4. An Incidental Take, as defined in 6NYCRR Part 182.2(j), for potential physiological effects to an estimated 43 Atlantic sturgeon and 43 shortnose sturgeon during project construction, including potentially lethal injury to two Atlantic and two shortnose sturgeon.

### PERMIT AUTHORIZATIONS

#### TIDAL WETLANDS – ECL Article 25

Permit ID 3-9903-00043/00012

New Permit Effective Date: March 25, 2013

Expiration Date: March 24, 2019

#### SECT. 401 WATER QUALITY CERTIFICATION – ECL Article 15

Permit ID 3-9903-00043/00013

New Permit Effective Date: March 25, 2013

Expiration Date: March 24, 2019

#### ENDANGERED/THREATENED SPECIES (INCIDENTAL TAKE) – ECL Article 11

Permit ID 3-9903-00043/00014

New Permit Effective Date: March 25, 2013

Expiration Date: March 24, 2019

### NYSDEC APPROVAL

By accepting this permit the Permittee agrees that the Department's approval is contingent on compliance with the ECL, all applicable regulations and all permit conditions.

Permit Administrator: John J. Ferguson, Chief Permit Administrator  
Address: NYSDEC ALBANY HEADQUARTERS  
625 BROADWAY, 4<sup>TH</sup> FLOOR  
ALBANY, NY 12233

Authorized Signature:

Date:



## SECTION 401 WATER QUALITY CERTIFICATION

The Department of Environmental Conservation hereby certifies that the Authorized Activity, when conducted in compliance with permit conditions, will comply with effluent limitations and standards under Sections 301, 302, 303, 306 and 307 of the Clean Water Act of 1977 (PL 95-217).

## NET CONSERVATION BENEFIT

By letter dated June 25, 2012, the Permittee provided an Endangered and Threatened Species Mitigation Plan. By letter July 23, 2012 the Permittee submitted an Implementation Plan. Each plan fulfills the requirements of 6 NYCRR §182.11(d).

*Within 120 days of the effective date of this permit (except as identified in C, below) the Permittee must submit to the Department for its approval refinements to these plans, including final details, schedule, and execution program, as outlined below. These final details are to be developed in collaboration with the Department.*

Carrying out the Authorized Activity in conformity with the conditions of this Permit and executing the final Endangered and Threatened Species Mitigation Plan as outlined below – and as finalized in collaboration with, and approved by, the Department – will result in a Net Conservation Benefit to the shortnose and Atlantic sturgeon of the Hudson River.

The Endangered and Threatened Species Mitigation Plan will consist of the following:

- A. Mapping of Hudson River shallows less than four meters deep to document benthic habitat used by Atlantic and shortnose sturgeon. Mapping will extend from the Troy Dam south to New York Harbor, and will use techniques consistent with those used by the NOAA Coastal Services Center to map the shallows from Saugerties north to the Troy Dam. The mapping effort may omit the Saugerties to Troy Dam river stretch if the new data can be integrated with the NOAA data into a seamless digital product that can be viewed by general public users. To support and illuminate the sturgeon-related mitigation actions that follow, this work must be completed *within two years of the effective date of the Permit.*
- B. A study of sturgeon foraging habits using gastric lavage to obtain gut contents in order to link sturgeons' diet to benthic habitats. Twenty to thirty of each life stage and species described below are to be lavaged; these fish will not be tagged with sonic tags. Biological characteristics (length and weight) will be collected; a PIT tag will be applied to each fish prior to release.





- C. *No more than 90 days after the effective date of this permit*, or as soon as the Permittee can obtain requisite authorizations to do so, including National Marine Fisheries Services (NMFS) approvals, the Permittee must begin capture and tagging of approximately 30 adult shortnose sturgeon (>500 mm TL); 30 juvenile shortnose sturgeon (300-500 mm TL); 30 pre-migrant juvenile (450 to 1000 mm TL) Atlantic sturgeon; and 30 sub-adult (1000-1300 mm TL) Atlantic sturgeon.
- D. Shortnose sturgeon will be captured at overwintering locations in Haverstraw Bay in early spring (late March through early April and New York harbor in late fall. Attempts to collect juvenile shortnose sturgeon will also be made during the fall downriver of the spawning area which is above Coxsackie. Juvenile Atlantic sturgeon will be captured in late winter and early spring in Haverstraw Bay; sub-adult fish in late spring through early summer in the Tappan Zee reach.
- E. Sonic tags are to be the same as those used in the existing NYSDEC program (LOTEK Dual Mode transmitters). Sturgeon shall be measured for total length, identified to species, examined for a Passive Integrated Transponder (PIT) tag, and if not found to have been tagged, the sturgeon shall be marked with a PIT tag applied in the flesh below the base of the dorsal fin (left side), and surgically implanted with a sonic tag and released. Application of all tags will follow the procedures as outlined in the NMFS permit. Any fish previously tagged with a PIT tag shall be identified to species, measured, PIT tag recorded then released.
- F. Tracking of acoustically marked fish from the vicinity of the bridge construction site and other locations to contribute knowledge of species distribution and habitat use with the Hudson River Estuary. Two techniques will be used: Stationary Gateway receivers, described in Permit Condition 40, below; and Mobile tracking.
- a. Stationary gateway receivers will be used to identify sonic tagged fish as they enter the lower Hudson River, but prior to their arrival in the bridge construction zone. In addition, the applicants shall install stationary gateway receivers at intervals within a 50 kilometer (km) stretch encompassing the bridge construction site. At minimum, receivers shall be placed as follows to cover the entire width of the river:
- George Washington Bridge to Piermont – One centrally located receiver every 5 km.
  - Piermont to Stony Point – three at equally spaced intervals across river every 5 km.

Stationary gateway receivers will be in place *within 90 days of the effective date of the Permit.*

- b. Mobile tracking will be designed to provide a more precise location to determine the bottom and habitat type the tagged fish utilizes. The 50 km stretch of river centered on the Tappan Zee Bridge will be monitored by mobile tracking for tagged fish two days per week on a schedule to be determined and approved by the Department as part of the



final Endangered and Threatened Species Mitigation Plan. Tracking procedures will be consistent with NYSDEC procedures.

Progress reports will be submitted to the Department on a schedule to be developed, with data files, numbers of fish caught, tagged or lavaged, and a summary of work to present, including progress in stomach content analyses and/or fish tracking data.

- G. Development and implementation of an outreach campaign, designed in collaboration with, and approved by, the Department, directed at the commercial fishing industry with the goal of reducing the impact of commercial by-catch of Atlantic sturgeon in the near shore Atlantic Ocean.

## MITIGATION

*Within ninety days of the effective date of this Permit* the Permittee will submit to the Department for its review and approval a Compensatory Mitigation Plan for dredging-related impacts to the benthic community, tidal wetlands and open water community, and plant and animal species utilizing these resources. The final plan will be developed in collaboration with the Department consistent with the Department's July 3, 2102 letter to counsel for New York State concerning the Mitigation Proposal. Upon Department approval Permittee shall implement the Compensatory Mitigation Plan in accordance with the schedule in the approved plan.

The Compensatory Mitigation Plan will include the following:

- A. Oyster Restoration - Permittee will re-establish 13 acres of hard bottom/shell oyster habitat.
- i. In collaboration with the Department, the Permittee will seek to harvest local oysters and historic reef materials from the dredge zone and stockpile these for subsequent habitat re-establishment.
  - ii. Habitat re-establishment will occur as soon as possible following construction, and shall take place in the vicinity of the new bridge.
  - iii. The habitat will be created using native materials to the maximum extent practicable, supplemented as necessary, resulting in a density and pattern of distribution commensurate with that removed in the course of bridge construction. While it's assumed that collecting a live oysters from a nearby reef and conveying them to a marine oyster hatchery to be raised, spawned, and cultured will provide the brood stock to re-establish the oyster reef; Permittee may propose alternative measures.





- iv. All details of the oyster restoration, including the location of the restored habitat, identification of the sources for shell/non-shell material, and the location where broodstock will be cultured, will be developed in collaboration with the Department.
- B. Secondary Channel Restoration at Gay's Point– To be completed *within seven years of the effective date of Permit*.
- i. In collaboration with DEC staff, the Permittee will develop a secondary channel restoration conceptual design project intended to increase habitat diversity and function at Gay's Point (Columbia County).
  - ii. The Permittee will prepare and expeditiously implement a plan to sample and analyze sediment contaminants in the prospective dredge spoil removal area at Gay's Point, and will determine the costs of sediment disposal.
  - iii. If the secondary channel restoration project at Gay's Point can be implemented in a cost-effective manner the Permittee will finalize a restoration design, and, after receiving the Department's approval, implement a secondary channel restoration demonstration project. The design will document the project baseline and reference site conditions, develop target conditions and restoration goals, and specify restoration activities.
  - iv. Alternatively, if the initial assessment shows that a secondary channel restoration project would exceed budget thresholds, as decided by the Department and the Permittee, Permittee will propose and , upon Department approval ,implement an alternative project designed to provide equal habitat benefits.
  - v. The secondary channel restoration plan shall include one year of baseline condition assessment and post-construction monitoring (of a duration to be determined later) of water quality, water flows, vegetation coverage, and other biotic indicators to assess progress toward restoration goals and target conditions. The Permittee will prepare a final report to DEC documenting the restoration process, interim conditions and outcomes, and final conditions and outcomes, including comparisons to baseline and reference conditions.
- C. Wetlands Enhancement at Piermont Marsh - To be completed *within seven years of the effective date of Permit*.
- i. The Permittee must design and after receiving the Department's approval implement a plan to enhance and restore Piermont Marsh that will reduce invasive species (primarily *Phragmites*), restore the hydrologic connection of an oxbow in Crumkill Creek, enhance the quality of Sparkill Creek stormwater entering the marsh, and assess the feasibility of restoring historic wetlands. Annual progress reports will be provided to the Department, and a final report will be provided within six months of completion.



- ii. *Phragmites* control will be implemented on approximately 200 acres through application of herbicide or other means with the goal, where practically achievable, of complete eradication from 90% of the project area while minimizing damages to native vegetation. Maintenance spraying will be performed over a five-year period as needed.
  - iii. The oxbow in Crumkill Creek in the central area will be restored along with historic flow regimes of the creek channel by the one-time placement of a small amount of fill in the existing by-pass, diverting flow into the historic oxbow.
  - iv. The Permittee shall design and implement a green infrastructure project intended to improve the quality of stormwater entering Sparkill Creek, and will monitor this project for a period to be decided between the Department and Permittee.
  - v. The Permittee will assess the feasibility of restoring historic wetlands in an area at the northern end of Piermont Marsh through removal of landfill materials and restoration of the native marsh community. As part of the assessment, the Permittee will conduct baseline studies of existing plant and animal communities, sample and analyze sediment contaminants in the former landfill area, and determine the costs of landfill material and sediment removal and disposal.
  - vi. The Permittee will prepare annual monitoring/progress reports and within six months of project completion submit a final report documenting the restoration process, interim conditions and outcomes, final conditions and outcomes, and recommendations for ongoing management and future restoration projects.
- D. Supplemental Habitat Replacement or Enhancement: - *Within one year of the effective date of this Permit*, and after consultation with the Department, the Permittee will submit to the Department for its review and approval a plan for supplemental compensatory mitigation projects which have a total capital cost of \$2 million. Permittee shall implement the projects *within seven years of approval of the supplemental mitigation plan*.

## PERMIT CONDITIONS

### PROJECT PLANS

1. The Pile Load Testing Program, also known as the Pile Installation Demonstration Program 2 (PIDP 2), in Authorized Activity item 1, above, must be conducted in substantial conformity with the program description and drawings provided in a December 28, 2012 letter from Elizabeth Novak of NYSTA to John Ferguson of this Department as supplemented by a letter submitted on her behalf





dated March 21, 2103. At least 30 days before starting the Pile Load Testing Program the Permittee must give the Department a current program description and drawings showing the work to be done.

2. The dredging, pile driving, pile caps, piers, armoring and other support structures and project components in Authorized Activity item 2, above, must be conducted in substantial conformity with the project description and drawings provided in a January 3, 2012 letter from Elizabeth Novak of NYSTA to John Ferguson of this Department.
3. The Permittee must notify the Department of material alterations to any Authorized Activity before starting that Activity.

### ENVIRONMENTAL COMPLIANCE MONITOR

4. The Permittee will retain an independent Oversight Environmental Compliance Monitor (OECM) for the duration of Authorized Activity and six months thereafter. The OECM will perform the following duties:
  - A. Be present on-site during all Authorized Activity.
  - B. Observing and inspecting the Authorized Activity.
  - C. Reporting to the Department on a weekly basis (or another frequency to be approved by the Department) regarding compliance with this Permit and its terms, requirements, and conditions; and with the New York State Environmental Conservation Law (NYSECL) and its implementing regulations, where applicable and appropriate.
  - D. Reporting noncompliance with the Permit or the NYSECL and implementing regulations immediately to the Department, but no later than 12 hours after observation.
5. At least 30 days before starting the work described in Authorized Activity item 2 above the Permittee must provide the Department with an Environmental Compliance Plan for implementation of this requirement, including the following information:
  - A. The procedures established to ensure compliance with the Permit and the applicable NYS Environmental Conservation Law and implementing regulations.
  - B. The personnel responsible for compliance with this condition, including:
    - (1) Names, titles and responsibilities, training, years of relevant experience, licensing and applicable training;
    - (2) Organization structure, including specific names, duties and responsibilities.



- C. Environmental compliance tracking and reporting procedures, including
- (1) Process meetings and reporting requirements, including the purpose and frequency of reports;
  - (2) Environmental compliance schedule;
  - (3) Method of reporting to the Department non-compliance with permit conditions and NYS Environmental Conservation Law;
  - (4) QA/QC procedures for environmental compliance.
6. The work identified in Authorized Activity item 2 above may start when the Department has given written approval of the Environmental Compliance Plan.

### TEMPORARY AND PERMANENT PLATFORMS AND BULKHEAD

7. At least 30 days before work begins on the construction of temporary or permanent platforms, or bulkheads, the Permittee must submit final plans for same to the Department. The plans must specify the number, location and diameter of all piles supporting the platforms and piers to be installed in the Hudson River; and the dimensions and height above mean low water of the deck of each platform.

### PILE DRIVING

8. The results of sound attenuation tests conducted during the 2012 Pile Installation Demonstration Program (PIDP); and any additional test results from underwater sound attenuation studies during the 2013 PIDP2 will be used to determine the most effective underwater sound attenuation system. An underwater sound attenuation system or systems must be deployed during driving of steel piles four feet and larger in diameter to minimize to the maximum extent practicable the effects of underwater sound upon fishes in the Hudson River.
9. At least 30 days before starting installation of permanent piles four feet in diameter or more within each specific in-river design unit (as identified in the March 21, 2013 letter) the Permittee must give the Department design plans and operational specifications for the underwater sound attenuation system for that design unit. Except for piles installed during the 2013 PIDP2, installation of piles four feet and larger in diameter may begin when the Department has given written approval of the underwater sound attenuation system for each in-river design unit.. Upon Department approval the final sound attenuation plan will be posted on the project website maintained by the Permittee.
10. The underwater sound attenuation system may be incorporated into falsework structures and the containment boom required by Condition 15, below.





11. The underwater sound attenuation system must include monitoring of underwater sound during installation of piles four feet in diameter or more, and must verify that the system is deployed and operating in accordance with design specifications.
12. Pile driving may be conducted from 7AM to 7PM only.
13. Vibratory pile drivers shall be used to the maximum extent practicable.
14. At all times during pile driving an acoustic corridor will be maintained, having a total length of at least one mile across the Hudson River, running east to west, within which impact pile driving is prohibited. This corridor must be continuous for 1500 feet at all times. Within the corridor the sound level from pile driving must be less than 187 dB re  $1\mu\text{Pa}^2\text{s}$  cSEL criterion at all times.
15. A floating containment boom shall be deployed around the pile and false work structures when work is being conducted.
16. Water from pile and cofferdam dewatering installations may cause no increase in turbidity that results in a substantial visible contrast to the Hudson River outside the piling or cofferdam. As described in the Final Environmental Impact Statement the discharge must be treated if necessary to prevent such substantial visible contrast.
17. Cofferdams must be backfilled using clean material; no excavated sediment may be placed in the River or the cofferdam.

### CONCRETE PRODUCTION, DELIVERY & PLACEMENT

18. At least 45 days before concrete is to be used for the Authorized Activity the Permittee must submit plans and descriptions of the means of concrete production, delivery and placement. Discharge of concrete and concrete leachate is prohibited. In-water concrete production, delivery and placement, and actions preliminary to same, may start when the Department has given written approval of these plans. The Permit authorizes no withdrawal of water from the Hudson River that may require a permit from the Department pursuant to 6 NYCRR Part 601.

### DREDGING

19. At least 45 days before dredging begins in any year the Permittee must submit to the Department a Dredging Plan verifying conformity with the conditions (20-35) of the permit in this Dredging section. The plan must include starting and ending dates and dredging locations. .
20. Dredging may be conducted from August 1 to November 1, only, in any calendar year.



21. This Permit authorizes no upland handling, transferring, storage, disposing or placing of dredged materials in New York State; any such activity will require approvals from the Department before dredging begins.
22. Barge overflow is prohibited.
23. Dredging must be conducted using a closed clamshell dredge. Drawings and specifications of the closed clamshell bucket and other dredging equipment, including specifications demonstrating that appropriate design considerations are incorporated in the equipment, must be provided to the Department at least 45 days before dredging related activities start.
24. The bucket must be lifted in a continuous motion through the water column and into the barge. Bucket decanting and loss of dredged material into the River during barge loading will be minimized to the maximum extent practicable.
25. Dredging equipment must be operated in a manner that minimizes the resuspension of sediments in the Hudson River. Dredging operations may not cause turbidity that results in a substantial visible contrast to the Hudson River outside of the 500 foot mixing zone as set forth in the Water Quality Monitoring section below.
26. Best management practices include lowering the bucket to the level of the barge gunwales prior to release of the load and placing the dredged material in the barge in a controlled manner. Excessive loss of material from the bucket should be investigated and repaired. Bucket retrieval rates will be controlled to minimize turbidity.
27. If decanting of barges is necessary, a detailed plan must be submitted to the Department for review and approval before decanting may start.

The following will apply if dewatering is approved by the Department:

- A. The overlying water in the barge may be pumped to the water column after 24 hours of settling.
- B. Decanting of the barge shall be conducted in a manner that precludes adding substantial suspended solids, turbidity or sheens to the receiving water body. During pumping of the decant water, great care shall be taken to avoid re-suspending or pumping previously settled sediment.
- C. A flocculent may be added to enhance settling. If a flocculent is proposed to be used, the form "Water Treatment Chemical Usage Notification Requirements for SPDES Permittee" must be submitted and approved by DEC prior to its use.
- D. Decanting activities may not cause turbidity that results in a substantial visible contrast to the Hudson River outside of the 500 foot mixing zone as set forth in the Water Quality Monitoring section below. In the event that this requirement is exceeded, the Department





will be notified and an evaluation of the adequacy of the holding time and/or the need to add a flocculant to aid in settling shall be undertaken by the Permittee.

28. All side slopes of the dredged channel will have a maximum 1:3 slope.
29. The Permittee will monitor the sedimentation rate within Piermont Marsh, prior to and during dredging operations. A plan detailing the procedures the Permittee will employ for this task must be submitted to the Department no less than 60 days before dredging starts.
30. All sediment transporting barges must be inspected and certified as properly sealed.
31. Loss of material during transport is prohibited.
32. If material is transferred between barges, measures must be implemented to minimize the potential for discharge to the river, as described in the FEIS.
33. Sidecasting of dredged sediment is prohibited.
34. By January 30 following every calendar year in which dredging has occurred the Permittee must submit to the Department a Dredging Report specifying the location and amount of sediments dredged and deposited either uplands or at the HARS.
35. The top three feet of East Sediment Mound #3 near the existing bridge must be removed.

### ARMORING

36. At least 45 days before dredging starts the Permittee must submit to the Department an armoring plan that describes the source and size of the armoring materials and layering/placement methods. Armoring may begin when the Department has given written approval of the armoring plan.
37. Armoring material must be placed using methods designed to minimize resuspension of newly-exposed sediment (as described in the FEIS). Armoring activities may not cause turbidity that results in a substantial visible contrast to the Hudson River outside of the 500 foot mixing zone as set forth in the Water Quality Monitoring section below.
38. The total depth of armoring deposited in the excavated access channel will be no more than two feet.
39. Stone and sand may be placed only in the dredged access channel and its side slopes.



## FISH MONITORING

40. *As soon as possible, but no more than 60 days after the effective date of this Permit, and before installation of permanent piles four feet or more in diameter the Permittee must submit to the Department a plan for monitoring the movement of shortnose and Atlantic sturgeon in the vicinity of the Tappan Zee Bridge.*

The plan will include at minimum the following components:

- A. *As soon as possible, but no more than 60 days after the effective date of this Permit, and before starting installation of permanent piles four feet or more in diameter, and prior to the commencement of dredging, the Permittee will have in place an operational-capable array of stationary receivers capable of detecting sonic tags in the vicinity of any Authorized Activities. These receivers may include those currently used by the NYSDEC (LOTEK MAP, and LOTEK dual mode) and those used by other coastal researchers (VEMCO).*

Receivers must be range tested in the field and placed in such a way that fish in the vicinity of the bridge and the construction zone north of the existing bridge, can be detected by at least three receivers.

Data downloads shall occur every 60 days at minimum including GPS coordinates of each receiver location to verify the location of each remote receiver. Following each data download, a report shall be submitted with data files, and a summary of fish present and /or moving through the construction zone.

41. The Permittee must survey the project area (River Mile 27) daily during driving of permanent piles and dredging for the purpose of locating stunned or dead fish. An Standard Operating Procedure (SOP) detailing the procedures for this survey must be submitted to the Department for approval as soon as practicable, but at least 30 days before starting dredging or installation of permanent piles four feet or more in diameter.
42. All live stunned or injured sturgeon shall be placed in a holding tank onboard a survey vessel and transported outside the area ensonified by pile driving. The sturgeon shall be measured for total length, identified to species, examined for a Passive Integrated Transponder (PIT) tag, and if untagged, the sturgeon will be marked with a PIT tag applied in the flesh below the base of the dorsal fin (left side), then released. Application of the PIT tag will follow the procedures as outlined in the NMFS protocol.
43. Necropsies shall be performed on any dead sturgeon collected. After completion of the necropsy all dead sturgeon must be placed on ice and held for delivery to the Department. After collection of a dead Shortnose or Atlantic sturgeon the Permittee shall contact the Department's Hudson River Fisheries Unit Leader during the following DEC work day for delivery procedures.





44. *Within 90 days of the effective date of this Permit*, the Permittee must submit detailed procedures for the necropsies, which identifies the contractor that will perform the necropsies and the location of the laboratory where the necropsies will be performed.

### BRIDGE DEMOLITION

45. At least 45 days before any in-water demolition-related work begins the Permittee must submit a plan to the Department providing details of all in-water demolition-related work including, among other things, a detailed plan for any dredging, cofferdams, or silt curtains. The plan will demonstrate conformity with all special conditions (45-51) in this Bridge Demolition Section. .
46. Bridge demolition must be conducted in a manner that minimizes the resuspension of sediment.
47. All debris and materials from the demolition of the existing Tappan Zee Bridge must be removed from the bed and banks of the Hudson River.
48. Piles, caissons, abutments, fenders and other in-water components of the existing Tappan Zee Bridge must be removed to two feet below the mud line. Silt curtains must be deployed during this operation.
49. A floating containment booms and/or silt curtains must be deployed around all active substructure demolition areas to control and contain debris and discharges to meet water quality standards.
50. A debris containment net must be deployed and maintained at all times during demolition of the bridge deck and superstructure.
51. Blasting for bridge demolition is prohibited.

### POST-CONSTRUCTION

52. Within one year of completion of the Authorized Activity, and again at two years and five years after completion of the Authorized Activity, the Permittee must submit a bottom hydrographic survey report of the dredged area to the Department. For comparison purposes, a pre-construction bottom hydrographic survey of the same area must be provided with the first post-construction survey
53. Within one year of completion of the Authorized Activity, and again at years two and five after completion of the Authorized Activities a benthic invertebrate survey must be conducted at the dredged area, and a report and data submitted to the Department. For comparison purposes a pre-construction survey must be provided with the first post-construction survey.



54. Within 60 days of completion of bridge demolition, a hydrographic survey of the river bottom beneath the footprint of the demolished bridge must be submitted to the Department. For comparison purposes a pre-demolition survey must be provided with the post-construction survey.

### PEREGRINE FALCON

55. The Permittee must minimize disturbance to Peregrine Falcons during all phases of the bridge replacement project. All activities must maintain the maximum distance from the peregrine falcon nest on the existing bridge as practical. No less than 30 days before starting the Authorized Activity the Permittee must submit a plan for protection of the falcon nest to the Department.
56. Any upland blasting must be approved in writing by the Department and must avoid impacts to nesting peregrine falcons.
57. The Permittee must evaluate Peregrine Falcon nesting activity during each year of construction and demolition to determine if a pair is active on the territory, are nesting, and the success of that nest. Any reports of impacts to the nest should be reported to the Wildlife Manager at the NYS DEC Region 3 Headquarters in New Paltz, NY.
58. A Peregrine Falcon nest box must be installed on the new bridge between September 1 and January 31 in any calendar year, when construction is finished and before demolition of the old bridge. The design and location of the nest box on the new structure must be approved by the Department.

### WATER QUALITY MONITORING

59. No less than 45 days before starting dredging activities; decanting activities; removal of large debris fields; pile driving in zone C; channel armoring; cofferdam construction; removal of the existing bridge; or any activity that may cause resuspension of bottom sediments, Permittee must submit a water quality monitoring plan to the Department. If activities occur concurrently in multiple locations, each activity that may cause resuspension of bottom sediments must be monitored separately. The Plan must be in effect at all times during these activities. The above activities may start when the Department has given written approval of the plan.
60. The plan shall include monitoring for total suspended solids (TSS), turbidity (visual monitoring) and the following contaminants: total mercury, dissolved nickel, copper, lead, zinc, PCB and naphthalene and benzo(a)pyrene. The plan must: (i) describe procedures for background sampling, and sampling at the edge of a 500-foot mixing zone around the activities identified in condition 59, above (ii) include daily sampling during each tidal cycle; (iii) use an Acoustic Doppler Current Profiler to locate the plume; (iii) require whole water samples in the vertical water column (from at least 3 depths) along a transect within the plume; and (iv) include upstream transect. When silt





curtains are deployed, monitoring should take place immediately outside the confines of the silt curtain.

61. The following Water Quality Standards must be achieved immediately outside of the silt curtain or at the edge of the 500-foot mixing zone around the activities identified in condition 59, above, subject to the monitoring requirements of condition 64 below. When a Detection Limit listed below is greater than the listed Water Quality Standard, the Water Quality Standard will be presumed to be met when analytical results demonstrate compliance with the Detection Limit.

Where background concentrations exceed the Water Quality Standard, the limit at the edge of the mixing zone is 30% over background, with the exception of TSS which shall be 100 mg/l above ambient..

Contaminant	Water Quality Standard (ppb)	Detection Limit * (ppb)
Total Mercury	0.0007 – H(FC)	0.050
Dissolved nickel	8.2 – A(C)	
Dissolved copper	3.4 – A(C)	
Dissolved lead	8.0 – A(C)	
Dissolved zinc	66 – A(C)	
PCB	1.0x10 <sup>6</sup>	
Aroclor 1242		0.2
Aroclor 1248		0.2
Aroclor 1254		0.2
Aroclor 1260		0.2
Naphthalene	16	
Benzo(a)pyrene	0.0006	0.1
TSS	None from sewage, industrial waste or other wastes that will cause deposition or impair the waters for their best usages.	100 mg/l above ambient <sup>1</sup>
* Using EPA analytical method with the lowest possible detection limit as promulgated under 40CFR Part 136.		

62. All analytical results must be sent to DEC by fax or email within 48 hours of receipt of data results, followed by a mailed hard copy. Exceedances should be highlighted.





63. In the event of exceedance of a water quality standard, the Department will be notified and the Permittee and the Department will determine if there is a need for procedural changes.
64. Water quality monitoring must be conducted daily at the start of each activity identified in condition 59, above. If there are no water quality exceedances during the first two weeks of an in-river Authorized Activity water quality monitoring for contaminants for that activity may be reduced. Daily TSS and turbidity monitoring must continue through the duration of the in-river operation. If during the reduced sampling, there is an exceedance of 100 ppm above ambient TSS value, monitoring shall return to daily for all parameters until such time as TSS concentrations are less than 100 ppm above ambient values.
65. Three copies of a monitoring report, summarizing the results of the monitoring and analyses, shall be submitted to the Department within 30 days of completion of the in-river Authorized Activity in any calendar year.
66. All laboratory analyses required by this permit must be conducted by a laboratory certified by the New York State Department of Health.
67. Nothing contained in this Permit shall be construed as authorizing a violation of Water Quality Standards.

### ROCK DRILLING DEWATERING CONDITIONS

68. All decant water-holding scows must be water tight and of solid hull construction.
69. Decant water must be discharged within the confines of the silt curtain containment area surrounding the rock drilling operation.
70. All decant water must be held in the decant-holding scow for a minimum of 24 hours.
71. During pumping of the decant water from the holding scow, care shall be taken to avoid re-suspending or pumping sediment which has previously settled in the scow.
72. Discharge of decant water into the silt curtain containment area shall not cause turbidity that results in a substantial visible contrast to the Hudson River as set forth in the Water Quality Monitoring section above. In the event this requirement is exceeded, the Department will be notified and an evaluation of the adequacy of the holding time and/or the need to add a flocculent to aid in settling of solids in the scow shall be undertaken by the Permittee. Addition of a flocculent requires Department approval and the completion of the form "Water Treatment Chemical (WTC) Usage Notification Requirements for SPDES Permittee".



**GENERAL CONDITIONS – APPLICABLE TO ALL PERMITS**

**73. FACILITY INSPECTION BY THE DEPARTMENT**

The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department to determine Permittee's compliance with this permit and the Environmental Conservation Law. Such representative may order work suspended pursuant to ECL 71-0301 and SAPA 401(3).

When requested, a Permittee representative must accompany the Department's representative during project inspection.

A copy of this permit, including all referenced maps, plans, and drawings must be available for inspection by the Department at all times at the project site. Failure to provide a copy of the permit at the request of a Department representative is a violation of this permit.

**74. RELATIONSHIP OF PERMIT TO DEPARTMENT ORDERS AND DETERMINATIONS**

Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

**75. APPLICATIONS FOR PERMIT RENEWALS OR MODIFICATIONS**

The Permittee must submit a written application to the Department for renewal or modification of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing. Requests for permit renewal or modification must be submitted to:

REGIONAL PERMIT ADMINISTRATOR  
NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
DIVISION OF ENVIRONMENTAL PERMITS  
21 SOUTH PUTT CORNERS ROAD  
NEW PALTZ, NY 12561

**76. APPROVED PLANS BECOME ENFORCEABLE PERMIT CONDITIONS**

Upon Department approval of plans required pursuant to this Permit, the terms; conditions; schedule and other requirements in final approved plan shall become an enforceable condition of this Permit.

**77. RENEWAL APPLICATION DEADLINES**

A renewal application must be submitted no less than 30 calendar days before the permit expiration date for all the permit types.





## 78. PERMIT MODIFICATIONS, SUSPENSIONS AND REVOCATIONS

The Department reserves the right to modify, suspend or revoke this permit. The grounds for modification, suspension or revocation include:

- a. Materially false or inaccurate statements in the permit application or supporting documentation.
- b. Failure by the Permittee to comply with any terms or conditions of the permit.
- c. Exceeding the scope of the project as described in the permit application.
- d. Newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the permit.
- e. Noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

## NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

### ITEM A: PERMITTEE ACCEPTS LEGAL RESPONSIBILITY AND AGREES TO INDEMNIFICATION

The Permittee, excepting state or federal agencies, expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the Permittee's acts or omissions in connection with the Permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under Article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

### ITEM B: PERMITTEE'S CONTRACTORS MUST COMPLY WITH PERMIT

The Permittee is responsible for informing its contractors, employees, agents and assigns of their responsibility to comply with this permit, including all conditions, while acting as the Permittee's agent with respect to permitted activities. Said parties are subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the Permittee.

### ITEM C: PERMITTEE RESPONSIBLE FOR OBTAINING OTHER REQUIRED PERMITS

The Permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way necessary to carry out the activities authorized by this permit.





**ITEM D: NO RIGHT TO TRESPASS OR INTERFERE WITH RIPARIAN RIGHTS**

This permit conveys no right to the Permittee to trespass upon the lands of, or interfere with the riparian rights of others. It authorizes no impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.