



Joe Martens
Commissioner

THE NEW NY BRIDGE

STATE ENVIRONMENTAL QUALITY REVIEW ACT STATEMENT OF FINDINGS

Pursuant to Article 8 of the New York Environmental Conservation Law (State Environmental Quality Review Act - SEQRA) and its implementing regulations at 6 NYCRR Part 617, the New York State Department of Environmental Conservation hereby renders its findings for the project known as The New NY Bridge.

Name of Action

The New NY Bridge

Description & Location of Action

The New NY Bridge will replace the existing Tappan Zee Bridge and will consist of two new bridge structures across the Hudson River between the Village of South Nyack, Rockland County, and the Village of Tarrytown, Westchester County, New York.

The two new bridge structures will be located north of the existing Tappan Zee Bridge and will meet the existing New York State Thruway right-of-way east of South Broadway in South Nyack and west of South Broadway in Tarrytown. The project is described in Chapter 2, "Project Alternatives" of the July 2012 Final Environmental Impact Statement. The selected design is described in the December 2012 Re-evaluation Statement.

Agency Jurisdiction

Construction of some project components in the Hudson River requires the Department's approval pursuant to the New York State Environmental Conservation Law Article 11 (Endangered/Threatened Species) and Article 25 (Tidal Wetlands). In addition the project requires a Water Quality Certificate issued by the Department pursuant to Section 401 of the Clean Water Act (US Public Law 95-217). The project components subject to DEC jurisdiction are as follows:

- 1.** Implementation of a Pile Load Testing Program, including the installation and removal (to below the mudline) of 15 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:

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- 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 in-water pile-supported support piers, and
 - Installation of 150 linear feet of steel sheet pile bulkhead.
3. Demolition and removal of the existing Tappan Zee Bridge from the bed and banks of the Hudson River.
 4. Incidental Take, as defined in 6NYCRR Part 182.2(j), involving potential physiological effects to Atlantic sturgeon, shortnose sturgeon, including potentially lethal injury to two Atlantic and two shortnose sturgeon.

The New York State Department of Transportation (NYSDOT) and the New York State Thruway Authority (NYSTA) submitted an application to the Department of Environmental Conservation (DEC) for permits and Section 401 Water Quality Certification. NYSTA would be the permittee.

Final Environmental Impact Statement

The Final Environmental Impact Statement (FEIS) was prepared in accordance with the National Environmental Policy Act (NEPA) and the New York State Environmental Quality Review Act (SEQRA). The Federal Highway Administration (FHWA) is the federal lead agency and the NYSDOT and NYSTA are joint lead agencies. The FEIS was signed by the FHWA on July 25, 2012 and was published in the Federal Register on August 3, 2012. The lead agencies issued a Joint Record of Decision and SEQR Findings Statement (Joint ROD and Findings Statement) on September 25, 2012.

Subsequent to the issuance of the Joint ROD and Findings Statement, NYSTA selected a design build contractor. A project Re-evaluation Statement was prepared in December 2012 and NYSTA issued an amended SEQR Findings Statement for the selected bridge design on December 17, 2012. Unless otherwise stated herein, the Department adopts the September 25, 2012 SEQR findings and December 17, 2012 amended SEQR findings of the lead state agencies.

Facts and Conclusions Relied Upon to Support the Decision

1. Documents Reviewed

The Department has reviewed the following documents:

- the joint Permit Application and supporting documentation (March 26, 2012);
- the Incidental Take Permit Application (April 2012);
- the Draft Environmental Impact Statement (March 2012);
- request for confirmation that State Implementation Plan will be amended to be

consistent with air pollution conformity analysis (May 15, 2012):

- the Biological Opinion (BO) issued by the National Marine Fisheries Service (NMFS) (June 2012);
- the letter from the Applicant to the Department addressing Department comments on the application (June 25, 2012);
- reports concerning Pile Driving Demonstration Project (July 7, 2012 and August 1, 2012);
- the FEIS, including the lead agencies' responses to the Department's comments on the DEIS (July 2012);
- the Joint Record of Decision and State Environmental Quality Review Act Findings Statement (September 25, 2012);
- memoranda from the Applicant's fish biology experts regarding the impacts of pile driving on sturgeon and the results of the 2012 Pile Installation Demonstration Program (August 26, 2012; September 5, 2012 and November 20, 2012);
- the Re-evaluation Statement (December 2012);
- the amended Findings Statement of NYSTA (December 2012);
- supplemental project information (December 17, 2012);
- supplemental project information (January 3, 2013);
- all public comments received on the permit application; and
- the Applicant's responses to public comments received on the permit application, including the Revised Water Quality Assessment of Donald Hayes, PhD (March 2013) and the March 21, 2013 letter with attachments concerning PIDP2 from Elizabeth Novak.

2. Purpose and Need for the Project

The FEIS analyzed the social and economic benefits which would be derived from the proposed replacement of the Tappan Zee Bridge and found that:

- the Tappan Zee Bridge provides the only interstate highway crossing of the Hudson River for the 48-mile stretch between the George Washington Bridge (Interstate 95) and the Newburgh-Beacon Bridge (Interstate 84);
- the existing bridge is the key transportation link between population and employment centers in Rockland and Westchester counties;
- the bridge carries approximately 134,000 vehicles per day with peak traffic reaching 170,000 vehicles per day;
- an extensive and costly maintenance and capital program is required to keep the Tappan Zee Bridge in good working order and even with these efforts the existing structure does not satisfy current bridge and highway standards for essential features such as lane and shoulder widths, and
- the existing structure lacks structural and service redundancy and does not allow for multi-modal travel.

The FEIS concluded that replacing the existing bridge will provide significant social and economic benefits by: (i) ensuring long-term viability of a Hudson River crossing connecting

Interstate 287 in Rockland and Westchester counties; (ii) improving transportation operations, security and safety, and (iii) maximizing public investment in a new river crossing.

3. Alternatives and the Selected Design

FHWA, NYSTA and NYSDOT considered five project alternatives: No Build; Replacement Bridge; Rehabilitation; Tunnel and Single Structure. The Rehabilitation; Tunnel and Single Structure alternatives did not meet the project's goals and objectives. Accordingly, the FEIS analyzed two alternatives: No Build and Replacement Bridge. The No Build Alternative would involve the continued operation of the existing seven-lane bridge with ongoing maintenance and measures necessary to keep the bridge in a state of good repair. The Replacement Bridge Alternative envisioned replacing the existing Tappan Zee Bridge with two new structures (one each for eastbound and westbound traffic) to the north of its existing location.

On September 25, 2012, the Federal Highway Administration, NYSTA and NYSDOT issued a Joint Record of Decision and Findings Statement pursuant to NEPA and SEQRA. FHWA, NYSDOT and NYSTA selected the Replacement Bridge Alternative. The Joint ROD and Findings Statement concluded that the replacement bridge alternative avoids or minimizes environmental impacts to the maximum extent practicable.

The New NY Bridge was developed using a design/build process. A design build firm was selected on or about December 16, 2012, after issuance of the Joint ROD and SEQRA Findings Statement. Therefore, the applicants prepared a Re-Evaluation Statement based upon the selected design. The Re-Evaluation Statement presents the selected design and considers changes in the assessed impacts based upon the selected design. The Re-Evaluation Statement determined that the selected design would not significantly impact the environment in a way that was not previously considered and that the FEIS and ROD remained valid.

4. Environmental Impacts

Dredging/Armoring Impact

The project's construction would temporarily affect benthic habitat and organisms, due to dredging and armoring for the construction access channel. Approximately 951,000 cubic yards of sediment will be dredged over approximately 139 acres of the Hudson River bottom area. 107 acres of dredged river bottom will be armored with up to two feet of sand and stone. The FEIS determined that soft sediment would be deposited over the armoring and that benthic organisms would quickly re-colonize the dredged area. The Department concurs that benthic habitat and organisms will recover from dredging. However, the Department concluded that the scope and duration of the potential impact to benthic habitat warranted mitigation. While the FEIS and BO did not identify adverse impacts to benthic habitat, it was nonetheless agreed that mitigation would be provided to address adverse impacts identified by the Department.

The FEIS concluded that dredging is necessary to allow access for construction barges, while armoring is necessary to reduce resuspension of sediment and potential water quality impacts related to propeller scour. The FEIS also determined that there was no alternative to the

dredging and armoring associated with the project's construction and the Department concurs. Thus any impacts associated with these activities are unavoidable. To mitigate the impact of dredging, the DEC's permit requires a comprehensive suite of mitigation measures.

Oyster Habitat/Colony

The project's dredging will result in the permanent loss of up to 8 acres of oyster habitat. The FEIS concludes that the dredging is necessary to allow access to construction barges; accordingly, the loss of oyster habitat is an unavoidable adverse impact. The Department concurs. To mitigate the loss of oyster habitat, the project sponsors will restore 13 acres of hard bottom/shell oyster habitat in the immediate vicinity of the existing bridge, and oysters will be reintroduced to the habitat.

Potential Impacts to Peregrine Falcon

Peregrine falcons, a New York State-endangered species, nest in nest boxes on the existing Tappan Zee Bridge. When the new bridge is completed and before the existing bridge is demolished, the peregrine falcon nest boxes on the existing bridge would be relocated to the replacement bridge to provide an alternative nest site for the resident pair of peregrine falcons. The nest box will be relocated outside of the nesting season. Measures to be implemented in the event that relocation of the nest box could potentially interfere with the breeding season would be developed in consultation with the Department. The FEIS concluded that, taking into account the planned relocation plan, there would be no adverse impact to peregrine falcons. The Department concurs.

Impacts to Atlantic and Shortnose Sturgeon from Dredging

The loss of habitat resulting from the dredging will impact Atlantic and shortnose sturgeon that use the dredged area. These impacts would be a function of a localized reduction in benthic fauna available as forage to the sturgeon. Relying on a June 22, 2012 National Marine Fisheries Services' (NMFS) Biological Opinion (BO) the FEIS concludes that the access channel habitat loss is a small portion of similar habitat throughout the Hudson River in the Tappan Zee region and thus is unlikely to reduce substantially foraging opportunities for the river's sturgeon population. This conclusion also applies to other benthic fish species that forage in soft sediments. The Department concluded that as a result of the scope and duration of the dredging impacts additional actions were necessary to achieve a net conservation benefit and to otherwise comply with the "Conservation Recommendations" in NMFS's BO. These additional actions are summarized below in Section 7.

Potential Impacts to Atlantic and Shortnose Sturgeon from Installing Piles

Construction of the bridge will require installation of 931 piles (including 15 piles installed during a geotechnical investigation which would be cut at or below the mud line). The permanent piles would include 724 4-foot diameter piles and 192 6-foot diameter piles. Piles will be installed through a combination of vibratory techniques and hammering. The FEIS surveyed the available scientific literature and concluded that vibrating piles into place would not have a significant adverse impact upon sturgeon; NMFS' BO concurred with that conclusion.

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The Department concurs with the conclusion that vibrating piles into place will not have a significant adverse impact upon sturgeon.

The piles required for the bridge cannot be fully installed to their required depths using vibratory methods. Hammering will be necessary. Hammering generates percussive sounds when the hammer of the pile driver strikes the surface of the pile. These sounds have the potential to impact fish by altering behavior or causing physical injury. The FEIS and supporting materials, including NMFS' BO; the December 2012 Re-evaluation Statement, and the Applicant's fish biology experts, concluded that Peak Sound Pressure Levels were the most appropriate criteria to predict potential effects of pile driving on fish. Based upon this determination NMFS calculated the potential incidental take of sturgeon and concluded that although individual fish may be injured the project would not jeopardize any species or distinct population of sturgeon. The FEIS concludes that project construction "may adversely affect but is not likely to jeopardize the continued existence of shortnose sturgeon or any [distinct population segment] DPS of Atlantic sturgeon."

The Department concurs that the analysis of incidental take should be based upon Peak Sound Pressure Levels and that although individual fish may be injured the project would not jeopardize any species or distinct population segment of sturgeon. Nevertheless, to address the potential impact of pile driving on sturgeon the DEC's permit requires a comprehensive suite of measures intended to ensure that the project achieves a net conservation benefit. These requirements are described in Section 7 below.

Tidal Wetlands

The DEC-mapped tidal wetlands in the project area include littoral zone with some intertidal wetlands along both the Westchester County and Rockland County shorelines. One mapped intertidal wetland is also present just south of the project area on the east side of the river. The limit of DEC's tidal wetland jurisdiction is the south side of the existing bridge; no are no mapped DEC tidal wetlands north of the existing bridge. No vegetated intertidal wetlands under the jurisdiction of DEC are present in the project area.

As set forth in the Re-evaluation Statement, the project would result in potential impacts to approximately 0.02 acres of littoral zone tidal wetlands. During the approximately 5.25 years of construction there would also be temporary shading of 1.15 acres of littoral zone wetlands due to temporary work platforms constructed for the duration of the construction. Shading associated with this temporary coverage would reduce the ecological value of this littoral zone during the approximately 5.25 years of active construction. The FEIS, as amended by the Re-evaluation Statement, predicts once the temporary platforms are removed, pre-construction light levels will be re-established. As a result, areas subjected to shading are expected to be quickly re-colonized and recover to pre-construction conditions. The FEIS concluded that there would be no adverse impact to tidal wetlands.

The Department finds that the loss of wetlands due to construction is reasonable and necessary

for the reconstruction of the bridge. The design of the bridge constitutes a reasonable alternative for minimizing permanent impacts to tidal wetlands, including littoral zone, subject to DEC's jurisdiction. The temporary overwater coverage is reasonable and necessary to ensure safe and efficient construction of the project and has been minimized to the maximum extent practicable. Alternative means and methods -- such as performing construction work from, or deploying equipment and personnel using, barges -- are not reasonably expected to reduce impacts to tidal wetlands. Moreover, the overall reduction in permanent shading from the new bridge structure (as compared to the present bridge) provides further compensation for impacts associated with temporary overwater shading. The proposed project is compatible with the Department's efforts to preserve and protect tidal wetlands and to prevent their despoliation and destruction because the replacement bridge project, including its temporary construction impacts, will not have an undue adverse impact on the present or potential value of the affected tidal wetland area or adjoining or nearby tidal wetland areas for food production, wildlife habitat, flood and hurricane and storm control, cleansing ecosystems, absorption of silt and organic material, recreation, education, research, or open space and aesthetic appreciation, taking into account the social and economic benefits which may be derived from the proposed activity. To address tidal wetlands and littoral zone impacts, the DEC's permit requires mitigation.

5. Environmental Commitments/Minimizing Adverse Impacts

The FEIS identified adverse impacts on ecological resources which would result from construction of the Replacement Bridge Alternative. To avoid or minimize the potential adverse impacts of construction on ecological resources, FHWA, NYSDOT and NYSTA developed an extensive set of Environmental Performance Commitments (EPCs) to be included in relevant contract documents. The complete list of EPC can be found in the Joint ROD and Findings Statement. The following EPCs are especially relevant to the impacts of concern to the Department:

- Dredging operations would be conducted using a clamshell dredge with an environmental bucket;
- No barge overflow will occur;
- Dredging operations would be conducted from August 1 to November 1, in any given year;
- Inspectors approved by the National Marine Fisheries Service will oversee dredging operations, and
- Armoring of the channel would be undertaken to prevent re-suspension of sediment during the movement of construction vessels, installation and removal of cofferdams, and pile driving.

DEC's permit also contains comprehensive requirements for minimizing the environmental effects of construction. These include protective actions such as use of bubble curtains to safeguard fish from acoustic effects of pile driving, seasonal limits on dredging to avoid peak fish migration and spawning, monitoring sturgeon movement during construction, and requiring an independent Environmental Compliance Monitor who will observe the work and

report to DEC.

6. Compensatory Mitigation for Unavoidable Impacts

Except for the permanent loss of oyster habitat due to construction and potential impacts due to shading (based upon the net change between the existing bridge and the replacement structure), the FEIS concluded that the impacts to ecological resources are either so temporary or so minimal that they are not reasonably expected to have a long-term impact. In the Joint ROD and Findings Statement, NYSDOT and NYSTA adopted these conclusions.

DEC also concluded the adverse impacts of the Replacement Bridge alternative related to construction. However, DEC concluded that the temporary construction impacts were of a scale and duration sufficient to be considered significant adverse impacts. As a result, DEC's permit requires a set of mitigative actions that will compensate for the temporary environmental disturbance of construction, including:

- at Gay's Point restoration of a former river channel will be thoroughly analyzed and implemented (if feasible);
- in Piermont Marsh two hundred acres of invasive species will be eradicated;
- in Crumkill Creek hydrologic connection of an oxbow will be restored;
- at Sparkill Creek stormwater entering the marsh will be improved with a green infrastructure project, and historic wetlands restoration will be assessed;
- additional projects aimed at habitat creation and enhancement with a total budget not less than \$2 million to be developed after the permit is issued; and
- thirteen acres of oyster beds will replace the eight acres disturbed during construction.

7. Net Conservation Benefit

The Department's permit requires a suite of actions that will enhance scientific understanding of sturgeon life in the river to provide a net conservation benefit consistent with the required "Conservation Recommendations" in NMFS's BO and which include:

- Mapping of Hudson River shallows to document benthic habitat used by sturgeon; and studying sturgeon foraging habits;
- Sturgeon capture and tagging; tracking of acoustically marked sturgeon (stationary and mobile tracking); (Tagging and mapping efforts will directly support NMFS's recommendation to support studying the distribution of sturgeon throughout different habitat types within the Hudson River, and to support studying the seasonal distribution of sturgeon within the Tappan Zee reach. These studies will support the request from NMFS to aid in the updating of population estimates for both species of sturgeon.);
- Preparation of written material to be used as part of ongoing outreach to reduce impacts of commercial by catch of Atlantic sturgeon in the near shore Atlantic Ocean in support of NYSDEC's efforts to reduce the impact of commercial fishing on protected sturgeon; and
- The tissue of any dead sturgeon removed from the Hudson River during the course of the bridge construction project will be analyzed to determine contaminated loads and thereby supplement the available information about sturgeon foraging habits.

8. Mitigation and Net Conservation Increased While Impacts Decreased

The EPCs, Compensatory Mitigation for Unavoidable Impacts and Net Conservation Benefit requirements discussed above were developed based upon the project design and construction means and methods considered by the FEIS. As confirmed by the Re-evaluation Statement, the selected project design will have reduced adverse environmental impacts including:

- the selected design will not include piles larger than 6 feet in diameter (8 and 10 foot piles will not be used) and will potentially reduce the number of piles from a possible high of 1,326 to 916;
- impacts of existing oyster reefs will be reduced from 13 acres to 8 acres;
- dredging will be limited to six months over two years versus potentially nine months during three years;
- the area to be dredged will be reduced from 173 acres to 139 acres; and
- the total quantity of dredged material removed will be reduced from 1.87 million cubic yards (mcy) to 0.95 mcy.

Despite these reduced impacts described in the Re-evaluation Statement, the EPCs, Compensatory Mitigation and Net Conservation Benefit requirements continue to be based upon the more significant impacts described in the FEIS. Moreover, additional \$2 million in compensatory mitigation funding was added to the total mitigation program in March 2013. Thus, the total mitigation program provides compensation and net conservation in excess of what was initially determined to be sufficient based upon the potential impacts of the project.

Water Quality Certification

The Department has evaluated the water quality impacts associated with this project and all of its applicable rules and guidance concerning the attainment and maintenance of water quality standards. Based on the record of Permit DEC ID 3-0093-00043/00012 to 00014 the Department has concluded that the project would comply with the applicable requirements of §§ 301, 302, 303, 306 and 307 of the Clean Water Act as amended, and applicable New York State water quality standards, limitations, criteria, and other requirements set forth in 6 NYCRR § 608.9(a) and Parts 701 through 704. Accordingly, the project qualifies for a certification pursuant to § 401 of the Clean Water Act (33 U.S.C. § 1341(a)(1)).

Certification

The Department has considered the Draft and Final Environmental Impact Statements, and other documents, described above, and the facts and conclusions disclosed therein. Further, it has weighed and balanced the relevant environmental impacts with social, economic and other considerations.

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Accordingly, this Statement of Findings certifies that:

1. The requirements of 6 NYCRR Part 617 have been met;
2. Consistent with social, economic and other essential considerations, to the maximum extent practicable, adverse environmental effects revealed in the environmental impact statement process (and summarized in Section 4 above) will be minimized or avoided by incorporating as conditions to permits or as regulatory requirements those mitigation measures which were identified as practicable, and;
3. The action is consistent with the applicable policies of Article 42 of the Executive Law, as set forth in 19 NYCRR Part 600.5

/s/

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cc: NYS Department of Transportation
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