

**Appendix F: Ecology**  
F-12 NYSDEC Compensatory Mitigation Letter

# New York State Department of Environmental Conservation

## Office of General Counsel, 14<sup>th</sup> Floor

625 Broadway, Albany, New York 12233-1500

Phone: (518) 402-9185 • Fax: (518) 402-9018

Website: [www.dec.ny.gov](http://www.dec.ny.gov)



Joe Martens  
Commissioner

JUL 03 2012

### Via E-Mail and Regular Mail

David Paget, Esq.  
Sive, Paget & Riesel  
460 Park Avenue  
New York, NY 10022

RE: Tappan Zee Hudson River Crossing – Mitigation Proposal

Dear Mr. Paget:

This letter is intended to memorialize our recent discussions concerning the environmental impact mitigation to be required in connection with construction of the Tappan Zee Hudson River Crossing.

The compensatory mitigation outlined below is in addition to: (i) any compliance monitoring or reporting which is a standard or special condition to any permits governing this project, and (ii) the mandatory Environmental Performance Commitments (EPCs) presented in the Draft Environmental Impact Statement which must be incorporated into the project's final design and contracts.

Although the EPCs minimize and/or avoid certain adverse environmental effects, to fulfill its mandate pursuant to the State Environmental Quality Review Act, and satisfy the Net Conservation Benefit requirement of 6 NYCRR Part 182, the Department has determined that mitigation is required for the impacts associated with the bridge's construction, in particular those resulting from the proposed dredging.

Based upon the information available to us, the applications submitted by your clients, and materials prepared by other resource agencies, the Department has concluded that the following conceptual mitigation plan addresses the unavoidable and significant adverse environmental impacts associated with construction of the Tappan Zee Hudson River Crossing, and achieves a net conservation benefit under Part 182.

#### **I. Compensatory Mitigation for Dredging-Related Impacts to Benthic Community; Tidal Wetlands and Open Water Community.**

##### **A. Oyster Restoration**

- Applicant must create 13 acres of hard bottom/shell oyster habitat;
- Habitat replacement shall occur as soon as possible following construction, and shall take place in the immediate vicinity of the existing bridge (at a location to be approved), and

- Reintroduce oysters to habitat. The Department presumes that utilizing live oysters from the extant reef, collected and maintained during the project's active construction phase and stored in an appropriate location in the vicinity of the project site, will provide the most appropriate brood stock for reintroduction of locally-derived juvenile oysters (spat) and the best opportunity to re-establish the oyster reef (however, the applicants may propose alternative measures).

#### B. Secondary Channel Restoration

- Develop a secondary channel restoration project intended to evaluate the means and methods to increase habitat diversity and function at Gay's Point (Columbia County);
- The applicant shall promptly prepare and expeditiously implement a sampling and analysis regime to assess sediment quality at Gay's Head, and determine the costs of sediment management.
- If the sediments obstructing flow at Gay's Point can be managed without incurring unreasonably excessive costs, the applicant shall design and implement a channel restoration demonstration project intended to document baseline conditions; identify target restoration conditions; design restoration activities and implement restoration;
- The secondary channel restoration plan shall include not less than three years of monitoring to compare pre and post – restoration conditions and preparation of a final report presenting an evaluation of the effectiveness of each element of the restoration program.
- If the initial assessment demonstrates that sediment management costs are likely to be excessive the applicant shall propose and implement an alternative project designed to provide equivalent habitat benefits.

#### C. Wetlands Enhancement – Piermont Marsh

- The applicant shall design and implement a plan to reduce invasive species (primarily *Phragmites*), restore hydrologic conditions and remove fill in the marsh, along the Sparkill Creek; and restore the hydrologic connection of an oxbow in Crumkill Creek;
- *Phragmites* control will be implemented on approximately 200 acres through application of herbicide with the goal of eliminating 90% of the *Phragmites* while avoiding impacts on native vegetation. Annual maintenance spraying will be performed for approximately five years, to prevent return of *Phragmites* and allow native plant communities to recover;

- The oxbow in Crumkill Creek in the central area will be restored along with historic flow regimes of the creek channel by placing a small amount of fill in the existing by-pass, diverting flow into the historic oxbow;
- Applicant shall design and implement a green infrastructure project(s) designed to improve the quality of stormwater entering Sparkill Creek; and
- Restoration of historic wetlands at the northern end of Piermont Marsh. Conduct baseline studies of existing plant and animal communities, study of sediments to be removed and hydrologic studies;

## **II. Net Conservation Benefit**

- Map Hudson River shallows < 4 meters deep to document benthic habitat used by Atlantic and shortnose sturgeon;
- Study sturgeon foraging habits using gastric lavage to obtain gut contents in order to link sturgeons' diet to benthic habitats;
- Capture and tag approximately 30 adult SNS (>500 mm TL); 30 juvenile SNS (300-500 mm TL); 30 pre-migrant juvenile (450 to 1000 mm TL) ATS; and 30 Age-1 (300-450mm TL) ATS. SNS will be captured at overwintering locations near Kingston and Haverstraw Bay in early spring (late March through early April and possibly New York harbor in late fall; Attempts to collect juvenile SNS will also be made during the fall downriver of spawning area which is above Coxsackie. Juvenile ATS will be captured in late winter and early spring in Haverstraw Bay; Age-1 ATS in early fall;
- Acoustically marked fish will be tracked 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: Data indicate a tagged fish can be detected when it passes within 1 km of a stationary receiver. The applicants shall install receivers at intervals within a 50 kilometer (km) stretch encompassing the bridge construction site, to indicate when a fish moves between each section and the duration of time a sonic tagged fish remains within each section of river. Gateway receivers will be placed so that the entire width of the river is covered as follows:
  - G. Washington Bridge to Piermont – One (1) centrally located receiver every 5 km
  - Piermont to Stony Point – three (3) at equally spaced intervals across river every 5 km

- Mobile tracking will determine a more precise location to determine bottom/ 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.
- Produce pamphlet or other appropriate written material to be used as part of ongoing outreach program to reduce impacts of commercial by-catch of Atlantic sturgeon in the near shore Atlantic Ocean.

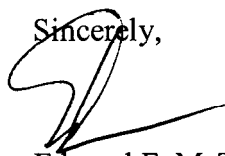
### III. Conditions

- The Department has no objection to use of a third-party to administer the mitigation program and will work with the applicants to identify an acceptable third-party and to develop an appropriate agreement governing this arrangement. However, costs of administrating the mitigation activities; monitoring and/or reporting on the mitigation program shall not diminish the mitigation program or otherwise delay implementation;
- Upon approval of an acceptable third-party, the Department will allow the applicants to pre-fund the mitigation program by irretrievably depositing \$8 million dollars into a trust fund dedicated to these projects (or reasonable substitutes to the extent that any project are determined not to be feasible); and
- The applicants will propose a conceptual mitigation plan, including a proposed monitoring plan and schedule for each major task. The net conservation benefit projects will be addressed in a separate, stand-alone, submission. Upon review and approval by the Department, the conceptual mitigation plan and endangered species implementation plan will be incorporated into the permit(s) for this project.

All the Department's approvals for this project are subject to public review and comment. The Department will carefully consider relevant comments, the result of which may cause changes to the proposed mitigation actions described above. Accordingly, pending a final Department decision, no rights are created concerning the Department's permits and certifications as a result of this letter.

Please feel free to contact me if you wish to discuss this issue further.

Sincerely,



Edward F. McTiernan  
Deputy Counsel

cc: John Ferguson, NYS DEC  
Julie Crocker, NMFS