



Responsiveness Summary
For
Public Comments Received
On the
NEW YORK STATE DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
Permit For The New NY Bridge
(formerly the Tappan Zee Hudson River Crossing Project)
Permit No. 3-9903-00043/00012-00013
Issued Pursuant to Article 15 and Article 11
of the Environmental Conservation Law
and Water Quality Certification (WQC) issued pursuant
to Section 401 of the Federal Clean Water Act, 33 U.S.C. § 1341
March 25, 2013

Response to Comments:

This memorandum summarizes the New York State Department of Environmental Conservation's (DEC or Department) responses to comments on the application and proposed draft permits for activities subject to its jurisdiction for construction of the New NY Bridge to replace the existing Tappan Zee Bridge.

Background

Construction of the replacement bridge requires approval from the Department pursuant to New York State Environmental Conservation Law (ECL) Article 11 (Endangered/Threatened Species) and Article 25 (Tidal Wetlands). In addition, the Department must determine whether a Water Quality Certification (WQC) pursuant to Section 401 of the Federal Clean Water Act, 33 U.S.C. § 1341 may be issued.

On or about March 27, 2012, the New York State Thruway Authority and New York State Department of Transportation filed a Joint Application Form seeking the required permits and WQC. This application has been assigned DEC ID number 3-9903-00043/00012 through 00014. On July 20, 2012, the Department determined that the application was complete. A Notice of Complete Application and Public Hearing appeared in the July 25, 2012 edition of the Department's on-line Environmental Notice Bulletin (ENB). The Notice announced the availability of, and contained a link to, the application materials and a proposed draft permit. No public comments were received at that time. The Department adjourned the public hearings to allow the applicant additional time to work with its contractors.

On January 16, 2013, the Department published in the ENB a Notice of Application and Public Hearing which announced that it would hold a public hearing to receive comments

concerning the revised draft permit. On January 23, 2013 the Department announced the availability of a revised draft permit.

The Department held public hearings on February 6, 2013 in Nanuet and on February 7, 2013 in Tarrytown. Six interested parties appeared and offered unsworn testimony. Public comments concerning the revised draft permit were accepted until February 19, 2013. Seven sets of written comments were received.

This summary responds to all comments received which addressed the terms or conditions of the proposed permit. Comments (L. Fisher, J. Fisher and Graham) unrelated to the proposed permit; and general comments on topics ranging from the Department's overall mission to the finances of the bridge project are irrelevant to DEC's permit and need not be considered here. The comments have been organized to follow the sequence of the draft permit with general comments addressed at the end of the responsiveness summary. Comments are summarized and when raised by more than one party are presented as a consolidated comment. Comments made at public hearings are noted. The Department's responses follow the comments.

Comments Concerning Net Conservation Benefit

Comment: Progress reports required by Section F should be submitted on a quarterly basis or at a minimum annually. (Riverkeeper)

Response: The Department agrees and will revise the permit to require annual reporting at a minimum.

Comment: If post-permit monitoring demonstrates unanticipated impacts, the permit should require the re-evaluation of, and revisions to, the compensatory mitigation plan. (Riverkeeper)

Response: The permit has been revised to resolve this comment. To the extent that a further response is required, the purpose of the monitoring required by the permit is to demonstrate compliance with the permit. Unexpected adverse environmental impacts that are potentially significant may arise and may need to be assessed. However, any assessment of such impacts is governed by ECL Article 8 (the State Environmental Quality Review Act (SEQR)) and its implementing regulations at 6 NYCRR Part 617, and not the permit. If environmentally significant modifications are made to a project after issuance of the FEIS, or unavoidable potentially significant adverse impacts arise which differ significantly from those predicted in the FEIS, a supplemental impact statement may be necessary. Matter of Fannie Mae Jackson, 67 N.Y. 400 (1986). Moreover, if the supplemental examination of unexpected adverse environmental impacts results in the need to modify the permit, that process is governed by ECL Article 70 and the procedures at 6NYCRR Part 621. Accordingly, this issue is outside the scope of the permit.

Comment: To achieve a net conservation benefit, the permit must include mitigation measures that will have positive benefits for many migratory species especially those that are at historically low population levels. (Scenic Hudson)

Response: The permit has been revised to resolve this comment. To the extent that a further response is required, incidental take permits are governed by ECL § 11-0535 and 6 NYCRR Part 182. There is no legal requirement that mitigation measures required in connection with an incidental take permit have positive benefits for ‘many migratory species.’ The Department has coordinated its review of the proposed project with the National Marine Fisheries Service (NMFS) and the U. S. Fish and Wildlife Service (USFWS) in accordance with §182.11(f). The Department has also worked with the applicant to identify measures to minimize and fully mitigate impacts to any species listed as endangered or threatened. Based upon this review the applicant has proposed, and the Department has approved, measures which are capable of successful implementation, and are legally, technologically, economically and biologically practicable. The Department believes that the mitigation plan required by the permit satisfies the requirement to achieve a net conservation benefit.

Comment: To achieve a net conservation benefit, the permit should require full funding of the Department’s recovery plan for American Shad and River Herring. (Scenic Hudson)

Response: The Department disagrees. Incidental take permits are governed by ECL § 11-0535 and 6 NYCRR Part 182 and focus on listed species and their habitats. Based upon the information in the application and the FEIS there is no nexus between the incidental take of Atlantic and shortnose sturgeon from this project and American Shad and River Herring populations and, therefore, there is no basis on which to require full funding of the Department’s recovery plan for these species.

Comment: To achieve a net conservation benefit, the permit should require fish passage enhancement/barrier removal on at least five Hudson River tributaries. (Scenic Hudson)

Response: The permit has been revised to resolve this comment. To the extent that a further response is required, incidental take permits are governed by ECL § 11-0535 and 6 NYCRR Part 182 and focus on listed species and their habitats. Based upon the information in the application and FEIS there is no nexus between the impacts of this project on Atlantic sturgeon and shortnose sturgeon and fish passage issues and, therefore, no basis to require fish passage enhancement/barrier removal on at least five Hudson River tributaries.

Comment: To achieve a net conservation benefit, the permit should fund additional projects to accelerate recovery of sturgeon stocks in coastal waters. (Scenic Hudson)

Response: The permit has been revised to resolve this comment. To the extent that a further response is required, the permit requires Net Conservation Benefit mitigation projects designed to enhance habitats. 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.

The Department believes that these measures and the others required by the Net Conservation benefit section of the permit satisfy the requirements in ECL § 11-0535 and 6 NYCRR Part 182 and achieve a net conservation benefit.

Comment: To achieve a net conservation benefit, the permit should require that the applicant fund New York's share of the Army Corps of Engineers Hudson River Habitat Restoration Feasibility Study and require in-kind contributions to fund studies and pilot projects. (Scenic Hudson)

Response: The permit has been revised to resolve this comment. To the extent that a further response is required, as explained in the previous response, the permit requires compensatory mitigation projects designed to enhance habitats. The Department believes that the mitigation activities required by the permit satisfies the requirement in ECL § 11-0535 and 6 NYCRR Part 182 and achieve a net conservation benefit as required by 6 NYCRR Part 182.

Comments Concerning Mitigation

Comment: The mitigation provisions in the draft permit should contain preliminary cost estimates for each mitigation project. (Riverkeeper)

Response: The permit has been revised to resolve this comment. To the extent that a further response is required, the cost of removal of the sediment at Gay's Point is highly dependent upon the degree of sediment contamination. The objective of this element of the mitigation plan is to develop a standardized work plan or guidance document which might be used at other locations for other habitat enhancement projects in secondary channels of the Hudson River. It is the Department's judgment that if the cost of sediment management at Gay's Point proves prohibitive, then another suitable site for such an equivalent demonstration project will be identified. Because of the unique role that sediment management costs will play in connection with this portion of the mitigation program, a cost ceiling was established. However, similar cost information is irrelevant for other elements of the mitigation plan.

Comment: Mitigation Section B(v) should be revised to expressly require: (i) four years of post-construction monitoring of green infrastructure projects on Sparkill Creek, and (ii) the Department should make every effort to obtain community input into the design and implementation of this project. (Riverkeeper)

Response: The permit has been revised to resolve this comment. To the extent that a further response is required, the permit clarifies the schedule concerning post-construction monitoring of green infrastructure projects on Sparkill Creek. The applicant has also committed to consult with the commentor to obtain input into the design and implementation of green infrastructure projects on Sparkill Creek as part of the project's on-going outreach program. However, the

Department does not believe that the permit should require that the applicant make ‘every effort’ to obtain community input into the design and implementation of this project.

Sufficiency of Mitigation

Comment: The total mitigation package required by the draft permit is insufficient.

(Riverkeeper, Scenic Hudson, Saunders)

Response: The permit has been revised to resolve this comment. To the extent that a further response is required, the permit has been revised to require that within one year, 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. This is in addition to the 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 to be developed in collaboration with the Department consistent with the Department’s July 3, 2102 letter. This supplemental requirement resolved the concerns expressed by Riverkeeper and Scenic Hudson.

To the extent that a further response is necessary, the presumption concerning the scope of adverse impacts behind this comment is contrary to the findings of the FEIS. The FEIS provides a comprehensive assessment of the potential impacts of habitat loss and modification, sediment resuspension and transport associated with dredging, armoring, and other construction operations. FEIS at 18-76 (sediment resuspension); 18-78 (sediment quality); 18-79 (existing bridge demolition). The FEIS concluded that “impacts due to increased water column suspended sediments are expected to be minimal and would not result in adverse impacts to fish within the Lower Hudson River estuary.” FEIS at 18-101 These conclusions are supported by other impact

assessments undertaken in connection with this project, including the Biological Assessment (BA) prepared by the applicant, and the Incidental Take Permit (ITP), and Biological Opinion (BO) prepared by National Marine Fisheries Service's (NMFS). For example, NMFS determined in its BO that the proposed project "may adversely affect but is not likely to jeopardize the continued existence of shortnose sturgeon or any [populations of] Atlantic sturgeon." BO at 144. In its BO, NMFS did not identify any adverse impacts on the benthic community as suggested in the comment. To the contrary, NMFS concluded that "since much of the benthic community exists in the upper 10 cm of sediment . . . benthic recovery should begin quickly, particularly in the soft bottom sediments." BO at 120. Indeed, NMFS concluded that "the temporary loss of the access channel area for foraging would represent a minor fraction of similar available habitat throughout the Tappan Zee region (1.2%) . . . and an even smaller percentage of the riverwide benthic area (0.2%)" and is inconsistent with NMFS view that "the soft sediment community . . . dominates the Upper New York Harbor and Hudson River." Id.

While the Department did not dispute the conclusions of the FEIS with respect to impacts due to the bridge construction, most of which were temporary, DEC is of the opinion that the scale and duration of these temporary impacts are sufficient to warrant mitigation. There is no formula from which mitigation requirements can be derived with mathematical certainty. Rather, development of an appropriate mitigation plan involves a series of judgments about how best to replicate the resource functions which are temporarily lost due to the permitted activity. The fundamental objective of mitigation is to offset environmental losses resulting from unavoidable impacts. Accordingly, the starting point for any assessment of mitigation must be the unavoidable adverse impacts on the environment associated with the project. Appropriate mitigation can only be based upon identified and quantified impacts.

It is noteworthy that the comments point to no project specific impacts which were allegedly overlooked. For example, Scenic Hudson states that the mitigation is insufficient considering the “*potentially* widespread and significant habitat destruction.” Likewise, Riverkeeper mentions “unforeseen impacts” as a basis to modify the mitigation provisions of the draft permit. The Department believes that the application and supporting materials, including without limitation the FEIS and the December 2012 Re-evaluation Statement, are sufficiently detailed so that mere speculation about potential impacts is unwarranted and fails to provide a basis to change the mitigation provisions in the permit.

When establishing the mitigation plan for this project, the Department focused on replacing the ecological functions that would be lost (not the number of acres that would be temporarily disrupted) as a result of this project. In terms of ecosystem productivity, the soft bottom sublittoral zone which will be impacted by dredging for the replacement bridge is the most common habitat in the lower Hudson River estuary, and the secondary productivity of unvegetated sublittoral areas like that found in the area to be dredged (approximately 10 grams of carbon/m²/yr) is less than half that of the average secondary productivity of the estuary (25-29 gC/m²/yr). Day, J.W., W.M. Kemp, A. Yáñez-Arancibia, and B.C. Crump. 2013. Estuarine Ecology, (2nd Edition) Wiley-Blackwell, p.568. In contrast, intertidal areas like those included in the compensatory mitigation at Piermont Marsh are typically far more productive habitats (up to 113 gC/m²/yr) than unvegetated sublittoral areas. Id. Therefore, the function value of the mitigation required by the permit was judged to exceed that of the impact site and is expected to provide adequate mitigation for temporary losses of benthic function in the dredged area.

The Department also developed a mitigation package that would insure that the activities required to achieve Net Conservation Benefit for threatened and endangered species would also

provide mitigation benefits. Thus, although the FEIS determined that migratory fish species would not be adversely affected by project construction and therefore, no mitigation for these specific taxa is required; these migratory species should benefit from the restoration and enhancement of wetlands at Piermont Marsh and secondary channel restoration at Gay's Point. Although not "intended specifically for migratory species such as shad and herring the channel restoration element of the conceptual compensatory mitigation plan would provide some benefit to these species. The restored channel habitats can serve as a refuge for juvenile migratory fish including shad and river herring." FEIS at 18-119 Collectively, these mitigation projects were deemed to be adequate compensation for project-related impacts. Furthermore, the permit condition requiring mapping the Hudson River shallows will provide a net conservation benefit to several anadromous and resident Hudson River fish species, as well as to the Atlantic and shortnose sturgeon.

These comments also point to the aggregate mitigation package at the Woodrow Wilson Bridge for supporting a larger suite of mitigation projects. However, according to the 2010 Financial Plan Annual Update for the Woodrow Wilson Bridge, the actual mitigation cost for that project was approximately \$31 million, not the \$50 million figure cited by in the comment. Of the \$31 million, \$18 million was related to aquatic resource impacts.

Regardless of the cost, the Woodrow Wilson Bridge project had significant terrestrial impacts not associated with the New NY Bridge, including permanent effects to 109 acres of terrestrial forests, incidental take of up to two endangered bald eagles and two bald eagle chicks or eggs, and the loss of 14.1 acres of parklands/recreational areas. By comparison, the New NY Bridge permanently impact only two acres of upland area and will not result in any impacts to parklands or recreational areas. The Woodrow Wilson Bridge was also wider (increasing over-

water shading of aquatic habitat), took longer to build (increasing the duration of construction impacts), and required twice the number of piles per mile of river width. Although the temporary impacts to aquatic habitat associated with the New NY Bridge are larger (144 acres compared to 11.7 acres with the Woodrow Wilson Bridge), the Woodrow Wilson Bridge construction included permanent impacts to 64.6 acres much of which were high value wetlands and submerged aquatic vegetation. These habitat types provide functional values which are difficult to replicate. By comparison, the New NY Bridge project will permanently impact only 9.3 acres of habitat, none of which are tidal wetlands or submerged aquatic vegetation.

The \$18 million expenditure for aquatic resource mitigation associated with the Woodrow Wilson Bridge resulted in the restoration or improvement of approximately 68 acres of aquatic habitat and offset approximately 38 acres of aquatic habitat that was permanently or temporarily impacted as a result of construction of the river crossing. The result was a mitigation ratio of 1.8:1 for aquatic habitats impacted as a result of the river crossing portion of the Woodrow Wilson Bridge. In comparison, construction of the New NY Bridge is expected to cause permanent (9.3 acres) or temporary (144 acres) impacts to approximately 153 acres of aquatic habitat, which will be offset by the improvement or restoration of up to 362 acres of aquatic habitat, including Phragmites removal at Piermont Marsh (200 acres), water-quality improvement at Sparkill Creek (up to 33 acres), restoration of the oxbow at Crumkill Creek (5 acres), oyster restoration in the vicinity of the Tappan Zee Bridge (13 acres), and secondary channel restoration at Gay's Point (up to 111 acres). Thus, the mitigation ratio for the proposed project is therefore in excess of 2:1 and exceeds the comparable ration for the Woodrow Wilson project.

In addition to these mitigation projects, there are a number of projects that will be implemented to provide a net conservation benefit to shortnose and Atlantic sturgeon, including mapping of shallow benthic habitats within the Hudson River, a sturgeon diet study, a tagging and tracking study to assess sturgeon movement and habitat use within the river, and an outreach campaign to educate and interact with commercial fishermen to reduce sturgeon by-catch in commercial gillnets. These mitigation projects are expected to produce long-term benefits.

It is noteworthy that as part of the Riverkeeper's March 30, 2012, comments concerning the DEIS for this project, Ralph Huddlestein acknowledged that except for the loss of oyster beds, the greatest impacts (at least for sturgeon) would be "temporary loss of habitat" and that it would take "4.5 to 5.5 years for full recovery to pre-disturbance conditions." Scenic Hudson's March 1, 2012 comments on the DEIS did identify permanent impacts due to scouring and sediment movement related to placement of piers and increased shading. However, these were considered by the applicant, addressed in the FEIS and are fundamentally different in terms of the nature of lost resource functions when compared to losses related to destruction of wetlands and submerged aquatic vegetation associated with the Woodrow Wilson Bridge. The Department has addressed the risks associated with scouring and sediment movement related to placement of piers in Permit Condition 35. The shading issue was considered in both the FEIS and Re-evaluation Statement and it has been determined that the shading associated with the final design of the replacement bridge will be less than the shading from the extant bridge. See Re-evaluation Statement at Section 3-13. Therefore, in the Department's judgment, there is no technical, environmental or rational basis to use the Woodrow Wilson Bridge project when assessing the adequacy of mitigation in the permit.

In the absence of site specific information concerning impacts that have not been identified or resource functions that were overlooked in the proposed compensatory mitigation requirements, the exclusive support for the argument that the mitigation package is insufficient is based upon a comparison to the capital cost of the project, the length of the river crossing and the cost of compensatory mitigation at the Woodrow Wilson Bridge. Because these criteria reveal nothing concerning adverse environmental impacts, comparing these distinctly different projects on these factors is meaningless.

Comment: The size of the oyster replacement program is insufficient; the Department should insist upon replacement at a ratio of 2:1 or 3:1. (Riverkeeper, Scenic Hudson)

Response: The permit has been revised to resolve this comment. To the extent that a further response is required, the Department notes that when evaluating the application and supporting materials, and developing an approach to replacement of the functions served by the existing oyster beds, the Department considered the information provided in Exhibit F-1 of the EIS which reported upon sampling of the oyster beds in the vicinity of the existing bridge. These beds ranged from dense clusters to remnant beds. Sampling of at least one bed south of the bridge failed to locate any live oysters and several beds were described as diffuse and clumpy.

Moreover, the project will impact only a portion of the total mapped oyster beds in the area. Based upon this information, and its own familiarity with the condition of these oyster beds, it is the Department's judgment that the oyster replacement element of the mitigation program should provide direct in-kind and 'on-site' replacement through restoration for the unavoidable loss of oyster beds and that this could be accomplished using ratio of approximately 1:1.

The Department is mindful that 1:1 acreage restoration does not necessarily yield 1:1 functional replacement. However, in this case there are site specific considerations which tend to weigh in favor of a ratio at the lower limit.

- The permit emphasizes reuse of native materials when replacing the reef habitat/substrate. The oyster restoration requirement involves harvesting local reef materials to be used to re-establish the replacement reef.
- The permit requires the use of existing brood stock to re-establish the oyster population. This permit condition is designed to protect the genetic integrity of the oyster populations in this portion of the river.
- Reef replacement is required as soon as possible following construction and in accordance with a schedule approved by the Department. This permit condition should limit the duration of the adverse environmental effects of the loss of reefs due to construction, and
- There is a risk of illegal harvesting of oysters from the vicinity of the bridge which could result in direct adverse impacts on human health and indirect damage to the reputation and value of New York oysters properly harvested from appropriate locations elsewhere in New York.

There is no regulatory criterion requiring any particular mitigation ratio. Regardless, the project was initially anticipated to result in the permanent loss of 13 acres of oyster beds. Upon redesign the impact to oysters was reduced to eight acres. However, the mitigation requirement remains at 13 acres. Therefore, the permit provides a replacement ratio of 1.6:1.

Nevertheless, Scenic Hudson cites the Compensatory Mitigation Guidance published by the New England District of the Army Corps of Engineers in support of their claim that the oyster mitigation ratio should be at least 2:1. However, reliance on this guidance is misplaced. The primary focus of the New England District's mitigation guidance is wetlands and vernal pools. There is nothing in the guidance document about recommended replacement ratios for oyster beds. Indeed, the guidance suggests a mitigation ratio of 1:1 for open water habitat which

would apply here. Given Scenic Hudson's reliance on guidance from the New England District, it is noteworthy that the New York District Corps of Engineers commented on the FEIS for this project on March 31, 2012 and made no mention of the need for any mitigation.

Therefore, in the absence of any statutory requirement or regulatory criteria, and considering the factors outlined above, the Department believes that the appropriate balance on the size of the replacement oyster beds is achieved by requiring the applicant to provide direct compensatory restoration which replaces the 8 acres of oyster beds to be permanently removed with 13 acres of replacement oyster beds.

Comment: Section C(v) only requires the Permittee to "assess the feasibility" of restoring historic wetlands in Piermont Marsh. The Permit should require the restoration of a specific estimated number of acres, subject to a determination of feasibility that is explained more fully in the permit.

Response: The permit has been revised to resolve this comment. To the extent that a further response is required, the comment correctly identifies that this element of the wetlands enhancement program at Piermont Marsh requires a feasibility study for restoring historic wetlands but does not involve the actual restoration of a specific number of acres. Although this element will not directly result in the restoration of wetlands, the feasibility assessment (which includes baseline studies of existing plant and animal communities, analysis of sediment contaminants in the former landfill area, and a determination of the costs of landfill material and sediment removal) provides a substantial mitigation benefit by providing the Department and the public with currently unavailable information about Piermont Marsh that will facilitate any future remediation effort. This permit provision is not intended to be read as "conduct the restoration if feasible." The assessment itself is the mitigation required in this instance.

Additional Mitigation Projects

Comment: The Department must consider cumulative impacts of this project in the context of other projects proposed for this area of the estuary on the two federally-listed Sturgeon species, as well as on the other migratory fish species that must pass this site, the migratory waterfowl that concentrate in the lower estuary, and the resident fish species including:

- Striped bass
- American shad
- River herring
- American eel
- Winter flounder
- Atlantic Tomcod (Scenic Hudson)

Response : The permit has been revised to resolve this comment. To the extent that a further response is required, the comment does not identify any “other projects proposed for this area of the estuary” to which it refers. The cumulative impacts of the New NY Bridge and other projects were considered in the FEIS. Impact analyses conducted as part of the FEIS concluded that “habitat losses resulting from bridge construction are expected to be localized and would not extend beyond the defined areas of impact.” FEIS at 21-5. Therefore, any temporary or permanent changes to aquatic habitats would not affect the larger habitat value of the Hudson River and no cumulative habitat fragmentation would be expected. Similarly, the analysis of potential impacts on benthic and fish populations affected by the pile driving would potentially affect a small proportion of any given species and would not cumulatively affect overall populations. The FEIS did not identify any impacts to the species listed in the comment, and the commenter has not offered evidence to the contrary.

Comment: The project should include additional projects which focus on riverfront revitalization. (Scenic Hudson)

Response: The permit has been revised to resolve this comment. To the extent that a further response is required, for all of the reasons stated above, the Department believes that the required mitigation is sufficient to offset unavoidable impacts caused by the project. In addition, the Department's permitting authority is ECL Article 11; Article 25 and Section 401 of the Federal Clean Water Act, 33 U.S.C. § 1341. There is no nexus between these regulatory programs and several of the suggested mitigation proposals (e.g., Riverfront Revitalization including parks, esplanades and bicycle or pedestrian facilities).

Comment: The design-build process has inherent risks that substantial changes in project design – and environmental impacts – will occur and the SEQRA process was not designed to handle such significant changes in project design and impact without opportunity for additional environmental review and public input so the permit needs to anticipate and ensure that such impacts are minimized and mitigated. (Scenic Hudson)

Response: The permit has been revised to resolve this comment. To the extent that a further response is required, the comment does not identify any impacts that are not addressed or permits conditions which need to be modified.

Comments Concerning Permit Conditions

Permit Conditions 1 through 3

Comment: Pile Installation Demonstration Project 2 should not be authorized until definite plans are submitted and approved. (Saunders)

Response: To discharge its obligations pursuant to the ECL and the Clean Water Act the Department requires information sufficient to evaluate the potential impacts and develop terms and conditions that minimize the anticipated impacts. When impacts are unavoidable, the Department requires information adequate to ensure that impacts are mitigated to the maximum extent practicable. The Department believes that the application and supplemental materials submitted to date contain, including without limitation the documents dated December 28, 2012 and January 3, 2013 noted in the draft permit, are sufficiently detailed to allow approval of the preliminary pile driving, subject to the terms and conditions established in Permit Conditions 1 through 3.

Permit Condition 4(c)

Comment: The environmental compliance plan, once approved, must be specifically incorporated into the Final Permit to ensure that the conditions of the plan are enforceable. (Riverkeeper)

Response: The Department believes that ECL § 71-1127 provides sufficient authority so that failure to perform any duty or the violation or failure to comply with any condition of a permit constitutes an enforceable violation of both the permit and the ECL. Accordingly, there is no need to modify the permit

Permit Conditions 4 through 6

Comment: Department staff will need to monitor any Oversight Environmental Compliance Monitor. (Saunders)

Response: The Department acknowledges this comment; however, the permit need not prescribe the Department's activities.

Permit Conditions 7 through 17

Comment: The permit conditions are too vague because (i) sound attenuation technology has only been partially demonstrated; (ii) cofferdams must be precisely located; (iii) volume of piles must be accounted for in dredging volumes, and (iv) the time window allowed for pile driving must be seasonally adjusted. (Saunders)

Response: The Department believes that the permit addresses these concerns because: (i) the July 7, 2012 report entitled Underwater Acoustic Monitoring of the Tappan Zee Bridge Pile Installation Demonstration Project established that each of the tested noise attenuation systems is capable of achieving material sound exposure level reductions and this data is sufficient to allow an adequate and complete understanding of the work and therefore a permit can be issued; (ii) the final location of the cofferdams, although important, is not critical for purposes of this permit; nonetheless based upon the application, supplemental submissions, the documents dated December 28, 2012 and January 3, 2013 noted in the draft permit, sufficient details are available; (iii) the volume of the piles is unrelated to the analysis of dredging, and (iv) the objective of the 12 hour pile driving window is to ensure that fish in the vicinity of the construction have a significant period during which there is no noise from pile driving; therefore, seasonal adjustment is not warranted.

Permit Condition 8

Comment: The permit should specify that the sound attenuation system or systems used during pile driving will minimize adverse effects of sound on fish by ensuring that sound does not exceed levels harmful to fish and that the results of the 2013 Pile Installation Demonstration Project 2 and final design of the pile driving sound attenuation system will be disclosed publically prior to commencement of pile driving. (Riverkeeper, Scenic Hudson; Fisher 2/6 public hearing)

Response: The permit has been revised to resolve this comment. To the extent that a further response is required, the Department agrees that the sound attenuation system should be designed to ensure that adverse effects on fish due to pile driving are minimized. Nevertheless, there is considerable uncertainty about what level of sound associated with pile driving could reasonably be expected to have a material adverse impact on fish. NMFS' BO for this project discussed this uncertainty and noted the lack of scientific consensus concerning safe sound levels or sound attenuation systems which are universally recognized as fully effective. Therefore, in the absence of specific statutory requirements or any regulatory criteria, the Department believes that the appropriate balance on this issue can be achieved by requiring the applicant to develop a plan to control underwater sound based upon all of the available research and scientific information. The Department will review that plan which, upon approval, will have the full force and effect of a permit condition.

As public information, the results of the 2013 Pile Installation Demonstration Project and final design of the pile driving sound attenuation system will be available from the Department through normal channels. The applicant has also committed to promptly post final plans on the project website.

Comment: The contractor should devise and implement a sound attenuation system that combines the bubble curtain and the pile-within-a-sleeve strategies. (Scenic Hudson)

Response: The permit has been revised to resolve this comment. To the extent that a further response is required, the Department believes that the sound attenuation system can be specified when the applicant presents a final plan. The July 7, 2012 report entitled Underwater Acoustic Monitoring of the Tappan Zee Bridge Pile Installation Demonstration Project reported on tests of five systems and concluded that each of the systems satisfied the test criteria of 10 decibel (db) sound exposure level attenuation. Moreover, the July 7, 2012 report demonstrates that due to site conditions sound propagation was substantially less than predicted by prior modeling efforts. Therefore, the Department has concluded that final design decisions concerning the sound attenuation system can be made by the applicant and should be presented in a plan which when reviewed and approved by the Department shall become an enforceable element of the permit.

Permit Condition 13

Comment: The permit should specify that vibratory pile driving is required to the maximum extent “practicable.” (Riverkeeper)

Response: The permit will require vibratory pile driving where it is effective to advance piles.

Comment: Monitoring and enforcement of the requirement that vibratory pile driving is required to the ‘maximum extent practicable’ will be difficult. (Scenic Hudson)

Response: The Department acknowledges this comment. However, determinations about how to advance piles inherently involves extensive engineering judgment based upon site specific conditions. The Department does not make engineering judgments. Moreover, vibratory pile driving offers the advantage of less noise but has the disadvantage of possibly extending the duration of construction activities resulting in potentially greater impacts to water quality and the

river ecosystem. The Department will amend Permit Condition 13 to balance between these benefits and risks. In any event, by requiring an on scene Environmental Compliance Monitor in Permit Conditions 4 through 6, and by requiring access for inspection in Permit Condition 69, the Department believes that it can sufficiently monitor and enforce this requirement.

Permit Condition 14

Comment: The requirement to maintain a continuous acoustic corridor to maximum extent practicable will be difficult to monitor and enforce. (Scenic Hudson)

Response: The Department acknowledges this comment. By requiring an on scene Environmental Compliance Monitor in Permit Conditions 4 through 6, and by requiring access for inspection in Permit Condition 69, the Department believes that it can sufficiently monitor and enforce this requirement.

Permit Condition 16

Comment: The permit should specify that water from dewatering operations may not violate water quality standards and must comply with the ECL. (Riverkeeper)

Response: The Department disagrees that the permit must (or should) contain specific prohibitions against activities that otherwise violate Water Quality Standards or the ECL. One objective of the permit is to assure compliance with applicable water quality standards. Because ECL § 17-0501 states “[i]t shall be unlawful for any person, directly or indirectly, to throw, drain, run or otherwise discharge into such water organic or inorganic matter that shall cause or contribute to a condition in contravention of the standards adopted by the department pursuant to section 17-0301” it is a violation of law to cause or contribute to a violation of water quality standards and the Department can pursue enforcement if standards are violated.

Permit Condition 18

Comment: The final permit should clearly prohibit discharges of concrete leachate and fresh concrete and not include language limiting such events “to the maximum extent practicable.”

(Riverkeeper)

Response: The Department agrees.

Comment: No plans have been produced so the permit should not be authorized. (Saunders)

Response: The Department disagrees. Based upon the application, supplemental submissions, the documents dated December 28, 2012 and January 3, 2013 noted in the draft permit, sufficient details are available concerning in-water concrete production, delivery and placement so that the Department can establish permit conditions.

Permit Conditions 21 and 34

Comment: The prohibition on upland disposal conflicts with the terms of authorizations issued by the Army Corps of Engineers and prevents the Department from issuing a permit. (Saunders)

Response: The Department disagrees. The applicant intends to utilize upland disposal as an option for certain material. The applicant will be required to comply with Permit Conditions 21 and 34. However, this permit only applies in New York State so there is no conflict.

Permit Conditions 25, 37, 46, 57 and 58

Comment: The Department has no authority to allow the use of mixing zones because New York’s mixing zones policies are not explicitly authorized by EPA. (Riverkeeper; Scenic Hudson)

Response: The permit has been revised to ensure that water quality monitoring be conducted 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

monitoring plan must: (i) describe procedures for background sampling, and sampling at the edge of a 500-foot mixing zone; (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. These changes resolve this comment.

Nevertheless, to the extent that a response is required, the Department disagrees with this comment. The Department believes that 6 NYCRR § 700.2 provides sufficient legal basis for Permit Conditions 25, 37, 46, 57 and 58. 6 NYCRR § 700.2(a) and (d) allow the Department to establish a compliance point for any discharge to surface water. When establishing such a compliance point the Department is fully authorized to take into account an appropriate “zone of mixing” provided: “(1) there must be prompt mixing of the discharge with the receiving waters; (2) mixing shall not interfere with biological communities to a degree that is damaging to the ecosystem; (3) the zone of mixing shall not include intakes for potable water supplies; and (4) mixing shall not diminish other beneficial uses disproportionately.” This provision has been part of the regulations which were explicitly approved by EPA on several occasions. There is no suggestion in any of the comments that 6 NYCRR § 700.2 is legally insufficient or inapplicable to the WQC associated with this application. Moreover the comments do not dispute that the four conditions precedent in 6 NYCRR § 700.2 for use of a mixing zone are present at this project site.

The Department has been using its Technical Operational Guidance Series (TOGS) Memorandum guidance as a basis to provide staff, the regulated community and EPA with technical direction concerning New York’s water quality protection program for more than

twenty years. EPA has cited the use of TOGS with approval. See September 27, 2001 letter from William Muszynski to Erin Crotty and March 16, 1998 Amendment to NPDES Memorandum of Agreement at Section II.1. The Department's mixing zone protocols are specified in several guidance documents including, without limitation, its July 8, 1996 TOGS Memorandum 1.3.1. The purpose of TOGS 1.3.1 "is to describe the analysis used to determine if a water body will meet water quality standards." TOGS 1.3.1 provides that a mixing zone "is accepted as normal and expected consequence" of a discharge. TOGS 1.3.1 goes on to establish the steps to be followed to assess the discharge and establish mixing zone. TOGS 1.3.1 was approved by EPA on March 16, 1998.

Moreover, the Department has issued guidance which specifically addresses mixing zones for dredging projects. This TOGS, numbered 5.1.9, went through public review and was the subject of comments from federal agencies. The availability of TOGS 5.1.9 was initially announced in the ENB in March, 2003 and was the subject of a final notice in January 2005. Thus, in addition to the explicit approval of 6 NYCRR § 700.2 and TOGS 1.3.1, EPA has been on notice of the Department's guidance document for mixing zones used in dredging projects – TOGS 5.1.9- for nearly ten years. Since formulating TOGS 5.1.9 New York's water quality standards have undergone triennial review pursuant to 33 U.S.C. 1251(a) and EPA has approved New York's program. See September 27, 2001 letter from William Muszynski to Erin Crotty and March 16, 1998.

Riverkeeper also states that "until the NYSDEC promulgates new water quality standards with explicit mixing zone authorization, NYSDEC may not issue a 401 certification predicating the Project's compliance with water quality standards on the use of mixing zone." To the extent that this comment alleges that mixing zones can only be authorized in formal regulations the

Department disagrees. 40 CFR 131.13 authorizes states to use mixing zones. EPA's regulation leaves it to the States to determine how to implement their mixing zone policy. EPA answered any question about whether 40 CFR 131.13 allows New York to use guidance documents in lieu of formally promulgated regulations on July 7, 1998 when it published a notice of advance rulemaking. That rulemaking notice clearly stated that "[t]he current regulation [i.e., 40 CFR 131.13] does not articulate any EPA requirements regarding the contents of mixing zone implementation procedures." 63 Fed. Reg. 36742, 36787 (July 7, 1998). EPA recognized that States could employ mixing zone policies in guidance documents without adopting formal regulations. *Id.* Ultimately, EPA allowed 40 CFR 131.13 to remain in place unchanged. In light of EPA's long-standing analysis of how States can implement mixing zones, none of the authority cited in the comments undermines the Department's conclusion that it is authorized to use mixing zones that are consistent with guidance in TOGS to achieve water quality standards.

Further, the comment simply does not identify any statutory or regulatory authority that draws any distinction between mixing zone policies that are set forth in guidance (such as TOGS) rather than in state statutes or regulations. For instance, citations to EPA policy regarding whether EPA includes mixing zones in its federal NPDES permits are irrelevant to the question of whether mixing zones can be included in a § 401 Water Quality Certification in New York, because EPA is not issuing a federal permit. *In re: Ketchikan Pulp Company*, 26 E.A.D. 675 (1996), is thus inapplicable. There, EPA Region 10 declined to apply a mixing zone because the Alaska Department of Environmental Conservation (ADEC) specifically reserved the discretion as to whether to apply a mixing zone to a given water quality certification. ADEC waived its right to issue a certification, and EPA determined that it did not have the authority to make a decision reserved to ADEC's discretion. As EPA stated in its brief, cited in the opinion,

“[r]espect for the State role under the Act to determine the appropriate water quality standards and necessary implementing regulations suggests that EPA should not assume that Alaska's mixing zone provision also gives EPA the authority to grant a mixing zone without some extrinsic evidence that Alaska intends EPA to exercise such authority.” Thus, the administrative decision did not turn on whether the Alaska mixing zone provision was contained in guidance rather than regulation or statute (it was contained in ADEC’s regulations), but the fact that EPA, applying Alaska water quality standards, declined to exercise discretion reserved to ADEC. Likewise, In the Matter of Sierra Pacific Power Company, 1 E.A.D. 182 (1976), provides no support for Riverkeeper’s comment that mixing zones must be included in state statutes or regulations (rather than in technical guidance). There, EPA issued NPDES permit renewals to Sierra Pacific on January 3 and January 9, 1975. At the time the permit was issued, Nevada state regulations did not include a provision authorizing mixing zones, so EPA (relying on Nevada state policies) did not include a mixing zone in its NPDES permit. On January 10, 1975, the decision notes, Nevada “apparently passed a regulation which would allow mixing zones to be established.” Because Nevada still had not at the time of the decision “established procedural regulations for determinations, on a case by case basis, of what are appropriate mixing zones” nor submitted its regulations to EPA for approval, the judge ruled that the water quality standards contained no provision for mixing zones. The administrative ruling draws no distinction between state mixing zone policies contained in guidance and those contained in statute or regulations.

The conclusion that the WQC for this project can incorporate the mixing zone concept also makes sense. The Riverkeeper’s comments note that use of mixing zones is a “practical necessity.” Likewise, all of the EPA’s key guidance concerning mixing zones recognizes the

need for “a limited area where initial dilution of a discharge takes place” and “within which water quality criteria can be exceeded.” See e.g. EPA Water Quality Handbook (2nd Ed. 2012), Chapter 5 at Section 5.1. This WQC is being sought for a dredging project. As noted by the Army Corps of Engineers, when working in a tidal river, safety considerations often limit where monitoring can be performed. See Army Corps of Engineers, Technical Guidelines for Environmental Dredging of Contaminated Sediments (September 2008). These practical considerations are especially relevant considering the facts surrounding the project at issue here for the following site specific reasons:

- The Re-evaluation Statement confirms that dredging activities will be limited to six months over two years and will not increase the extant mass of pollutants in the Hudson River or introduce any new pollutants.
- The impacts on water quality would be triggered by dredging and potentially by prop induced re-suspension and associated dispersion of sediments during construction. The Hudson River is a dynamic estuary and sediments are being continuously mobilized through natural mechanisms (i.e., tides; storms). The project is only a minor cause of sediment re-suspension and dispersion.
- Permit condition 20 limiting the dredging to August 1 to November 1 is intended to ensure that impacts to sensitive life stages of important biological resources are minimized.
- Permit conditions 22 through 34 establish an extensive program of best management practices (BMPs) which, based upon the Department’s experience, will minimize the re-suspension and dispersion of sediments.
- Permit condition 35 requires the removal of shallow sediments which exceed the Departments’ guidance prohibiting riparian placement of sediments because of potential toxicity to aquatic life.
- Modeling establishes that the aerial extent and duration of re-suspension of sediments which exhibit elevated levels toxic pollutants would be limited. See Final EIS, Appendix E, July 2012.

Comment: Mixing zones cannot be applied to impaired waterbodies for toxic pollutants which are the basis for the impairment. (Riverkeeper)

Response: The permit has been revised to require enhanced water quality monitoring. These changes resolve this comment.

Nevertheless, to the extent that a response is required, while mixing zones “may not be appropriate” in some instances, the 1976 EPA guidance cited by the D.C. Circuit Court of Appeals in a footnote in Hercules, Inc. v. EPA, 598 F.2d 91, 116 n.49, and relied upon to support this comment does not appear to be current EPA guidance, because it is not available online and does not appear in EPA’s “Compilation of Mixing Zone Documents” available at <http://water.epa.gov/scitech/swguidance/standards/mixingzones/index.cfm>. In any event, the Hercules court did not cite that 1976 EPA memorandum for its legal authority, but instead for the proposition that mixing zones were “controversial” and that some commentators had suggested that the Clean Water Act did not allow for mixing zones. The D.C. Circuit’s recognition that mixing zones were “controversial” in 1978 is dicta, is not part of the holding of the case, and does not raise doubt about the applicant’s ability to meet statutory or regulatory criteria applicable to the project. The comment goes on to cite EPA’s Revisions to the Methodology for Deriving Ambient Water quality Criteria for the Protection of Human Health 65 Fed. Reg. 66444, 66451 (November 3, 2000) to support this argument. The Department believes that this reliance is also mis-placed. As EPA has observed “EPA does not have a general policy on the availability of mixing zones in impaired waters at this time and generally defers to States on this issue.” Final Rule to Amend the Final Water Quality Guidance for the Great Lakes System to Prohibit Mixing Zones for Bioaccumulative Chemicals of Concern, 65 Fed. Reg. 67638-67651, 67645 (November 13, 2000).

The comment has identified no legal authority to support the assertion that a mixing zone cannot be authorized in this instance. While DEC and EPA guidance provide that a mixing zone may not be appropriate in all cases, the comment does not provide a factual basis on which to conclude that the mixing zone set forth in the permit is inappropriate. As set forth in the FEIS, the 500 foot default mixing zone is based on NYSDEC guidance provided in TOGS 5.1.9, which states, “In rivers and river-like sections of estuaries, acute toxicity thresholds for suspended sediments should not be exceeded beyond a distance of one third the width of the waterway or a total width of 500 feet, whichever is less.” Therefore a 500 foot mixing zone is appropriate in this instance.

The Department acknowledges the national policy announced at 33 U.S.C. § 1251(a)(3). The Department believes that the proposed permit would comply with this national policy. This comment also alludes to the possibility that the re-suspension of certain sediments could exceed the assimilative capacity of certain waters. The monitoring required by the proposed permit is intended to ensure that this does not happen during this project. Neither the Riverkeeper’s comments nor the supporting letter from Dr. Bohlen provide any basis to conclude that if the permit is issued as proposed it would result in a discharge of toxic pollutants in toxic amounts. The applicant has submitted modeling which strongly indicates that any adverse impact on water quality would be extremely limited. The application materials also indicate that the modeling includes unduly conservative assumptions. Dr. Bohlen reviewed this material and did not dispute the applicant’s conclusions. Furthermore, the permit requires monitoring intended to confirm that sediment re-suspension will not create conditions harmful to aquatic life.

Permit Condition 25

Comment: Issuing a WQC would be inappropriate because the analysis in the EIS indicates that predicted dissolved total PCB concentrations and concentrations of several individual PAH constituents could violate applicable water quality standards outside the mixing zone.

(Riverkeeper)

Response: The permit has been revised to require enhanced water quality monitoring. These changes resolve this comment. Nevertheless, to the extent that a response is required, Section 401 of the Federal Clean Water Act, 33 U.S.C. § 1341 and 6 NYCRR § 608.9(a) allow the Department to issue WQCs when an applicant has demonstrated to the Department's satisfaction that discharges into navigable waterways will comply with applicable federally mandated water quality criteria and standards. The applicant has submitted modeling which predicted the aerial extent and duration of pollutants to be re-suspended during dredging. See DEIS, Appendix E. The applicant also submitted supplemental information including, without limitation the FEIS, Appendix E; a June 25, 2012 letter which considered the ambient concentrations of PCBs and PAHs and the modeling, and a memorandum dated March 4, 2013. This supplemental information indicated that the model overstates the PCB and PAH levels because

- The model overestimates sediment loss. As indicated on Page 18-73 of the FEIS, and Appendix E, Attachment 4, Page 2, the modeling assumed a loss rate of 1 percent from the environmental bucket as one of the inputs for projecting the sediment re-suspension rate for dredging. The Department believes that Permit Conditions 23 and 24 should result in substantially lower losses in a range between 0.16 and 0.88 percent.
- The model relied upon data which overstated PCB concentrations. As presented in Appendix E, Attachment 7 to the FEIS, the analysis used a total PCB concentration in the sediment of 169 ppb based upon 2008 data which included locations outside the area to be dredged. Results of laboratory analysis of sediment samples collected within the proposed dredged area for purposes of the Section 103 HARS testing

and analysis indicated a considerably lower average Total PCB concentration of approximately 3 ppb.

- Particle settling rate—As indicated in Appendix E, Attachment 7, Page 2, the analysis used a settling velocity for sediment resuspended during dredging of 0.0005 meters per second since almost 60 percent of the sediment mass had this estimated settling velocity. However, about 18 percent of the sediment mass was of a sediment class that would have a faster settling velocity (0.01 meters per second). Therefore, a significant portion of the sediment would settle out faster than assumed in the modeling
- Dredge production rate—As presented in Appendix E to the FEIS, Attachments 4 and 7, the analysis assumed that each of the two dredges used for the dredging would remove an average of 7,500 cubic yards per day (cy/day). With the reduction in the volume of material to be dredged of 800,000 cy, the projected dredge production rate has been lowered to approximately 5000 cy/day.
- The model also assumed a sediment generation rate based upon a projected need to dredge approximately 1.9 million cubic yards of material. The permit only authorizes dredging of 951,000 cubic yards.

Furthermore, the Department expects that the dredging design specifications required by Permit Condition 23 will include some adaptive management strategies so that additional site specific BMPs will be developed as necessary. As a result the applicant asserts that dissolved concentrations of PCBs and PAHs at the edge of the mixing zone will be lower than predicted by the model and will not violate water quality standards. This conclusion was confirmed by the applicant's expert on sediment transport on or about March – 2013. The Department is satisfied with this information.

The FEIS also contained a very conservative assumption concerning water quality. When assessing the potential that the PAH constituents benzo(k) fluoranthene, benzo(b)fluoranthene and chrysene would exceed applicable standards, in the absence of published standards for Class SB waters such as the Hudson River, the FEIS adopted either

guidance values from TOGS 1.1.1 or the most stringent standard for that PAH for any water quality classification. This approach – reflected in footnote 2 on Table 2 of Appendix E of the FEIS - may have utility for impact assessment. However, in the absence of a duly promulgated standard for Class SB waters, there is no CWA requirement or regulatory basis to apply the most stringent standard for these particular compounds. It appears that the comment might be based, in part, on this misinterpretation of the FEIS (i.e., any compound which is qualified by footnote 2 on Table 2 of Appendix E of the FEIS would not violate a regulatory standard because there is no applicable standard).

Moreover, one purpose of the site specific Water Quality Monitoring program required in permit conditions 56 through 63 is to ensure that dredging does not violate applicable water quality standards outside the mixing zone. The February 19, 2013 statement of the Riverkeeper's expert on these issues, W. Frank Bohlen, Ph.D., acknowledges that the evaluations used in the FEIS and relied upon in this permit application “appear adequate and provide a reasonable basis for the design of a monitoring program . . .”

Comment: The permit should specify that dredging operations may not violate water quality standards outside the mixing zone and should not permit conditions at the edge of the mixing zone which are 30% over background. (Riverkeeper)

Response: The permit has been revised to require enhanced water quality monitoring and to ensure that the permit does not authorize violations of applicable Water Quality Standards.

These changes resolve this comment.

Nevertheless, to the extent that a response is required, the Department disagrees that the permit should not allow conditions at edge of the mixing zone which are 30% over background. Dredging does not require a permit under ECL Article 7, Title 7 or 8 and is exempt from State

Pollutant Discharge System permitting pursuant to 6 NYCRR § 750-1.5. Nevertheless, when issuing a dredging WQC the principles established by the SPDES program found in 6 NYCRR Part 750 and related TOGS are applicable.

TOGS 5.1.9 governs “In-Water and Riparian Management of Sediment and Dredged Material.” Section V of TOGS 5.1.9 incorporates by reference TOGS 1.2.1 and 1.3.1 and directs the Department to establish site specific conditions for dredging projects to achieve applicable water quality based limitations using a combination of technology limits, BMPs, mixing zones and monitoring. The Department has long recognized that at sites which exhibit elevated background levels of environmentally persistent contaminants -- such as metals, PAHs or PCBs -- the SPDES permit, or the 401 certification, must consider factors in addition to water quality standards. These factors include, but are not limited to, analytical detectability, treatability and whether more stringent limitations are technically achievable. See TOGS 1.3.1.C. As a general principle, where background conditions in an impaired water body equal or exceed the Water Quality Standard then the analysis of permit limitations -- or 401 certification conditions -- should start by considering whether to apply the applicable standard as the allowable limit. However, the analysis does not end by simply looking up the applicable Water Quality Standard. If the Department determines that the Water Quality Standard is “clearly unreasonable due to . . . background concentrations of the receiving waters” then the applicable standard shall be adjusted to reflect the “best treatment technology requirements or equivalent.” TOGS 1.3.1.C at page 3.

The Department has considerable experience applying this approach to refining and developing project specific water quality requirements for dredging projects in the Hudson River. At projects involving dredging in the Hudson River the Department has encountered

conditions where ambient concentrations of metals, PAHs or PCBs render it clearly unreasonable to require the applicant to meet either background or the default Water Quality Standards found at 6 NYCRR § 703.5 at edge of the mixing zone. The sediment loads in the river, the background concentrations of these contaminants and limitations inherent in analytical detectability are too great to apply background or Water Quality Standards at edge of the 500 foot default mixing zone. Moreover, because these conditions are nearly ubiquitous in the Hudson River, attempting to apply TOGS 5.1.9 and establish alternative boundaries for a mixing zone is not likely resolve the issue. Based upon this experience, and applying TOGS 1.2.1 and 1.3.1 through Section V of TOGS 5.1.9 to sites where background concentrations exceed the Water Quality Standard, the Department has routinely issued permits and WQCs for dredging which include a limit of 30% (sometimes expressed as 1.3 times) over background. It is the Department's judgment that this customary permit condition for Hudson River dredging projects is appropriate for this project and is a legal and sufficient basis to issue the permit and WQC.

Permit Condition 27

Comment: The permit should specify numerical limits for any discharge of decant water associated with dredging or other construction activities. (Riverkeeper)

Response: The Department agrees. The permit will be modified to indicate that decant water will be subject to the discharge limits and conditions in permit condition 58.

Permit Condition 28

Comment: Is the 3;1 slope achievable, and is this area included in the impact analysis?
(Saunders)

Response: The Department's experience on similar projects suggests that 3:1 is an appropriate side slope and is achievable to minimize dredging and accomplish the purpose establishing a

work zone that will limit the total amount of sediment re-suspension due to prop wash and other work activities. The Department has included the entire area to be dredged, including the slope, in its assessment of impacts.

Permit Condition 35

Comment: In addition to removing the one sediment mound described in the permit, the state should also commit to removing additional highly contaminated sediment mounds created by the existing bridge, in order to allow the river habitat to restore itself following bridge construction. (Riverkeeper 2/6 Public Hearing)

Response: As discussed in Appendix E of the FEIS, “the gradual erosion of some areas of contaminated sediment following the removal of the bridge would be expected to comply with the conditions anticipated to be issued by the NYSDEC under Section 401 water quality certification for the project and would not be expected to result in adverse impacts to water quality of the Hudson River. Furthermore, if in the event the erosion rate resulted in a sediment loading approaching that of the dredging operation, they would be eroded quickly and result in elevated dissolved constituent concentrations for a very short time in the vicinity of the mounds, and would not result in adverse impacts to water quality.” FEIS, Appendix E at E-17. Under natural conditions, the sediment mounds are expected to erode at a rate that will not result in water quality exceedances for chemical constituents and the mounds will thus “restore themselves” without compromising water quality in the vicinity of the mounds. East Sediment Mound #3 was the only mound identified in the FEIS analysis where concentrations of contaminants in the upper few feet of sediment were well above the Class C sediment quality threshold value identified in TOGS 5.1.9.

Permit Conditions 36-39

Comment: The source, size and placement method of armoring materials must be specified before work can be authorized. (Saunders)

Response: The Final EIS demonstrates to the Department's satisfaction that armoring will reduce prop induced re-suspension and associated dispersion of sediments during construction. Based upon the application, supplemental submissions, the documents dated December 28, 2012 and January 3, 2013 noted in the draft permit, sufficient details are available so that the applicant can develop a plan based upon this data which, when approved by the Department, will ensure that armoring does not result in any unanticipated impacts.

Comment: The size of armoring materials is too large to provide optimum habitat for benthic species and reducing the depth of the dredging may reduce the rate of sediment deposition in the shallower dredged area. (Scenic Hudson)

Response: The Department acknowledges the comment. The Department (and others) submitted comments on the draft EIS concerning the rates of sedimentation and re-colonization of the dredged area by benthic organisms. The Final EIS demonstrates to the Department's satisfaction that the impact of armoring is temporary and that natural sedimentation will cover the armoring in a reasonable, albeit not precisely defined, period. Moreover, the shallower dredged work area may or may not reduce the rate of sedimentation – the comment provides no support for this assertion. But even if the rate of sedimentation is less, there is no apparent reason to conclude that the reduced depth of dredging will materially increase the time required for re-colonization of the impacted area by the benthic community. Benthic recovery of the dredged area will be monitored as required by conditions 49 and 50 of the permit. Sediment redeposition will be specifically studied as part of the post-construction monitoring of the

benthic community, and as detailed in the benthic recovery study plan. As stated in the FEIS in response to similar comments, “much of the benthic community found within the Hudson River exists in the upper 4 to 5 inches of sediment. Therefore, redeposition on the order of 4 to 5 inches would provide sufficient substrate for restoration of a soft-bottom benthic community.” FEIS at 24-239. In the event that deposition of fine sediments proceeds more slowly than expected, recolonization by benthic organisms from the surrounding substrates will nevertheless occur. Benthic organisms that would provide sources of forage for fish would be expected to colonize the sand and gravel bottom during the initial period following dredging and armoring. This comment presents no technical information or supporting materials that would trigger a reevaluation of this conclusion or the permit conditions.

Permit Condition 40

Comment: The lack of an enforceable deadline for implementation of the long-term sturgeon monitoring program fails to provide the degree of protection required by state and federal law. (Riverkeeper, Saunders)

Response: This comment appears to misinterpret the provision in Permit Condition 40.A which requires that the sturgeon monitoring stations will be in-place within 120 days after the effective date of the permit.

Comment: To provide the greatest protection to sturgeon and satisfy applicable state and federal laws, the fish tracking requirements in Condition 40 must be in-place and operational prior to commencing in-river activities. (Riverkeeper)

Response: The permit will be revised to make it clear that fish tracking receivers are range tested; installed and operational prior to driving of piles to be used in the replacement of the bridge or dredging. However, the permit will also authorize the installation of 15 test piles. Like the

demonstration project performed in 2012, these test piles will be used to generate data some of which will help optimize the design of sound attenuation systems. Some pile demonstration activities may be authorized before the fish tracking receivers are fully range tested; installed and operational. Based upon the results of the 2012 demonstration project, the Department believes that pile driving can be sequenced in this manner without any unanticipated impacts to sturgeon.

Permit Condition 41

Comment: Weekly summaries of daily fish surveys should be disclosed simultaneously to DEC and the public. (Riverkeeper)

Response: The Department does not believe that weekly summaries of daily fish surveys should be disclosed simultaneously to DEC and the public. Nevertheless, the applicant has implemented an extensive public outreach program. The applicant has also committed to promptly post final data on the project website.

Permit Conditions 45 - 51

Comment: The permit cannot authorize work which requires future plans to be submitted. (Saunders)

Response: The Department disagrees. Based upon the application, supplemental submissions, the documents dated December 28, 2012 and January 3, 2013 noted in the draft permit, sufficient details are available so that the applicant can develop the final, detailed plans based upon this data which, when approved by the Department, will ensure that construction of the project can proceed.

Comment: Piles which are not fully removed may float when the load is removed. (Saunders)

Response: The comment provides no support for this assertion and the Department has no information to suggest that piles will float. Moreover, the permit requires removal of all debris.

Permit Condition 46

Comment: Demolition must be conducted in a manner that minimizes the re-suspension of sediment. (Riverkeeper)

Response: The Department agrees. The permit will be revised accordingly.

Comment: Condition 46 only prohibits violations of the “substantial visible contrast” standard beyond the 500 foot mixing zone during demolition activities. The Draft Permit must be revised to state that “Bridge demolition must be conducted in a manner that minimizes the resuspension of sediment, and does not cause or contribute to a violation of water quality standards outside a mixing zone with a 500 foot radius of the immediate work area.” (Riverkeeper)

Response : Removal of the existing bridge is subject to the water quality requirements and monitoring provisions of draft permit conditions 56-63. The Department does not believe that any further revisions to the permit are required.

Permit Conditions 49 - 51

Comment: All surveys required should be disclosed to the public after they are received by the Department and finalized. (Riverkeeper)

Response: The surveys submitted in response to Permit Conditions 49 - 51 will be available from the Department through normal channels. The applicant has implemented an extensive public outreach program. The applicant has also committed to promptly post final data on the project website.

Permit Condition 51

Comment: Consistent with the FEIS, the permit must prohibit blasting. (Riverkeeper)

Response: The permit need not prohibit an activity for which no authorization has been requested. Nevertheless, to avoid any ambiguity the permit will be revised to prohibit blasting

for purposes of demolition of the existing bridge.

Permit Condition 56

Comment: The permit should include additional details concerning the required water quality monitoring plan. (Riverkeeper, Scenic Hudson)

Response: The permit has been revised to ensure that water quality monitoring be conducted 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 monitoring plan must: (i) describe procedures for background sampling, and sampling at the edge of a 500-foot mixing zone; (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. These changes resolve this comment.

Permit conditions concerning the requirements to be met, the frequency of sampling, the need for background sampling, what activities must be monitored and where monitoring shall occur were also revised. The permit was also modified to specify laboratory methods, certification requirements and final reporting requirements.

Permit Condition 58

Comment: WQCs cannot allow any discharge of any substances on the 303(d) impaired list. (Scenic Hudson)

Response: The permit was revised to resolve this comment. In any event, the Department disagrees. The national policy announced at 33 U.S.C. § 1251(a)(3) prohibits the discharge of toxic pollutants in toxic amounts. The comment provides no legal authority nor factual basis to

support a total prohibition on any discharge of any substances on the 303(d) impaired list. This WQC is being sought for short term construction activities which will not increase the mass of pollutants in the Hudson River or introduce any new pollutants. This is not a discrete point source. Rather, the impacts on water quality would be triggered by dredge and prop induced re-suspension and associated dispersion of sediments during construction. The applicant has implemented a sediment sampling program and characterized the sediment quality. Moreover, the applicant has submitted modeling which demonstrates that the extent and duration of re-suspension of sediments which exhibit elevated levels toxic pollutants would be extremely limited. See Final EIS, Appendix E, July 2012.

Comment: The permit violates New York’s anti-degradation policy. (Scenic Hudson)

Response: The permit was revised to resolve this comment. In any event, the stretch of the Hudson River at the project site has been classified as a Class SB water, meaning that its best usages are “primary and secondary contact recreation and fishing” and that it “shall be suitable for fish, shellfish, and wildlife propagation and survival.” 6 NYCRR § 701.11. DEC has determined that the Hudson River at the project site does not meet the SB standard for fishing and has accordingly listed it on its “impaired waters” list pursuant to CWA § 303(d). Final New York State Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy at 24, listing for Hudson River, Class SB, portion (1301-0094), http://www.dec.ny.gov/docs/water_pdf/303dlistfinal12.pdf. Specifically, DEC states that the Hudson River at the project site does not meet state water quality standards because fish consumption is not recommended due to PCBs and other contaminants brought to the water by contaminated sediment. DEC responds to this condition “by a waterbody specific TMDL or a pollutant/source specific TMDL *or other strategy* to attain water quality standards.” Id.

(emphasis supplied). Marine shellfish harvest for consumption is also presently prohibited in the vicinity of the Tappan Zee Bridge and throughout the Hudson River. As set forth in ECL §41.1 (a), “all shellfish lands in Westchester, Bronx, Kings, New York, Richmond and Queens Counties, are in such sanitary condition that the shellfish thereon shall not be taken for use as food and such are designated as uncertified areas . . .” Thus, as a general matter, the presence of chemical contaminants in the sediments means that shellfish will be exposed through their association with the contaminated substrate whether or not the sediments are resuspended as a result of the proposed project.

Comment: Mixing zones may not be appropriate in waters which are impaired for PCBs or toxic chemicals which are carcinogenic, mutagenic, or teratogenic.. (Riverkeeper)

Response: The permit has been revised and this comment has been resolved. To the extent that a response is required, the Department believes that it has discretion to allow temporary exceedances of water quality standards for PCBs and chemicals which are carcinogenic, mutagenic, or teratogenic from short-term disruptions caused by dredging and provided that they do not impair the integrity of the water body as a whole and that conditions are not lethal to organisms passing through or enveloped by the mixing zones. TOGS 5.1.9 establishes the process defining a mixing zone for dredging projects. Pursuant to this guidance, the Department has taken into account the nature of the contaminants; the lack of sensitive water uses (beaches or water intakes) in the proximity of the proposed dredging and the other permit conditions and BMPs which will protect sensitive life stages of important biological resources in the vicinity of the dredging, and made the necessary site-specific determination that the default 500 foot mixing zone should be allowed for all know contamination.

Comment: Exceedances of Water Quality Standards cannot be permitted outside – or beyond the edge of - mixing zones. (Scenic Hudson, Riverkeeper)

Response: The Department acknowledges this comment and has revised the permit to resolve this concern.

Comment: Section 401 of the Clean Water Act contains a statutory mandate that the State must act upon a request for certification within a “reasonable period of time (which shall not exceed one year.” Riverkeeper has serious concerns regarding the timing of the NYSDEC’s acceptance and review of comments from the public and interested parties and the potential for the Department to be unable to complete the required, meaningful review of these comments prior to the Clean Water Act’s statutory waiver deadline. (Riverkeeper)

Response: The permit will be issued within the time mandated by Section 401.

Request for Adjudicatory Hearing

Riverkeeper and Scenic Hudson each requested a further hearing on the permit. However, on March 22, 2013, those requests were withdrawn. Accordingly, there is no need for an adjudicatory hearing.

TZB Comments

Written Comments:

1. Dewayne Fox, Ph.D., Delaware State University
2. Lynn J. Fisher, Cortland Manor, New York
3. Alexander Saunders, Garrison, New York
4. Joshua Verleum, Esq.
Phillip Musegaas, Esq.
Riverkeeper, Ossining, New York
5. Hayley Carlock, Esq.
Scenic Hudson, Inc., Poughkeepsie, New York
6. James V. Graham, Cortland Manor, New York
7. Emily C. Fisher Cortland Manor, New York

Testimony at Public Hearings:

February 6, 2013

1. Peter Fischer, Cortland Manor, New York
2. Phillip Musegaas, Esq.
Riverkeeper, Ossining, New York

February 7, 2013

3. Alexander Saunders, Garrison, New York
4. Joshua Verleum, Esq.
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5. Hayley Carlock, Esq.
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