10.0-1 INTRODUCTION

This chapter summarizes and responds to comments on the Water for the Future Program: Delaware Aqueduct Rondout-West Branch Tunnel (RWBT) Repair Draft Environmental Impact Statement (DEIS), published on December 20, 2011. Oral and written comments were received during three public hearings held by the New York City Department of Environmental Protection (DEP): on January 23, 2012, at Town of Newburgh Town Hall, 1496 Route 300, Newburgh, NY; on January 24, 2012, at Wappingers Junior High School, 30 Major McDonald Way, Wappingers Falls, NY; and on January 25, 2012, at Wawarsing Town Hall, 108 Canal Street, Ellenville, NY. Written comments were accepted from issuance of the DEIS through the public comment period, which was scheduled to close on February 17, 2012, but extended to March 9, 2012.

Chapter 10 is organized as follows:

- Section 10.0-2, "Organizations and Individuals That Commented," alphabetically lists the elected officials, public agencies, organizations, community residents, and others that provided relevant comments on the DEIS.
- Section 10.0-3, "Comments and Responses," summarizes and responds to each substantive comment. The comments are organized by subject area and generally follow the chapter organization of the DEIS. Where multiple comments were made on the same topic, comments are grouped together. Following each comment is the name of the organization or individual that made the comment, as listed in Section 10.0-2. Responses follow each comment. The full text of public agency comments, written comments, and public hearing transcripts is available for review at the New York City Department of Environmental Protection, 11th Floor, 59-17 Junction Blvd, Flushing, NY.

Where relevant and appropriate, changes and other edits to the DEIS based on public comments received have been incorporated into the Final EIS (FEIS). However, with the exception of minor editorial changes to graphics for the FEIS which are noted in some responses below, for ease of review, additional text added to the individual FEIS chapters are also embedded within the appropriate responses below in this chapter.

10.0-2 ORGANIZATIONS AND INDIVIDUALS THAT COMMENTED

1. Ruth K. Abrahams, Executive Director, Gomez Foundation for Mill House, written comments dated February 13, 2012. (Abrahams)
2. Bridgette Anderson, oral comments dated January 24, 2012, and written comments dated November 13, 2011 (B. Anderson)
3. Nick Anderson, oral comments dated January 24, 2012 (N. Anderson)
4. Karen Arent, RLA, Town of Newburgh Planning Board, written comments dated January 19, 2012 (Arent)
5. Scott Ballard, Deputy Regional Permit Administrator, New York State Department of Environmental Conservation, Division of Environmental Permits, Region 3, written comments dated March 9, 2012 (Ballard)
6. Henry Bartosik, written comments dated March 13, 2012 (Bartosik)
7. Robert Bell, oral comments dated January 23, 2012 (R. Bell)
8. William Bell, oral comments dated January 23, 2012 (W. Bell)
9. Jim Beretta, oral comments dated January 23, 2012, and written comments dated February 8, 2012 (Beretta)
10. Clifford Browne, Town of Newburgh Planning Board, written comments dated January 19, 2012 (Browne)
11. Scott Carlsen, Supervisor, Town of Wawarsing, oral comments dated January 25, 2012 (Carlsen)
12. J. Stephen Casscles, oral comments dated January 23, 2012, and written comments dated October 7, 2011, January 26, 2012, and February 2, 2012 (Casscles)
13. Bryan Cocks, Town of Newburgh Planning Board, written comments dated January 19, 2012 (Cocks)
14. Mary A. Colligan, Assistant Regional Administrator for Protected Resources, U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Northeast Region, written comments dated January 19, 2012 (Colligan)
15. Brook Crossan, P.E., President, MACK Associates, LLC, Town of Wappinger consultant, written comments dated February 10, 2012, and revised March 6, 2012 (Crossan)
16. Leonard Distel, oral comments dated January 25, 2012 (L. Distel)
17. Tim Distel, oral comments dated January 25, 2012 (T. Distel)

18. Emily S. Dozier, AICP, Planner, Dutchess County Department of Planning and Development, written comments dated January 4, 2012, and March 2, 2012 (Dozier)
19. Richard Eisinger, oral comments dated January 25, 2012 (Eisinger)
20. Bruce Flower, written comments dated February 20, 2012 (Flower)
21. Dean C. Frazier, Commissioner, Delaware County Department of Watershed Affairs, written comments dated February 28, 2012 (Frazier)
22. Robert Gray, P.E., President of Morris Associates Engineering Consultants, PLLC (Town of Wappinger Engineer), written comments dated February 2, 2012, and revised March 1, 2012 (Gray)
23. Gregory Graziano, Superintendent, Water Authority of Great Neck North, written comments dated January 26, 2012 (Graziano)
24. Manna Jo Greene, Environmental Director, Hudson River Sloop Clearwater, oral comments dated January 24, 2012 (Greene)
25. Joan Homovich, written comments dated February 15, 2012 (Homovich)
26. James P. Horan, Vergilis, Stenger, Roberts, Davis & Diamond LLP, written comments dated February 28, 2012 (Horan)
27. James P. Horan and Albert. P. Roberts, Vergilis, Stenger, Roberts, Davis & Diamond LLP, written comments dated March 5, 2012 (Horan/Roberts)
28. Kate Hudson, Watershed Program Director, and William Wegner, Staff Scientist, Riverkeeper, written comments dated March 9, 2012 (Hudson/Wegner)
29. Rita Hughes, oral comments dated January 23, 2012, and written comments dated March 6, 2012 (R. Hughes)
30. Tim Hughes, oral comments dated January 23, 2012 (T. Hughes)
31. Joseph E. Kelley, P.E., Assistant Director of Engineering, Dutchess County Department of Public Works, written comments dated March 9, 2012 (Kelley)
32. Susan G. King, Director, Nassau County Department of Health, written comments dated February 13, 2012 (King)
33. Eungjun Lim, written comments dated February 26, 2012 (Lim)
34. Kenneth Mennerich, Town of Newburgh Planning Board, written comments dated January 19, 2012 (Mennerich)
35. James P. Molinaro, Staten Island Borough President, written comments dated March 8, 2012 (Molinaro)
36. James W. Osborne, Town of Newburgh Engineer, written comments dated March 9, 2012 (Osborne)

37. Charlie Pelella, oral comments dated January 23, 2012 (Pelella)
38. Rand Perry, oral comments dated January 24, 2012 (Perry)
39. Ronald and Theresa Plimley, written comments dated February 21, 2012 (Plimley)
40. John Plonski, Assistant Commissioner, Water Resource Management, New Jersey Department of Environmental Protection, written comments dated January 20, 2012 (Plonski)
41. Jim Pratt, oral comments dated January 24, 2012 (Pratt)
42. Donald Pritchard, oral comments dated January 24, 2012 (Pritchard)
43. Albert P. Roberts, Vergilis, Stenger, Roberts, Davis & Diamond, LLP (Town of Wawarsing legal counsel), written comments dated January 26, 2012 (Roberts)
44. Michael Sassi, P.E., Regional Highway Work Permit Coordinator, New York State Department of Transportation, Region 8, written comments dated January 19, 2012 (Sassi)
45. Christopher Smart, oral comments dated January 24, 2012 (C. Smart)
46. Wendy Smart, oral comments dated January 24, 2012 (W. Smart)
47. Laura Smith, oral comments dated January 25, 2012 (L. Smith)
48. David A. Stilwell, Field Supervisor, U.S. Department of the Interior, Fish and Wildlife Service, written comments dated February 2, 2012 (Stilwell)
49. David H. Stolman, President, Frederick P. Clark Associates, Inc., Town of Wappinger planner, oral comments dated January 24, 2012, and written comments dated February 8, 2012, and revised February 29, 2012 (Stolman)
50. Frederick W. Roe, written comments dated March 9, 2012 (Roe)
51. John Rooney, written comments dated March 10, 2012 (Rooney)
52. Joan Ryan, written comments dated March 2, 2012 (Ryan)
53. Fred Sickels, Director, division of Water Supply & Geoscience, New Jersey Department of Environmental Protection, written comments dated March 9, 2012 (Sickels)
54. Laura Smith, oral comments dated January 25, 2012, and written comments dated March 6, 2012 (L. Smith)
55. David H. Stolman, President, Frederick P. Clark Associates, Inc., Town of Wappinger planner, oral comments dated January 24, 2012, and written comments dated February 8, 2012, and revised on February 29, 2012 (Stolman)
56. Doreen A. Tignanelli, oral comments dated January 25, 2012, and written comments dated February 6, 2012 (Tignanelli)
57. Karen Timko, Esq., Director, Environmental Compliance and Services, MTA Metro-North Railroad, written comments dated March 9, 2012 (Timko)

58. Meredith and David VanEtten, written comments dated March 5, 2012 (VanEtten)
59. Ed Venuti, written comments dated March 1, 2012 (Venuti)
60. Nicholas D. Viest, Chair, Manhattan Community Board 8, written comments dated February 9, 2012 (Viest)
61. June Visconti, member of Town of Wappinger Planning Board, oral comments dated January 24, 2012 (Visconti)
62. Bill Wegner, Riverkeeper staff scientist, oral comments dated January 25, 2012 (Wegner)
63. Mike Wendel, oral comments dated January 25, 2012 (Wendel)
64. Kenneth Wersted, P.E., Project Manager (Town of Newburgh engineer), Creighton Manning Engineering, LLP, written comments dated January 19, 2012 (Wersted)
65. June Weyant, oral comments dated January 24, 2012 (Weyant)

10.0-3 COMMENTS AND RESPONSES

10.0-3.1 EXECUTIVE SUMMARY

Note: Any revisions in the DEIS Executive Summary have also been made, as appropriate, in all other relevant sections of the FEIS.

Comment 1: Figures S-14, S-15, and S-16 should be clarified. U.S. Route 9W is not on the east side of the Hudson River and the road in question is a town road, River Road. (Gray)

The alignment of the overhead utilities on Figure S-14 should be clarified. Wires always run straight (in plain view) between towers and poles, not along a curved alignment as shown. (Gray)

The site construction equipment, buildings, etc., shown on Figures S-15 and S-16 should be revised to match the site plan layout. Will all the facilities and equipment shown on Figure S-15 remain in place as shown on Figure S-16? (Gray)

Figure S-16 should be based on the topo per the regrading for Phases 1 and 2, not the site as it exists before the project is started (i.e., the existing conditions today). Figure S-16 should also show the location of the (purple) pump shafts depicted on Figure S-5. (Gray)

After page ES-10. (Noise) Figures S-15 and S-16 have River Road labeled as U.S. Route 9W. After page ES-22. Figure S-22 and associated text will need to be revised to reflect the changes requested elsewhere.

Consideration should be given to using an aerial photo so individual homes and the network of local streets can be more easily seen. (Crossan)

Response 1: Labels on Figures S-14, S-15, and S-16 and overhead utilities on Figure S-14, along with comparable figures in Chapter 2 have been revised for the FEIS. These figures are graphics intended to depict the changes from the site before the proposed project is undertaken, and topography was not changed between phases. The facilities and equipment during Phase 1: Site Preparation and Phase 2 Shaft Construction (Figure S-15) will continue to remain at the site during Phase 3: Bypass Tunnel Excavation and Phase 4: Bypass Tunnel Lining, Project 1 Demobilization, and Preparation for Project 2B (Figure S-16). The areas depicting the locations of major fixed elements of Project 1, such as shafts and inundation plug areas, would be in the locations shown. However, the locations shown for overhead utilities and equipment on these drawings are approximations, with final locations determined by the contractor. Areas for temporary storage of excavated material, support construction equipment and vehicles, and drill rigs would be located on the east connection site depending on the construction phase.

Comment 2: Figures S-21 and S-22 should be corrected. The dark blue-colored area near the middle of each page is the west connection site, not the east connection site as identified in the legend. (Gray)

Response 2: The legend in Figure S-21 has been corrected for the FEIS. The legend in Figure S-22 in the DEIS correctly showed the east connection site.

Comment 3: Page ES-2: This project will result in significant adverse impacts to visual character, historic and archaeological resources, natural resources and water resources, and public health. Further, while the DEIS maintains that the significant adverse impacts on traffic and noise will occur, that such effects will only be temporary. This language does not accurately reflect the true nature of this project, which will last for approximately 10 years, be conducted 5 to 7 days a week, both day and night, throughout the year. (Casscles)

Describing impacts as “temporary” for a project spanning 10 years is inadequate. (Tignanelli)

The word temporary is used 399 times in your report. The definition of the word temporary is lasting for a limited time. The impacts caused by this project are not temporary when you live in any of the neighborhoods affected. It also stated that there is a possibility that due to the extended duration and intensity of construction that there may be an effect on the

short-term marketability of residences or lots immediately adjacent to the east and west connection sites. However, this effect, if it were to occur, would be temporary and fully be confined to the construction period. Ten years is not temporary. Three shifts, 24 hours a day for 5 or 7 days is not a temporary impact. It is significant. (B. Anderson)

Descriptive language is somewhat misleading in characterizing potential noise impacts as "temporary," as construction—and associated noise from construction—is anticipated to take 7½ to 8 years to complete. It is likely that nearby residents will not perceive anticipated noise impacts during this multi-year time period as "temporary." The FEIS should make a distinction between truly "temporary" noise impacts and longer-term noise impacts. (Ballard)

Response 3: In each section of the DEIS, a detailed, conservative presentation of the potential adverse impacts that would result from Project 1 construction was undertaken. In addition, for several areas of technical study, such as traffic and noise, the potential impacts from construction of Project 2B in relation to connection of the tunnel were also included in the DEIS. Where potential adverse impacts were identified for the respective worst-case scenarios, following the approach suggested under SEQRA (State Environmental Quality Review Act), the *2012 CEQR Technical Manual*, and as noted in the Final Scope of Work, the determination of the significance of impacts from construction activities was based on an assessment of the predicted intensity, duration, and the geographic extent of the impacts. The word "temporary" was used for construction because the construction described in the Water for the Future Program would not be permanent, phases of construction would vary, and, ultimately, construction would be complete and the impacts from the construction would no longer occur. Many areas where impacts were identified would no longer occur after construction is complete, and, therefore, the DEIS recognized that due to the criteria listed above, predicted significant adverse impacts would be expected due to the duration of construction. As such, the use of the word "temporary" is intended to indicate that potential significant adverse impacts are not expected to continue once construction is complete.

Comment 4: On page ES-2, in the third full paragraph, there is the first of many "would be" constructions that leave the reader unsure of the applicant's intent (see related comment under "Analytical Framework for Environmental Review," below). The statement that reads "Mitigation measures … are proposed and would be incorporated…" is not a satisfactory commitment from the applicant to actually implement the suggested mitigation

(assuming of course that the Town [of Wappinger] accepted such mitigation measures as satisfactory). The "would be" construction implies that there are conditions (and they are not stated) under which the actions will in fact be implemented.

On page ES-11 there is another of the unsatisfactory "would be" statements: "A DEP field representative would be at each connection site throughout the entire construction period." The sentence should be rewritten to make an affirmative commitment, without any implied and unstated conditions, that a DEP field representative will be on-site.

The statement on page ES-23 in the last paragraph on the page should be augmented to identify that the noise impacts will not (instead of the typical DEIS construction would not) be fully mitigated.

The DEIS uses a grammatical construction /convention, where many statements say the applicant "would" do something, which raises the question, under what circumstances? The DEIS should make affirmative commitments from the applicant, and say the applicant "will" do something. Then the Town (of Wappinger) will know what to expect under the conditions to which the statement refers. The town will not be able to make its SEQR findings (as an involved agency) from the DEIS as written with the conditional grammatical construction. (Gray)

Response 4: Construction and operation of the proposed project is conditioned upon numerous permits and approvals from a number of different agencies as well as the completion and acceptance of the EIS and implementation by DEP. The use of "would" in the DEIS is a standard practice to indicate that an action would occur subject to approval. DEP is committed to implementing any of the specific best management practices, mitigation strategies, or construction monitoring protocols identified in the DEIS.

Comment 5: The statement on Table S-3 regarding dewatering should be clarified and expanded. It appears that only "dewatering" during the tunnel rehabilitation is described, but it is not clear that the existing outfall would be used to dispose of the treated dewatering wastewater (that may instead be disposed of in the stormwater drainage system). The table should be modified to address, in addition, dewatering Shaft 6B during its construction and "unwatering" the existing tunnel shaft. (Gray)

Response 5: Table S-3 represents dewatering treatment and disposal of the resulting wastewater at the east connection site during Project 1. The existing outfall from the blowoff chamber would be used to convey discharges from the dewatering operations during Project 1. Unwatering of the existing RWBT would occur during Project 2B, which is not summarized

in this table and will be addressed in the second EIS or a subsequent environmental review, as appropriate. Therefore, no change for tunnel unwatering was made. See also Comment 275 below for a related comment.

Comment 6: Table S-4 should be clarified, in conjunction with the response to the comments above on Table S-3 regarding dewatering and unwatering.

Table S-4 should be clarified regarding the entry for a New York State Department of Environmental Conservation (NYSDEC) permit for chemical bulk storage. It does not appear that any such storage is shown on the site plans in the DEIS or in the separate site plan submittal. This is not the same as (in the next line) the petroleum bulk storage permit that appears to be associated with on-site diesel fuel storage tank(s). Is the chemical bulk storage perhaps only on the west connection site?

In the section of Table S-4 regarding "area municipalities," for the Town of Wappinger, there should also be an entry regarding the Stormwater Pollution Prevention Plan (SWPPP) acceptance and monitoring.

Table S-4 entries should be clarified and coordinated regarding sanitary wastewater disposal during construction:

1. Under "State," the table lists a NYSDEC Sanitary Wastewater Pump and Haul Approval.
2. Under "Dutchess County," the table does not include an entry regarding sanitary wastewater.
3. It appears sanitary wastewater disposal, including pump and haul, is subject to only Dutchess County Health Department (DCHD) permit/approval.

In the section of Table S-4 regarding "Other Entities," it appears that for the east connection site, DC 911, the school district, and the sheriff and state police (there is no Town police department), and ambulance service should all be listed. If such coordination is intended to be included under "general coordination" with the Town Highway Superintendent, such intent should be clarified. (Gray)

Response 6: At the east connection site with Project 1, which Table S-4 summarized, only dewatering treatment and disposal would be implemented during shaft construction. Unwatering of the existing RWBT would occur during Project 2B, which is not summarized in Table S-4. Therefore, no change for tunnel unwatering was made in the table.

Table S-4 (as well as Table 1-2, which is the same as Table S-4) was modified for the FEIS to identify SWPPP acceptance and monitoring for the Towns of Wappinger and Newburgh. Table S-4 was also modified for the FEIS to include potential DCDOH review of sanitary pump and haul design. Table S-4 only lists anticipated required permits and approvals for Project 1. Where appropriate, additional coordination measures DEP will undertake during construction were noted in the DEIS.

As noted in the DEIS in Section 2.9, "Hazardous Materials," chemical bulk storage (CBS) and appropriate NYSDEC CBS registrations and local approvals would be required for the both connection sites. Final site plans will clarify the location of chemical storage areas and allow for contractor field changes, as appropriate.

10.0-3.2 PROGRAM DESCRIPTION

INTRODUCTION

Comment 7: The RWBT unwatering and repairs and return to service should be clarified to resolve the differences in the DEIS text noted below:

1. In 1.0-1, the DEIS says (near the center of page 1.0-1) that upon project completion, water would no longer flow through the RWBT between the connection points of the bypass tunnel. This appears to assume that the inundation plugs will be constructed.
2. However, on pages 1.0-23 and 1.0-25, the DEIS appears to say water will flow through both the existing alignment and the bypass tunnel simultaneously. (Gray)

Response 7: When the connection to the bypass tunnel and the repairs are completed, water flow would be restored to the Delaware Aqueduct, and water would flow through the RWBT and the newly constructed bypass tunnel of the RWBT. The bypassed portion of the RWBT would no longer be used and no water would flow through the bypassed section of the RWBT. The FEIS has been updated to clarify this point.

OVERVIEW AND CONDITION OF THE RWBT

Comment 8: I was under the impression that possibly water is leaking out of the aqueduct going into the landfill, and that the E. coli that's contaminated our wells could be coming from the landfill instead of from our septic systems.

The only way that I could really prove that is if we were to sink a deep well right in the center of the landfill and monitor that for a month or two and find out if that correlates with the fluctuations of the water table.

And if that were the case, in the center of the landfill, maybe 50 feet off the perimeter of the landfill, maybe even out in an open field in between our house and the landfill where there are no septic systems and you have E. coli in other wells and they also fluctuate at the same rate that turning on and off the aqueduct does, that would be like a smoking gun and that would prove it. (Wendel)

Response 8: The recent study conducted by USGS "Preliminary Analysis of the Hydrologic Effects of Temporary Shutdowns of the Rondout-West Branch Water Tunnel on the Groundwater-Flow System in Wawarsing, New York" did not rely on any monitoring wells in the vicinity of the former landfill in Wawarsing. This comment/question will be referred to USGS for their consideration for future studies.

PLANNING FOR THE REPAIR OF THE RWBT

Comment 9: On page 1.0-6, upper bullet at bottom of page, the DEIS says that Shaft 6 will be used to unwater the tunnel. Compare that to the plans that show separate unwatering shafts directly in line with the existing tunnel bore and clarify the project function. Again on page 1.0-6, the DEIS refers to unwatering the RWBT at Shaft 6, but that appears to be different than the proposal as shown on the site plan drawings. The text and plans should be presented consistently. (Gray)

Response 9: The revised site plan application text and drawings that will be submitted to the Town of Wappinger after the completion of the FEIS will be consistent with the FEIS on these elements. During construction, prior to connection, tunnel dewatering would occur through Shaft 6B. During the connection period, unwatering could potentially occur at both Shaft 6 and Shaft 6B, as well as the unwatering pump shafts (see Figure 1-7) along the existing tunnel alignment.

RONDOUT-WEST BRANCH TUNNEL REPAIR PROGRAM: DESCRIPTION OF PROJECTS 1, 2A, AND 2B

Comment 10: ES-4.4, page ES-16 and 1.0-4.4, page 1.0-23: Regarding the restoration of the (west connection) site on completion of the project, it is noted that the center turn lane and right-turn lane on Route 9W would remain. There will be virtually no demand for the turn lanes after the project; therefore, it is suggested that the roadway be striped back to a two-lane section. Given

the timeline of the project and unknown future pavement conditions, this restriping may require an asphalt overlay by DEP or may be included as part of the routine maintenance of Route 9W by the New York State Department of Transportation (NYSDOT). (Wersted)

Response 10: Based on meetings conducted with NYSDOT before the DEIS was issued, it was determined that the southbound right- and left-turn lanes would remain in place after construction is completed; the northbound left-turn lane space would remain but would be converted to a painted median opposite the southbound left-turn lane.

Comment 11: Regarding the dewatering pipeline, the DEIS is deficient in clarifying: (1) how long this project will take, (2) what side of the road(s) will the pipes be on, (3) where the pipes will be, e.g., under the road or other place, (4) what is the risk is for leaks or flooding to neighboring houses and property from these pipes. What happens to it when the project is over? You are talking about moving a lot of water, and we certainly don't need anything there that's going to rupture and flood houses there. (Beretta)

Response 11: Construction of the dewatering pipeline is anticipated to take approximately 6 to 9 months to complete. Although the final route has not yet been identified, key factors that will influence this decision include: avoiding conflicts with existing underground utilities and minimizing disruption to property owners along the corridor. These considerations would likely result in a pipeline that is located under the existing paved roadway for a portion of the alignment, and within the shoulder of the road for the remainder. The pipeline would be designed and constructed using the same standards applied to pressurized water mains to prevent leakage and/or rupture.

Comment 12: On page 1.0-8, bottom of page, the DEIS alludes to work within the RWBT at locations other than Shaft 5A/5B, Shaft 6A/6B. It is recognized that such work is outside the scope of the DEIS, and does not need to be fully described and analyzed in the present DEIS. However, some aspects of the overall project should be further described, as they relate to the work in the DEIS:

1. In several places, the DEIS says the RWBT will be unwatered at Shaft 6. Unwatering shafts are also shown on the plans at Shaft 5B, and while not necessarily a concern regarding work at the east connection site, it appears that if those shafts are used to unwater the RWBT, the unwatering process may proceed more quickly and with less other impacts at Shaft 6. The joint, or disjointed, function of the two sets of shafts (the purple columns on Figure 1-7) should be clarified. See also

page 1.0-22 for example for such a description of the pump shaft usages.

2. The DEIS does not appear to describe connector tunnel and Shaft 6 dewatering (different function from RWBT unwatering at Shaft 6), but it appears dewatering will be required at Shaft 6 unless the dewatering operation at Shaft 6B is at a lower elevation (even if hydraulically at a higher elevation) than the floor of Shaft 6, and the Shaft 6B dewatering will keep Shaft 6 dry. The project intent should be clarified. (Gray)

Response 12: There are several ways in which water would be removed during various phases of construction. Pumps would be installed in Shaft 6B to assist in unwatering during all phases of construction. However, additional capacity is required when the RWBT is taken out of service during the connection phase (Project 2B). At that time, DEP would unwater the RWBT from Shaft 6 and if the inundation plugs are necessary, the proposed pump shafts proposed to be located adjacent to the inundation plugs along the RWBT on the Shaft 5B and 6B sites. Once the RWBT is unwatered, the bypass would be connected. During this phase of construction, any inundation flows would be removed from Shaft 6, Shaft 6B, and, if required, the pump shafts.

Comment 13: On page 1.0-10, the DEIS again describes the inundation plugs as a contingency measure, but the DEIS does not describe the permanent means to close off the section of the original RWBT that will be bypassed by the newly construction bore. The project description should be more complete. (Gray)

Response 13: The bypassed section of the existing RWBT would be permanently plugged by a bulkhead that would be built within the connection chamber at the two ends of the bypass tunnel. The bypassed portion of the RWBT would no longer be used, and no water would flow through the bypassed section of the RWBT.

Comment 14: Figure 1-13 should be corrected. The heavy dark blue outline defines the east connection site, per drawing title but is not as identified in the legend. Although not critical to understanding the DEIS, it appears the buildings shown and labeled on this figure do not match the building names on other drawings, including the separate submittal site plan drawings. It would be helpful if all illustrations matched. (Gray)

Response 14: Figure 1-13 has been revised for the FEIS to match the site plan drawings that will be submitted after completion of the FEIS, and to reflect the additional noise control barriers.

Comment 15: The reference on page 1.0-17 to a storm drainage system that "would be developed" is not acceptable. A full SWPPP shall be prepared and will be reviewed in conjunction with the (separate submittal) site plan. The DEIS must consider and address stormwater impacts and mitigation. See also further comments below under "Infrastructure." (Gray)

The discussion of stormwater impacts and proposed mitigation lacks detail. The DEIS states that Project 1 will result in an increase in impervious area on the west connection site, but does not quantify the increase.[1] In addition, the DEIS proposes to site a permanent stormwater treatment basin at the entrance to the west connection site, but provides no detail or illustrations of pre-and post-construction drainage patterns or stormwater flows at specific design points within the altered catchments.[2] Although the "proposed stormwater management system would be designed to capture and treat stormwater runoff for treatment of the Water Quality Volume,"[3] the DEIS provides no specific sizing criteria for the proposed stormwater management practices. This information is important because, due to the significant change in elevation between the eastern and western portions of the site, preparation of the site will require "a substantial site grading effort,"[4] which will substantially change stormwater drainage patterns and flows. These issues should be addressed in the FEIS.

The east connection site is adjacent to the Hudson River, which will receive stormwater and treated groundwater recovered during dewatering operations. The DEIS proposes to retain and modify the existing stormwater detention basin.[5] However, as with the west connection site, no detail is provided regarding sizing criteria for the modified basin or post-construction stormwater flows. This information should be provided in the FEIS for the same reason stated above. (Hudson/Wegner)

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[1] *See id.*, at 2.14-12.

[2] See id.

[3] See id.

[4] *See id.*, at 2.1-3. Site preparation will require 180,000 cubic yards of cut and 230,000 cubic yards of fill.

[5] *See id.*, at 2.1-14.

Response 15: Subsequent to the issuance of the DEIS, a full draft SWPPP for each connection site was prepared and submitted to the respective municipalities for their review. As part of the SWPPP, Erosion and Sediment Control Plans and project phasing plans have been developed for both sites. These plans address the clearing and grading activities during each phase of construction. The stormwater management system would capture and treat the stormwater runoff from new or redeveloped impervious surfaces, which would address both construction and post-construction stormwater flows. As part of the SWPPP, the long-term Inspection and Maintenance Plan would ensure performance and function of the stormwater management systems. The draft SWPPPs have been enclosed as Appendix 2.14-1 and 2.14-2 in the FEIS, and Section 2.14 of the DEIS, "Infrastructure," addressed the potential impacts associated with the proposed construction activities. The DEIS concluded that there would be no significant adverse impacts from stormwater, and, therefore, with the SWPPP elements in place, no mitigation for stormwater would be required. Section 2.14, "Infrastructure," of the FEIS provides additional information and updates related to the SWPPP.

Comment 16: We expect our DEIS 2 years from now, and no work to begin in Wawarsing until 2020. And if it took 15 months, we could imagine it could be 9 to 10 years before we see really. We needed help years ago, we need help now. I'm disappointed. I know that this (DEIS) is for Project 1. But there is so little reference to Wawarsing, which is suffering now. And there was virtually no addressing of that. So again, give me the emergency money. Give me the ability to at least put a Band-Aid on that area of Wawarsing and relieve these people from the suffering that they have because of the tunnel. (Carlsen)

I find myself here with all my neighbors in a courtroom. None of us have committed any crimes, but I find myself sentenced to 8 to 10 more years. I never intended on staying in my home. My thing was to fix it up, put my kids in college, and go elsewhere. And now I'm condemned for 8 to 10 years, and so are all the homeowners. (Eisinger)

Money is being wasted by the city, to destroy houses that could be saved, with the addition of water sewage and drainage. We need water, sewage, and drainage just like any other 21st century human beings! All of the money being wasted on this test should be spent on water, sewage, and drainage for those in the vicinity of the tunnel leak. The tunnel should actually be fixed, not patched. (VanEtten)

My concern is about this water problem is getting worse, more than I can handle. When Irene hit, I had 4 feet of water in my basement (my well is

in my basement). Mold is taking over. It's really a nightmare to keep going and the worry when it rains hard or for a couple of days. Please try and make these people understand the water problem (in Wawarsing). (Ryan)

We will not be able to relocate for the amount of money we are likely to be offered as part of any buyout that is in the works. What we would really prefer is to be given money to actually remain in our house. We would continue to be taxpayers for the town, county, and state, and we would do this for much less than it would cost us to move.

Please consider doing the right thing by residents of this area who prefer to remain in their homes! We always planned to retire at this property. Since the problems with flooding and leaking have been going on, our quality of life has been greatly diminished. What modest future we envisioned for ourselves here seems to be gone!

Demolishing these houses, and this neighborhood, is actually a crime in and of itself. To us, this is your cheapest escape from your responsibilities. To us, you are actually responsible for water, sewage, drainage, and fair compensation for destroying our way of life. (VanEtten)

Response 16: In an effort to begin repair work to the Delaware Aqueduct as soon as possible, the DEIS described the repairs to leaks in Wawarsing to allow work to begin on the bypass portion of the project. The second EIS or a subsequent environmental review, as appropriate, will further analyze any potential impacts associated with the Wawarsing repair, as necessary. In the meantime, DEP has been providing local assistance ($650,000) to the Town of Wawarsing since 2010 by supporting the installation of ultraviolet disinfection units and sump pumps for certain homes. DEP also commissioned a groundwater study by USGS to determine the role of the tunnel leak in the groundwater profile for this area. (While the USGS report documented dramatic rises in the water table due to seasonal precipitation, the report also attributes a smaller volume of water from the Delaware Aqueduct.) In addition, DEP has committed $3.7 million to match state funding used for the buyout of flooded homes in the vicinity of the Delaware Aqueduct.

Comment 17: Dealing with the problem in the here and the now is the most critical thing to finally get relief for the people in Wawarsing. But I'm hoping that there will be sort of a contingency plan over the long term, just on the back burner. So instead of putting a pipeline in through an area and then years down the line having problems and then having to spend billions of dollars

and time and effort to basically turning water around, I hope there will be something to deal with these problems in the future. (T. Distel)

Response 17: DEP will address long-term monitoring of the Wawarsing repair in the second EIS or a subsequent environmental review, as appropriate.

Comment 18: I think there's a way for DEP to provide Wawarsing with public water through the shaft up on Jenny Brook Road and run the pipes into our water system in the Nappy Trailer Park, where we are going to be putting in a filtration system and eventually put in another $750,000 water tank. These filtration systems are installed to prevent E. coli in the water. So if we remove filtration systems tomorrow, if the DEP doesn't provide us more money, then we are going to have a contaminated water supply in Wawarsing. Wells could dry up, which is a possibility. And we are going to need more financial assistance down the road from DEP. And we really need a commitment. (L. Distel)

Response 18: As discussed in the DEIS, DEP will be undertaking an evaluation of the potential effects to drinking water wells as a result of the leak repair in the second EIS or a subsequent environmental review, as appropriate.

Comment 19: We don't believe that repairing the tunnel with lime is a good idea. This seems to be a temporary fix that could potentially further poison our groundwater. Per the USGS study, this was tried somewhere along the tunnel, in the 1970s, and it failed. Our section of the tunnel leaks like a sieve. A major section of the tunnel here runs directly through a cave. It has no support under or around it. We believe the Wawarsing section of the tunnel should be rebuilt, in a similar fashion to the Roseton tunnel. (VanEtten)

Response 19: Comment noted. The tunnel is not believed to run through any caves. Based on tunnel investigations to date, there is no evidence of a substantial void in the area of Wawarsing.

Comment 20: $4 million to do a lime test which may or may not be a realistic mechanism to repair the tunnel is ludicrous! It seems to be a complete waste of money. Using lime to patch the tunnel sounds like the cheapest, most improbable, most experimental way out. No one even knows if this is a viable way to solve the problem. The residents of this town are not lab rats. The amount of lime needed to complete the patching of the tunnel will undoubtedly leach into the groundwater, further poisoning our wells.

If all of the engineers and scientists at USGS and DEP can't come up with a better plan than this for our area, two things are clear: (1) the people here

have less value than the residents of New York City, and (2) we should be well compensated to give up our homes and livelihoods in deference to the more "inherently valuable" people that reside in New York City. (VanEtten)

Response 20: DEP is exploring all feasible and practicable means to address the leakage in the Delaware Aqueduct. This includes the use of lime in the leak stabilization pilot study as well as moving forward with the repair program described in the DEIS. The purpose of this duel path approach is to explore options available to expedite the repair of the tunnel.

Comment 21: You had plan A you mentioned, you've got plan B. Now is the time to do the environmental impact study on plan C. I don't think it's going to work. I think they used lime back in the 1940s, killed all the fish in the Rondout.

So if the lime seeps through those cracks, we are going to have another problem with NYSDEC. And we are going to go on and on, and 2020 comes and it's 2030. I understand that the water was leaking in the tunnel after it was built in 1940. And now it's leaking more and more.

So this theory that you have, it may be a good theory. Grouting, it didn't work in Newburgh. You're trying the lime studies, you're going to spend millions on these studies. And if you do take care of these cracks and then, because I feel that the tunnel is deficient and deteriorating, more cracks are going to be created.

So for the people, the grandkids that up come up here, they are going to go back and look at the same problem over and over again. So I think that you should be looking at plan C, not waiting for 7 years from now and say, "Uh-oh, we screwed up, we have to start plan C." Let's do the environmental impact study, the engineering study right now and be prepared in 2020 if this system doesn't work. (L. Distel)

If you pump 40, 50, 60, 70, 100,000 yards of concrete out of the aqueduct into the aquifer, either you win and it seals it up and it fixes the crack, or maybe a 100,000 cubic yards seals up the aquifer and everybody's well gets dried up and you get the houses for 10 cents on the dollar. It's more or less a win situation for the DEP and not for the residents of Wawarsing. (Wendel)

Response 21: Plan A is to grout the tunnel. This is a proven and effective means of reducing infiltration and exfiltration from a tunnel. In the unlikely event the tunnel lining needs additional repair, a steel tunnel inter-liner would be installed, utilizing a greater length than was done in the past. By extending the interliner, the full length of porous rock would be bridged. The current interliner has proved effective – the leaks in Wawarsing are in areas

without the interliner. These methods have been successfully used by DEP over the last forty years during the construction of City Tunnel No. 3. Therefore, the need for a Plan C is not anticipated or required.

PROGRAM APPROVALS AND COORDINATION

Comment 22: As future projects evaluated in the DEIS become finalized, a consultation, pursuant to Section 7 of the Endangered Species Act (ESA) of 1973, as amended, may be necessary. If the proposed project has the potential to affect listed species and it is being approved, permitted, funded, or carried out by a federal agency, the lead federal agency, or their designated non-federal representative, is responsible for determining whether the proposed action is likely to affect listed species.

Based on the information provided to date, the National Marine Fisheries Service (NMFS) encourages the applicant and the federal agency to consider the effects of the proposed action on Atlantic sturgeon and work with NMFS to determine if a conference is required. As the listing status for this species may change, NMFS recommends that the project proponent obtain updated status information from NMFS prior to the submittal of any applications or requests for consultation (see section 10.0-3.11, "Natural Resources and Water Resources," for related comments). (Colligan)

Response 22: Comment noted. DEP has coordinated and will continue to coordinate with NMFS, U.S. Fish and Wildlife Service (USFWS), and NYSDEC with respect to threatened or endangered species throughout the planning and construction of Project 1, as Project 2B plans are advanced, and for the second EIS or a subsequent environmental review, as appropriate.

Comment 23: The most recent compilation of federally listed and proposed endangered and threatened species for each county in New York is available on the USFWS New York field office website (http://nyfo.fws.gov/es/section7.htm). Until the proposed project is complete, we recommend that you check this website every 90 days from the date of this letter to ensure that listed species presence/absence information for the proposed project is current. For additional information on fish and wildlife resources or state-listed species, we suggest you contact the appropriate NYSDEC regional office(s) and the New York Natural Heritage Program Information Services. (Stilwell)

The response letter from the NYSDEC Natural Heritage program is dated January 14, 2011. The letter states that the NYSDEC database is "continually growing as records are added and updated. If this proposed

project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information." An example of an updated record would be the addition of the Hudson River Atlantic sturgeon as a federally endangered species. As more than one year has passed, the NYSDEC Natural Heritage Program should be contacted again as recommended in their response letter.

The January 24, 2011, response letter from NOAA refers to the New York Bight segment of the Atlantic sturgeon as a proposed endangered species. The letter noted that the "listing status of this species may change" and recommended that updated status information be obtained "prior to the submittal of any applications or requests for consultations." On February 6, 2012, the New York Bight segment was added to the Federal Register as an endangered species.

Due to the status change, NOAA's NMFS should be contacted again as recommended. Any discretionary federal action such as funding or approval of a project that may affect a listed species is subject to Section 7 Consultation under the Endangered Species Act. (Tignanelli)

Response 23: The DEIS included an evaluation of the potential effects of Project 1 on shortnose sturgeon and the recently listed Atlantic sturgeon and American eel. DEP will stay abreast of the most recent pertinent regulatory information related to listed and proposed endangered and threatened species before elements of the project that may affect newly listed species are implemented and throughout the planning and construction of the proposed program. DEP will also comply with any legal obligations with respect to endangered and threatened species.

Comment 24: Several proposed activities will likely require permits from NYSDEC but are not noted in the DEIS:

- Dewatering of the new bore tunnel (west side) is proposed via a 30-inch diameter pipeline with discharge to the Hudson River. We assume the outfall will be located on the bank of the river. If the outfall requires disturbance of the bed or embankment of the Hudson River, a Protection of Waters (Stream Disturbance) permit will be required. If excavation or fill below *mean high water* is proposed (rip-rap or other means of velocity dissipation), a Water Quality Certification may also be required from NYSDEC.
- One of the options (dewatering pipeline Option 2, Figure 1-11) proposed for the location of the dewatering pipeline (west) is to a "water course" proximate to the Hudson River. The water course at

this location is considered part of the main stem of the Hudson River and is therefore a Class A waterbody, rather than a Class C as noted in the DEIS. In either case (Option 1 or 2), a Protection of Waters permit (Excavation/Fill Stream Disturbance) is likely required for construction of the outfall to the Hudson River.

- Two aspects of the proposal will require Water Supply permits or Modification to existing Water Supply permits in order to proceed, but are not noted as such in the DEIS: (1) Queens Groundwater Reactivation (former Jamaica Water Supply Company) for the reactivation of the 68 currently unused wells proposed for connection to the New York City water supply; and (2) New Jersey Interconnection for the connection to, and addition of, New Jersey water supplies to the New York City water system.
- Rock crusher. An air emissions permit (Air State Facility Permit) would be required if the proposed mobile (portable) stone crusher exceeds the maximum rated capacity of 150 tonnes per hour.[6] Note that an air emissions permit for combustion equipment (concrete batch plant) may also be required. The limits on combustion equipment contained in Part 201 should be evaluated and additional narrative discussion should be included in the FEIS.
- Article 11 Part 182: Two New York State and federally listed endangered species, the Indiana bat and bald eagle, occur proximate to proposed work locations and may potentially be impacted by construction activities. In addition, nighttime lighting may also impact the Indiana bat. NYSDEC believes that project revisions can lessen potential impacts and that an Article 11 permit will likely not be required if such plan revisions are made. See the section below related to Wildlife and Habitat Concerns for additional information.

Tables S-4, S-5, and S-6, which pertain to approvals required for Projects 1, 2A, and 2B, should be revised to include the above references. To date, no applications for the approvals have been submitted to NYSDEC. (Ballard)

The bald eagle (Haliaeetus leucocephalus) was delisted pursuant to the ESA on August 8, 2001; however, bald eagles remain listed as state-threatened species. Bald eagles are also protected under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act.

[6] See 6 NYCRR 201-3 Exemptions and Trivial Activities

If bald eagles are present in the project area, the USFWS recommends that you follow the Bald Eagle Management Guidelines found on the USFWS's website prior to commencement of work. (Stilwell)

Response 24: DEP submitted a Joint Application to USACE for an individual permit for the project, and to NYSDEC with supplemental information to facilitate its review in the context of Protection of Waters and 401 Water Quality Certification approvals. Included in this information was the identification of the need for approval of the dewatering pipeline outfall under Protection of Waters and 401 Water Quality Certification.

Based on consultations with NYSDEC, our understanding is that no water supply permits or modifications would be expected for the Queens Groundwater Reactivation and New Jersey Interconnection. However, as part of the second EIS or a subsequent environmental review, as appropriate, DEP will coordinate with NYSDEC to determine if any elements of our proposed projects would require new or modified water supply permit(s),

The rock crusher was estimated to have a peak daily capacity of 85 tons per day, much less than the 150 tons per hour threshold requiring an NYSDEC permit per 6 NYCRR 201-3. Concrete batch plants in which the cement weigh hopper and bulk storage silos are exhausted through fabric filters and the batch drop point is controlled by a shroud or other emission control device would also be exempt from NYSDEC permitting. The cement weigh hopper, gathering hopper, mixing loading operations, storage silo chutes, and batch drop points at the concrete batch plant at the west connection site would be required to be vented to a baghouse or filter sock with at least 99.9 percent control efficiency (this would be stipulated in the specifications for the contractor). Therefore, the concrete batch plant would also be exempt from NYSDEC permitting. Engine exhaust emissions from mobile and portable powered vehicles, construction and off-road vehicles and equipment, and/or any other type of mobile or portable engine-powered vehicles or equipment are considered trivial sources under 201-3.3(10) and would not require an NYSDEC air permit. Up to 1.135 megawatts (MW) of power would be generated on the west connection site by a stationary diesel engine generator to provide power during the site preparation phase and the beginning of the shaft construction phase (for a total of 12 to 15 months). This generator would likely remain on-site during the remaining phases of Project 1 and through the connection phases but would be used only for emergency backup in case there is a loss of power on-site. A NYSDEC Minor Facility Registration per 6 NYCRR 201-4 is being pursued for this equipment.

Section 2.8-3.3, "Probable Impacts of Project 1, Shaft and Bypass Tunnel Construction-West of Hudson," and section 2.8-4.3, "Probable Impacts of Project 1, Shaft and Bypass Tunnel Construction-East of Hudson," of the DEIS evaluated the potential impacts to the state- and federally-listed bald eagle nesting and foraging activity due to the construction of Project 1 on the west and east connection sites, respectively. The assessment considered the construction activities that would occur on the construction sites and the buffers recommended in the U.S. Fish and Wildlife Service National Bald Eagle Management Guidelines to avoid disturbance to bald eagle nesting, foraging and roosting. Overall, activities at both the west and east connection sites would be conducted at sufficient distance from bald eagle nest sites and foraging areas to be in compliance with the National Bald Eagle Management Guidelines. DEP will continue to coordinate with the NYSDEC and the USFWS with respect to bald eagle activity in the vicinity of the west and east connection sites and compliance with the Bald Eagle Management Guidelines.

Section 2.8-3.3, "Probable Impacts of Project 1, Shaft and Bypass Tunnel Construction-West of Hudson," and section 2.8-4.3, "Probable Impacts of Project 1, Shaft and Bypass Tunnel Construction-East of Hudson," also evaluated the potential impacts to the federally- and state-listed endangered Indiana bat due to construction of Project 1 at the connection sites. The assessment of potential impacts to Indiana bat considered the results of potential summer roosting habitat assessments conducted on the west and east connection sites, described in detail in Section 2.8 the proposed timing of tree clearing on both sites (i.e., October 1 through March 31, the clearing window recommended by USFWS to avoid any potential for direct effects to Indiana bats from tree removal when more than 10 miles from a hibernaculum), and the construction activities that would occur following site preparation activities. At both sites, the assessment concluded that vegetation clearing during site preparation activities, and shaft and bypass tunnel construction activities (e.g., blasting, nighttime lighting, and increased human activity) would not result in significant adverse impacts to Indiana bats.

Section 2.8-3.3, "Probable Impacts of Project 1, Shaft and Bypass Tunnel Construction-West of Hudson," and section 2.8-4.3, "Probable Impacts of Project 1, Shaft and Bypass Tunnel Construction-East of Hudson," of the DEIS evaluated the potential impacts to the state- and federally-listed endangered Indiana bat due to tree clearing and other site preparation activities, and from construction of the shaft and bypass tunnel (e.g., nighttime lighting, blasting, and increased human activity). Consistent with USFWS guidance, clearing of potential Indiana bat summer roost

trees identified on the west and east connection sites for this project would only occur during October 1 through March 31, prior to the emergence of Indiana bats from hibernation. Clearing during this time period would avoid removing trees that may be in use by Indiana bats and to discourage Indiana bats from potentially occupying the sites during subsequent clearing and construction activities. Noise levels and human activity would have already been established on the sites prior to emergence of bats from hibernation, and thus, any individuals using the portion of the west and east connection sites or adjacent areas for summer roosting habitat or foraging would be those habituated to the noise and activity.

Table S-4 (as well as the corresponding tables in Chapter 1, "Program Description") has been revised for the FEIS.

Comment 25: While the Town of Newburgh Code on blasting allows such activity to occur from 8 AM to 7 PM, the Town Board, I suspect, did not envision that such activity would occur over such a long sustained period of time lasting several years. The City of New York should not only adhere to the Town Code on blasting times, but limit blasting times further. Should the building sponsor ask for a noise ordinance variance or blasting time variance, such applications should be denied. It would be more productive if the City of New York was not to ask for such a variance and work with the community to limit blasting to times that are acceptable to the Town Board and to the local residents. (Casscles)

Response 25: All blasting activities would be carried out under a permit to be issued under Chapter 66 of Town of Newburgh Town Code. Once a contractor has been selected by DEP, that contractor would apply for the blasting permit. As stated in the DEIS (see page 2.1-6) "[d]uring the approximately 16- to 19-month period when blasting would occur, one to two blasts can be expected on a given day. Based on experience with other construction projects that involve blasting, it is expected that blasting would typically occur during the first shift (7 AM to 3 PM). The second blast, if it occurred at all, would generally occur in the early afternoon." While work during Phase 2: Shaft Construction would occur on a three-shift, 24-hour cycle, DEP does not anticipate blasting during the third shift (11 PM to 7 AM) and does not intend to conduct any blasting in violation of the Town Code. DEP does not believe that one or two blasts per day would require any variance from Town Code. The blasting times noted in the DEIS represent the most reasonable limits that could be employed on the west connection site.

Comment 26: The Town of Newburgh should be very circumspect in granting any variances from the Town lighting code. (Casscles)

Response 26: Comment noted.

Comment 27: The only way that this project was found out about, because I am not a subscriber to the Middletown Record, is when I believe my brother had gone down because of some noise he had heard and investigated what was going on, and found that there was a test shaft that was being built at that point. There was never any notifications ever received by my son or myself as his power of attorney, and it wasn't until it was questioned about what was going on that we actually found out what the facts were. There were never any mailings by the town, no mailings by you guys, no notifications. (R. Bell)

Wouldn't you think a project that's over $2 billion, taking 10 years, there is no notifications by letter or anything? I mean this just seems absurd. (W. Bell)

We didn't get any notifications of what was going on this piece of property either. I heard it from just the gossip from the people around in the town. (R. Hughes)

Response 27: All applicable notification requirements for the Final Scope of Work and circulation of the DEIS were undertaken. In addition, a notice was published in the Environmental Notice Bulletin on December 21, 2011, and an extension of the public comment period was published on February 22, 2012. DEP also published notices in the following local newspapers a minimum of 14 days in advance of the public hearings in the vicinity of Project 1 activities: *Times Herald-Record*, *Shawangunk Journal*, *Kingston Daily Freeman, Mid-Hudson Times*, *Poughkeepsie Journal*, *Southern Dutchess News*, and *Sentinel*. The environmental assessment documents for the second EIS or a subsequent environmental review, as appropriate, will be distributed to all appropriate entities and agencies to ensure a thorough review.

Comment 28: We (Dutchess County Department of Planning and Development) have no specific comments on the proposed site plan; however, the project will generate substantial traffic which could affect the county road system. We will review the DEIS and encourage the (Town of Wappinger) Planning Board to consider any comments on the DEIS in making SEQRA findings on this site plan application.

We also encourage the Planning Board and applicant to continue to coordinate with the Dutchess County Public Works Department and NYSDOT to minimize the project's impacts on the transportation system.

The department recommends that the Planning Board rely upon its own study of the facts in the case with due consideration of the above comments.

We support coordination with affected agencies and the public regarding construction-related traffic. We encourage the Board and applicant to continue to coordinate with the Dutchess County Public Works Department, NYSDOT, and the town to minimize the project's impacts on the transportation system. (Dozier)

Response 28: Comment noted.

Comment 29: Considering the nature and extent of the comments involved, this office requests that the applicant grant an extension of the (too short) SEQR required minimum 10 days (617.11) for the involved agency (the Town of Wappinger) to consider the FEIS before the DEP issues its written findings statement. (Gray)

Given the significant magnitude of the proposed project and its adverse environmental impacts, we believe that DEP should allow a substantially longer time period for agencies and the public to consider and comment on the FEIS before DEP issues its Finding Statement. (Stolman)

Response 29: DEP will extend the issuance of the findings statement by an additional 10 calendar days after the issuance of the FEIS in order to allow for review of the FEIS by Involved Agencies.

Comment 30: Section 2.19, "Mitigation," should be more fully discussed with the Town (of Wappinger) before revisions are made in the FEIS. (Gray)

Response 30: In the time period between the issuance of the DEIS and FEIS, a series of meetings were undertaken between DEP and representatives for the Town of Wappinger Planning Board. Mitigation was one the key elements discussed in these meetings. In consideration of the comments received and discussions held in these meetings, Section 2.19, "Mitigation," has been revised for the FEIS to include a Conceptual Noise Mitigation Plan.

Comment 31: In order for the (Wappinger) Planning Board to process the site plan approval and grant the ability to have construction outside the normal Monday through Friday 7 AM to 6 PM construction hours the Planning

Board should have the following additional items for review and consideration:

a. Revised site plan sheets.

b. A new mitigation plan sheet for each phase that identifies equipment type and location as modeled in CadnaA that shows all the mitigation included in the modeling.

c. Cross-sections that extend from the equipment to the south and east that show the vertical relationship of the houses, barriers, and equipment.

d. Topo that extends 200 feet off-site to the nearest receptors.

e. Additional details on those items not fully addressed in the FEIS, which could potentially include: existing noise levels and mitigation plan. (Crossan)

Response 31: Revised site plan drawings will be submitted to the Town of Wappinger after completion of the FEIS to reflect that latest concepts for on-site activities by phase and noise control measures. In the period between the issuance of the DEIS and FEIS, a series of meetings were undertaken between DEP and representatives of the Town of Wappinger Planning Board. Equipment type and location showing all the noise mitigation as modeled in CadnaA were discussed. Additional noise measurements near the east connection site were undertaken for the FEIS (in Appendix 2.13), and a Conceptual Noise Mitigation Plan was prepared for the FEIS (included as Appendix 2.19-2). Taken together, these actions and submissions address the above concerns.

Comment 32: We are on the planning board and we went through this. This project is going to be anywhere from 10 to 15 years. We do want somewhere a notice of the liaison person for the entire period so that the town or the residents who feel that they want to be in contact with somebody have an actual real person, not some pie in the sky person that all the sudden disappears once everything is done and you go home. So we want to know that there is a real person that we can contact for this entire period of time. (Visconti)

Response 32: The Water for the Future Program has a full time person, dedicated to outreach and communications, that is and will continue to be available to the neighbors, concerned citizens and the government of all the host communities where work will be done. The planning board, along with members of the public, should feel free to contact the program's outreach

lead if ever and whenever there is an issue they would like to bring to DEP's attention.

Comment 33: Before the end of the comment period the planning board will have comments on a variety of subjects, including traffic, noise, impacts upon the character of the neighborhood, and impacts upon the town's (Wappinger) tax base, as well as other comments. (Stolman)

Response 33: Comment noted. Additional comments were received from the Town of Wappinger and are addressed in this chapter and in the FEIS.

Comment 34: I have looked at your distribution list for this document. The list does not include any of the local governments west of Rondout. These towns, villages, and cities are directly affected by every stage of the project. The towns in Delaware, Sullivan, and Orange Counties are many but should receive a hard copy of the full document. Not sending this phase to them is like giving a child the last copy of Harry Potter and expecting them to understand the whole scenario. It would be similar to asking a surgeon to operate on your back without the X-ray. I feel an informed government from the beginning is the best government. Is it possible to (a) send a hard copy to all those local governments within the watershed of Pepacton, Neversink, and Cannonsville, and (b) send a hard copy to all those local governments below the dams and have the discharge running through their land? (Homovich)

Response 34: All involved agencies for Project 1 received the DEIS. In addition, a notice was published in the Environmental Notice Bulletin on December 21, 2011 and an extension of the public comment period was published on February 22, 2012. DEP also published notices in the following local newspapers a minimum of 14 days in advance of the public hearings in the vicinity of Project 1 activities: *Times Herald-Record*, *Shawangunk Journal*, *Kingston Daily Freeman*, *Mid-Hudson Times*, *Poughkeepsie Journal*, *Southern Dutchess News*, and *Sentinel*. The environmental assessment documents for the second EIS or a subsequent environmental review, as appropriate, will be distributed to all appropriate entities and agencies to ensure a thorough review.

Comment 35: As the project will cross under the Metro-North right of way (albeit at a very significant depth), it would seem appropriate that MTA Metro-North be listed as an involved agency.

I have been advised by the MTA Legal Department that the Smart Growth Public Infrastructure Policy Act—ECL Section 6-0101—requires that

MTA evaluate any "public infrastructure project" before approving it, and this requires that MTA evaluate the project's consistency with various "smart growth criteria." (Timko)

Response 35: Comment noted. Page 2.2-14 in Section 2.2, "Land Use, Zoning, Public Policy, and Open Space," of the DEIS included an evaluation of the project's conformance with the Smart Growth Public Infrastructure Policy Act.

Comment 36: The public hearings for Phase 1 of the project were all held in the Hudson Valley. I can understand this since that is where the construction will take place. The impact of the construction however is felt beyond that geographic area. Delaware and Sullivan Counties are directly impacted and should be included. Is it possible, when scheduling the public hearings for Phase 2, that you include one west of the Rondout area? Could you publicize that meeting in a paper that serves the area or send notices to the local governments affected? Is it possible to modify your distribution list to include those areas affected by the discharge/release/diversions of the impounded waters? (Homovich)

Response 36: Public hearings on the second EIS or a subsequent environmental review, as appropriate, will be scheduled in areas near project components, such as Staten Island and Queens, as well as areas potentially affected during the connection phase of the proposed project, including downstream of the Delaware watershed releases.

Comment 37: The New Jersey Department of Environmental Protection had not been notified about the DEIS and only came across it earlier this month. My staff is preparing comments on it but will not be able to complete them by the February 17, 2012, deadline for written comments. I request that the hearing record be held open until April 30, 2012. This will allow us to better identify those institutional and engineering issues that should be analyzed and made part of the EIS process. An additional request is to add my name to the list of parties notified in advance of all public hearings. (Plonski)

Request is hereby made for an extension of 3 weeks until March 9, 2012, within which the Town of Wawarsing must submit comments on the DEIS. In view of the substantial magnitude and 10-year duration of the project, the significant adverse environmental impacts of the project, and the importance of mitigation measures to the residents who will be severely impacted by this project, the extension will be needed to properly identify and frame the comments on the DEIS. (Roberts)

Response 37: The public comment period for the DEIS was extended from February 17, 2012 to March 9, 2012. New Jersey Department of Environmental Protection was notified of this extension and submitted comments by March 9, 2012. In addition, the commenter has been added to the project distribution list.

Comment 38: The Water Authority of Great Neck North (WAGNN) should be named as an interested party and informed of all potential impacts to WAGNN as soon as they have been recognized by DEP, as well as receiving such other information and documentation as to which it would be entitled pursuant to such designation (see section 10.0-3.17, "Probable Impacts of Project 2A: Water Supply System Augmentation and Improvement," for related comments). (Graziano)

Response 38: The Water Authority of Great Neck North may, as an Interested Agency, review and provide comment on environmental review documents issued for review. The second EIS or a subsequent environmental review, as appropriate, will evaluate potential incremental impacts to the environment resulting from the proposed Augmentation Program, including the Queens Groundwater Reactivation and Nassau County Interconnection projects.

Comment 39: WAGNN intends to retain the services of a consulting engineer and legal counsel to assist it with reviewing all future information and documents associated with the Queens Groundwater Reactivation project and the Nassau County Interconnection project. WAGNN requests that DEP reimburse WAGNN for the cost of those services. (Graziano)

Response 39: DEP is not obligated to reimburse WAGNN for any costs associated with the activities noted above.

Comment 40: At the February 8, 2012 Land Use Meeting of Community Board 8M, the following resolution was adopted by a vote of 26 in favor, 0 opposed, and 0 abstentions.

This resolution is submitted as CB8M's comments to the DEIS issued pursuant to the proposed project to repair the Delaware Aqueduct.

Whereas, the Delaware Aqueduct supplies approximately half of New York City's daily drinking water needs, and

Whereas, DEP seeks to undertake a $2.1 billion *Water for the Future* program that includes repairing leaks in the Delaware Aqueduct, and supplementing the city's water supply during construction work on the Delaware Aqueduct tunnel, and

Whereas, DEP plans to address leaks in the Delaware Aqueduct by building a 2½ mile bypass tunnel around a portion of the aqueduct that is leaking in the Town of Newburgh, NY, and repairing leaks from inside the existing tunnel, and

Whereas, DEP seeks to break ground on the bypass tunnel in 2013 and complete the connection to the Delaware Aqueduct in 2021, and

Whereas, DEP has issued a DEIS in connection with the *Water for the Future* program,

Therefore, be it resolved that Manhattan Community Board 8 (CB8) is in favor of DEP proceeding to build the proposed bypass tunnel to facilitate repair of the Delaware Aqueduct in order to ensure that DEP can continue to deliver high quality drinking water every day to NYC,

Be it further resolved that CB8 supports this project contingent upon DEP minimizing and mitigating potential environmental impacts in the areas where the work is to be performed, and upon DEP having an adequate plan in place to supplement the water supply with high-quality drinking water during the shut-down phase of up to 6 to 15 months of the Delaware Aqueduct. (Viest)

Response 40: Comment noted.

STATE AND NEW YORK CITY ENVIRONMENTAL QUALITY REVIEW

Comment 41: The statements on page 1.0-32 regarding findings should be clarified. Each involved agency must prepare its own findings. (Gray)

Response 41: The text in question noted that "any public agency taking a discretionary action regarding a project must adopt a formal set of written findings", and, therefore, no additional changes to text were made for the FEIS.

Comment 42: Although the DEIS clearly states that this environmental review of the Water for the Future Program is being segmented because the designs for Project 2 will not be available for several years, SEQRA regulations require that the lead agency clearly state in the EIS the reasons supporting segmentation and to demonstrate that the segmented review will be no less protective of the environment. This statement should be included in the FEIS. (Wegner)

The DEIS makes numerous references to a "second" DEIS to be prepared for those aspects of the overall project which have not been identified or investigated as part of the current DEIS. NYSDEC wishes to remind DEP of SEQR provisions at 6 NYCRR 617.3(g)(1) & (2) which require the

review of the "entire action," and which prohibit the "segmentation" (of review or only part) of the whole project. While NYSDEC understands that there are many disparate components of the current proposal, the separation of the SEQR review into separate discrete portions goes against the spirit, if not the letter, of SEQR statues and regulation. NYSDEC believes that all foreseeable actions and potential impacts of the entire proposal should have been identified, at least in a cursory manner, in the current DEIS, rather than in a separate document. The FEIS should strive to incorporate all such actions and impacts into one comprehensive and cohesive document, as all involved agencies, including local municipalities, must make decisions based upon the facts and conclusions contained in the DEIS/FEIS prepared in support of this Type I action. (Ballard)

Under SEQRA, an EIS must consider the full range of environmental impacts associated with an action, including short term and long term impacts.[7] For proposals which consist of a series of activities or steps to be allowed, all of the activities and steps must be considered regardless of "whether the agency decision-making relates to the action as a whole or to only a part of it."[8] However, the regulations further provide that if the lead agency believes that circumstances warrant considering only part of, or a segment, of the action, the lead agency must:

> clearly state in its determination of significance, and any subsequent EIS, the supporting reasons and must demonstrate that such review is clearly no less protective of the environment. Related actions should be identified and discussed to the fullest extent possible.[9]

Although this DEIS clearly states that the environmental review of the Water for the Future Program is being segmented because the designs for project 2 will not be available for several years, the DEIS does not include reasons supporting segmentation and demonstrating that a segmented review will be no less protective of the environment. The FEIS should correct this deficiency in the DEIS. (Hudson/Wegner)

Consistent with the principle that all EISs "should deal with the specific significant environmental impacts which can be reasonably anticipated,"[10]

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[7] ECL § 8-0109(2).

[8] 6 N.Y.C.R.R. § 617.3(g).

[9] 6 N.Y.C.R.R. § 617.3(g)(1)*; see also Concerned Citizens v. Zagata*, 243 A.D.2d 20 (3rd Dep't 1998).

[10] ECL § 8-0109(2).

the SEQRA regulations require the preparation of a cumulative impact assessment because even if no single project's impact is significant, the aggregated impacts from multiple actions may be significant.[11]

To pass legal muster, the discussion of cumulative impacts in the DEIS needs to be supplemented. Chapter 6 states that "the potential cumulative traffic, air and noise impacts that could occur from construction on both connection sites are considered in the respective impact evaluations."[12] However, there is no mention of cumulative impacts in the traffic and noise discussions, and the discussion of air impacts only lists cumulative concentrations of airborne pollutants, with no reference to potential cumulative impacts to the environment or human health. A more complete discussion of cumulative impacts is necessary to comply with NYSDEC's requirement that an EIS should address all significant environmental impacts that can be reasonably anticipated, including direct and secondary, as well as short- and long-term effects.[13] (Hudson/Wegner)

Response 42: We note that we have discussed with DEC its concerns with respect to segmentation, and believe that DEC is satisfied that our decision to conduct our environmental review into two parts complies with SEQRA and is reasonable for this phased project, as outlined below.

DEP currently anticipates that the Water for the Future Program will take up to 9 years to complete. The first stage (seven years) of this project is to construct a bypass tunnel around the leaking areas of the Rondout-West Branch Tunnel (Project 1) segment of the Delaware Aqueduct, which typically supplies 50 percent of the city's drinking water. Planning for Project 1 is well underway and construction is currently anticipated to begin in 2013. In order to ensure a continued supply of drinking water during the shutdown of the Delaware Aqueduct, DEP is in the process of identifying water conservation and augmentation projects (Project 2A). The scope of these projects and the effects related to the shutdown are predicated on the duration of the connection of the bypass tunnel and repair of the Delaware Aqueduct. Currently the shutdown is anticipated to take between 6 to 15 months starting in 2020 (Project 2B). Collectively, DEP refers to Projects 2A and 2B together as Project 2.

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[11] 6 N.Y.C.R.R. § 617.7(c)(2) ("agency must consider reasonably related long-term, short-term, direct, indirect and cumulative impacts"); 6 N.Y.C.R.R. § 617.9(b)(5)(iii)(a) (if applicable and significant, draft EIS must include "reasonably related short-term and long-term impacts, cumulative impacts and other associated environmental impacts").

[12] *See id.*, at 6.0-1.

[13] ECL § 8-0109(2)(b); NYSDEC, The SEQR Handbook at 80 (2010).

Given the need to start the construction work on the bypass tunnel as expeditiously as possible due to the risk to New York City's water supply should the Delaware Aqueduct fail, this FEIS contains a site specific environmental review for Project 1. Project 2 is discussed in this FEIS to the extent feasible given the level of project development. The level of detail of that review is, of necessity, more preliminary in nature, as these projects have not been as developed as Project 1. DEP will conduct a full site specific review of the impacts of Project 2 in the near future (in 2013-2014) when Project 2 elements are sufficiently identified so that the Project's impacts can be fully analyzed on a site specific basis.

In addition to a thorough review of the impacts of Project 1 and a preliminary review of the impacts of Project 2 based on currently available information, this EIS addresses the cumulative impacts for Water to the Future Program to the extent possible based on current information. It should be noted that the locations and/or timing of impacts for Project 1 and Project 2 are separate such that it is reasonably anticipated that the impacts from Project 2 will not exacerbate any of the impacts identified in Project 1. That said, the second EIS or a subsequent environmental review, as appropriate, will comprehensively analyze any potential cumulative impacts of the two Projects together. The two EISs will thus consider the full range of environmental impacts associated with the entire proposed Water for the Future Program, including short-term and long-term impacts; all impacts are being considered "as early as possible in DEP's formulation" of the action, as required by SEQRA. 6 NYCRR § 617.6(a)(1).

This approach satisfies the goals of SEQRA – to incorporate the consideration of environmental factors into agency planning at the earliest possible time, in a transparent, public process. In sum the current FEIS addresses the environmental impacts associated with Project 1, as well as the potential impacts of the actions that are now identifiable in connection with Project 2. DEP acknowledges that elements of Project 2 will be developed at a later date and thus will require additional analysis. To address this, DEP has committed that it will undertake a second EIS or a subsequent environmental review, as appropriate, in order to ensure that such aspects are properly analyzed and undergo public review. In conjunction with DEP's commitment to complete a second EIS or a subsequent environmental review, as appropriate, for Project 2, the current review provided for the Water for the Future Program complies with the legal requirements of SEQRA and is no less protective of the environment than a single EIS that, of necessity, could not be developed until a later date.

Comment 43: DEP and its project are bound by the CEQR process as well as the SEQR process. The Town of Wappinger Planning Board is, however, bound primarily by the SEQR process. The DEIS addresses both processes, although the conclusions reached appear to result strictly from the CEQR process and the *CEQR Technical Manual*. The CEQR process and *Technical Manual* are largely intended for projects in New York City, not for projects in somewhat rural settings.

The evaluation of environmental impacts and significant environmental impacts in the *CEQR Technical Manual* appears to be largely quantitatively driven, whereas the same elements are often times more subjective in the SEQR process. Therefore, the SEQR analysis is more open to interpretation by the Planning Board.

Further, it has been stated by DEP that the CEQR process is more rigorous or stringent than the SEQR process, but we do not agree with that assessment. This is another reason as to why the FEIS should be responsive to the Planning Board's comments and concerns, in order for the Planning Board's Finding Statement to be consistent with the Finding Statement issued by DEP.

Limited information was known at the time of the preparation and issuance of the Scope for the DEIS. For example, the magnitude of the adverse environmental impacts, the types of mitigation measures to be proposed, and the nature of the unavoidable significant adverse impacts were not known. The DEIS helps to understand this matter although we and the Town's other consultants have questions as to whether the analysis in the DEIS was comprehensive enough and performed properly, and therefore whether the conclusions in the DEIS are valid. (Stolman)

Response 43: As noted in the Final Scope of Work, the methodologies in the *CEQR Technical Manual* provide a structured approach to evaluate the potential for significant adverse impacts, and thus the preparation of the DEIS. These methodologies are considered to be appropriate technical analysis methods and guidelines for environmental impact assessment of discretionary actions in New York City and actions undertaken by New York City agencies. In addition, as noted in the Final Scope, the proposed program would largely involve construction in locations outside New York City, and therefore locally and/or state-accepted EIS methodologies were applied in cases where New York City methodologies are either irrelevant or less stringent. Before the issuance of the DEIS, after the completion of the DEIS, and before the issuance of the FEIS, DEP undertook numerous meetings and consultations with the Wappinger Planning Board's staff and consultants to review the detailed assessments undertaken in the completion of the DEIS. Pursuant to requests made after

the completion of the DEIS, clarifications and additional information have been included in the FEIS to further support the conclusions in the DEIS.

Comment 44: The Decree parties of the 1954 Supreme Court Case, DRBC, and FFMP/OST are the controlling factors for discharges from the three Delaware reservoirs. Any increases and decreases usually require a signed agreement from the Decree parties. Will the eventual plan for Phase 2, its CEQR, have to be accepted by the Decree Parties? Will the CEQR for Phase 2 have to include environmental impacts all the way to the state of Delaware? (Homovich)

Response 44: DEP intends to comply with its obligations under the Supreme Court Decree of 1954, the rules and regulations promulgated by the DRBC that are applicable to DEP and this project, and any other contractual agreements that DEP is a party to at the time of making any additional releases from DEP's Delaware watershed. DEP has also undertaken extensive outreach and consultation with the resource managers in other affected states, with particular focus on New Jersey, to ensure appropriate consideration of and response to their concerns in a manner consistent with each state's own regulatory and programmatic structure.

We note that, with respect to Section 3.8 Project Review by DRBC, Section 3.5(c) of the Compact states DRBC shall not "exercise any jurisdiction, except upon consent of all parties to said decree, over the planning, design, construction, operation or control of any projects, structures, or facilities constructed or used in connection with withdrawals, diversions, and releases of waters of the basin authorized by said decree or of the withdrawals, diversions, or releases to be made thereunder[.]" Since this project constitutes the repair of a structure used in connection with withdrawals made under the Supreme Court Decree of 1954, it is not subject to review by DRBC. Regardless, the environmental impacts of such releases, within the State of New York, will be reviewed as part of the second EIS or a subsequent environmental review, as appropriate, for Project 2B.

To the extent DEP pursues water supply projects in New Jersey, DEP intends to go beyond the requirements of SEQRA/CEQR by consulting with resource managers and other potentially affected parties in New Jersey and working cooperatively to identify and address potential concerns. DEP will also receive public input on any analysis in the course of compliance with the New Jersey permitting process established to safeguard New Jersey's interests. These measures go beyond SEQRA/CEQR because SEQRA/CEQR do not require a lead agency undertaking an action in the State of New York, to analyze out of state

impacts. SEQRA's "Purposes" and "Findings" sections refer to protecting resources within the State. N.Y. Environmental Conservation Law ("ECL") §§ 8-0101 and 8-0103. The legislative findings state, among other things, that "maintenance of a quality environment for the people *of this state*…is a matter of statewide concern," ECL § 8-0103(1) (emphasis added), and identify "a need to understand the relationship between … ecological systems and the general welfare *of the people of the state*, including their enjoyment of the *natural resources of the state*." ECL § 8-0103(3) (emphasis added). Accordingly, SEQRA is geographically limited to protecting New York State's environment and consideration in the EISs of out of state impacts is not required.

ANALYTICAL FRAMEWORK FOR ENVIRONMENTAL REVIEW

Comment 45: The DEIS systematically limits the scope of analyzing the adverse environmental effects within 500 feet of the project. Due to the huge scope of this project and its far-ranging impacts, the DEIS should expand its survey to at least 1,000 feet to give municipal decision-makers the information they will need to accurately assess the environmental impacts of this project on our community. (Casscles)

Response 45: The DEIS was completed following the methodologies and guidelines in the Final Scope of Work. To ensure that all potential significant adverse impacts are addressed, the study area varied by chapter. Where appropriate, the study area was expanded based on preliminary analyses undertaken in the preparation of the DEIS. All such study areas and determinations of locations that would potentially be subject to significant adverse impacts from the project were reported in the DEIS. The geographic area was not expanded when analysis indicated there would not be any additional predicted significant adverse impacts.

Comment 46: A partial site plan has been submitted that supplements the DEIS, and there may be questions or issues that can be better resolved in one or the other format. Therefore, if the comments below regarding DEIS statements or table entries can be best resolved by reference to the site plan, that should be the response in the FEIS. However, it appears from discussions at a meeting with the applicant that the site plan submittal will not be a typical complete plan, and that the applicant is proposing to bid much of the work on a "design-build" basis. Therefore, the DEIS must resolve concerns regarding such undefined "design-build" work (i.e., not shown on the site plan or described in the DEIS) so that the Town of

Wappinger is assured that impacts have been properly considered and mitigated as possible. (Gray)

Response 46: The proposed project is not a design-build project. DEP is designing the proposed project; however, there are elements of the construction work that would have to be implemented by DEP's contractors. Any contractors retained by DEP must adhere to the Town of Wappinger Code and any commitments or requirements noted in the FEIS; however, such contractors are able to determine their own methods for achieving the construction goals in accordance with such terms. DEP will mandate contract specifications and contract a construction manager to work with DEP to oversee the subsequent construction work and ensure that DEP and its contractors meet the commitments and requirements noted in the FEIS.

Comment 47: The DEIS contains many conclusory statements that are not supported by investigations made, reports prepared, or other factual basis from the DEIS. Since the DEIS will not be rewritten, some of the conclusory statements are flagged for restatement or clarification in the specific review comments below. (Gray)

Response 47: Comment noted.

Comment 48: All of the concerns stated below should be considered for responses in the FEIS, regardless of whether the concerns are framed as questions or as statements. (Gray)

Response 48: Concerns raised as statements were also considered as comments on the DEIS and were addressed.

10.0-3.3 DESCRIPTION OF PROJECT 1 CONSTRUCTION PROGRAM

Comment 49: What is the length of this project, the whole thing? (Weyant)

Response 49: Construction of Project 1, Shaft and Bypass Tunnel Construction is expected to be completed over an approximately 7½-year period between 2013 and 2020. Project 2B would not be implemented until after Project 1 and Project 2A, Water Supply System Augmentation and Improvement, are complete and DEP has had enough lead time to prepare the water supply system for the RWBT shutdown needed to implement Project 2B. Currently, it is anticipated that Project 2B would begin in 2020, and between 6 and 15 months would be required to complete the bypass tunnel connection. Therefore, it is anticipated that the entire Water for the Future Program will take [8-9] years.

Comment 50: It will be helpful to the Town (of Newburgh) Planning Board and the general public in reviewing the DEIS that it be as specific as possible as to the construction activities that are being contemplated at the site (west connection site) and the timeline when these activities are to take place. Among the types of questions that should be addressed include: What are the hours of operation for construction activities? Will trucks and drilling activities occur only during daylight hours or throughout the day and evening? Will construction activities occur throughout the year or only during certain times of the year? (Casscles)

Response 50: Construction at the west connection site would be expected to occur Monday through Friday with the exception of Phase 1: Site Preparation, which would also require Saturday work, and Project 2B, which would require work seven days a week. Table 2.1-1 in the DEIS provided a summary of the number of shifts per day, the number of days per week in which work would take place, work hours, and the length of time each phase is expected to last at the west connection site.

Comment 51: It seems that the west side will bear the inordinate amount of 24-hour, 7-day-a-week construction schedule. This must be curtailed to reduce the cumulative adverse effects of this project on local residents. (Casscles)

Response 51: The potential limitations on working hours at the west connection site that are feasible were considered in the DEIS and FEIS. Table 2.1-1 in the DEIS provided a summary of the number of shifts per day, the number of days per week in which work would take place, work hours, and the length of time each phase is expected to last at the west connection site. The periods of work that would expect 24-hour work periods for Project 1 would be the shaft and tunnel construction on the west connection site. In order to allow start of the tunnel boring machine (TBM) work as soon as practical, shaft construction would occur 24 hours a day. The nature and safety requirements of underground tunnel work would require 24-hours per day work. However, whenever scheduling permits, work would be undertaken in less than 24 hours per day. Construction of the inundation plugs is an example.

Comment 52: I would like to confirm that the total length of tunnel is 2.3 miles and the diameter is from 13.5 feet to 19.5 feet. I also found that total soil excavation by TBM is 460,000 cubic yards. If I calculate diameter with volume and length, I come up with an average 24 feet diameter across the tunnel. Does this difference come from the concrete thickness and other perimeter excavation? (Lim)

Response 52: The bypass tunnel length is 2.3 miles. The noted diameter represents a potential range of the finished internal diameter. The excavated diameter would be larger to accommodate linings. Lining thickness is determined during detailed design. The volume of material as measured for transportation away from the connection site is larger than the calculated in-place volume due to voids between pieces of broken rock that exist after excavation.

Comment 53: The DEIS is deficient in defining light pollution along River and Old Post Roads and impacts from the 24-hour work schedule, which is planned for years 2015 to 2018. That's several years of 24-hour work, which is going to impact quality of life for everyone there, just between noise and light and trucks and vibration and everything. (Beretta)

Response 53: The DEIS addressed and identified potential adverse construction-related impacts from noise and traffic. Light pollution from the site would be managed during construction by minimizing lighting to the maximum extent practicable while providing for worker safety. In addition, lighting would be aimed at the ground to minimize glow off the site. Upon completion of the project, no lighting would be present on the west connection site. No significant adverse impacts are expected from vibration, as noted in other responses to comments on this chapter.

Comment 54: Can the project sponsor's finance sound-proofing homes of those most adversely affected by blasting activity, give notice of the blasting schedule, and limit blasting to the daytime? Can the DEIS state how the blasting will be mitigated as it relates to informing adjacent residents of the times and dates of such blasting? Can houses close to the site be sound proofed to muffle the sound? Can the blasting be limited to certain times of the day?

Should there be broken windows or other property damage caused by such blasting, can a mechanism be established for the project sponsors to compensate for property loss? In the 1970s, there was extensive blasting at the quarry nearby and windows did break and other property damaged due to such blasting. The DEIS minimizes this risk. (Casscles)

I'm concerned about any blasting and drilling that goes on and for structural damage that might result. And that whether that blasting and drilling is something that is done right on the road there for the pipeline or whether it's something that is 900 feet down as this boring unit goes through. The DEIS is deficient in defining the noise levels, light pollution, and negative impacts from drilling, blasting, and tunneling. What kind of noise and vibration will be heard or felt when the tunnel boring operation

is going on for years, 24 hours a day? Neither the DEIS nor answers given at the public hearing are clear on that. (Beretta)

What happens if we get cracks in our foundation or walls in our homes? Who pays for the repairs? (R. Hughes)

Response 54: The DEIS undertook detailed evaluations of potential adverse impacts related to construction of the shafts and bypass tunnel. To reduce vibration and noise levels associated with blasting, construction specifications would require adherence to all applicable rules and regulations and the use of modern blasting techniques (for example, timed multiple charges and blast mats). No significant vibrational impacts are expected as a result of the construction of the project. In addition, DEP will require preconstruction surveys for all structures and facilities located within 500 feet horizontal distance of the centerline of the shaft for blasting at Shaft 5B and Shaft 6B, and 500 feet horizontal distance from the location of surface blasting at the 5B Site, and properties located at 179, 191, 192, 198, 212, 216, 217, 219 and 225 River Road North in the Town of Wappinger. DEP will also include in its contract specifications measures to limit surface blasting to normal working hours. DEP has a long history of experience with blasting in New York City, particularly in close proximity to historic structures, to demonstrate that blasting can be done safely and without damaging neighboring structures.

Comment 55: The DEIS does not characterize the size of proposed blasts. This information should be provided in the FEIS. In addition, all blasting should be performed in conformance with U.S. Bureau of Mines limits for safe vibration and air blast levels. (Ballard)

Response 55: DEP utilizes the strictest noise and vibration limits which are in conformance with all regulatory agencies. DEP will conduct outreach to the affected neighbors including conducting pre-blast surveys of nearby properties.

Comment 56: A pre-blast survey is recommended for both west and east connection sites (the DEIS currently proposed a 500 feet pre-blast survey for east side only). Depending on the size and type of blasts, a 1,000 feet pre-blast survey is recommended. Proposed blasts may have high Peak Particle Velocity (PPV) values as they may be confined (tunnels and shafts). (Ballard)

Response 56: On the east side, a 500-foot radius is being used, and certain houses adjacent to the DEP property are being added to the survey group, as is required by applicable regulatory agencies given the size and type of

blasting anticipated. On the west side, a 500-foot radius from the location of the blast would be monitored. PPVs monitoring would be included as part of the blast monitoring program.

Comment 57: The number of proposed blasts shown on page 2.1-6 indicates blasting to last for 16 to 19 months, which contradicts proposed number of blasts provided elsewhere in the DEIS. Proposed number of blasts should be presented consistently throughout the DEIS and appendices. (Ballard)

Response 57: At the west connection site, blasting would be required intermittently for approximately 3 to 6 months during Phase 1: Site Preparation in connection with site grading. Blasting would also be required for the full duration of Phase 2: Shaft Construction in connection with construction of the shaft, for approximately 13 months, for a total of between 16 and 19 months. When blasting would occur, one or two blasts would be expected on a given day. On the east connection site, blasting would be required during Phase 2: Shaft Construction in connection with the construction of the shaft for approximately 21 months. When blasting would occur, one to two blasts can be expected on a given day.

Comment 58: It is not clear from discussions in the DEIS whether proposed blasting activities may potentially impact the "old" RWBT, especially given the close proximity of blasting to the new tunnel excavation. The FEIS should provide an expanded discussion of relative distances between the two tunnels (existing and proposed) and whether there are any anticipated impacts from blasting to the old tunnel. If impacts may occur, the discussion should include any proposed mitigation measures to protect the old aqueduct, especially as the old aqueduct will continue in service throughout construction phases. (Ballard)

Response 58: Blasting near the existing RWBT would only occur when the new bypass breaks into the RWBT during Project 2B. At that time, any existing lining that is damaged and is not to be abandoned, would be replaced. All of the Project 1 construction associated with the bypass would happen a safe distance away from the active aqueduct. DEP has extensive recent experience in tunnel construction and blasting from its experience in constructing City Tunnel No. 3 and the Croton Filtration Plant, including work in the vicinity of existing water tunnels.

Comment 59: We were told that there were going to be two boring machines. Was that ever a consideration, has that changed? Obviously it's changed because you're just going from this side of the river. (R. Bell)

Response 59: Two TBMs would not be practical. In addition to the significant extra costs, TBMs need to be extracted at a shaft site, and launching a TBM from each side would require the construction of an additional, third shaft. To gain maximum benefit of using two TBMs, a TBM would have to be extracted in the middle of the proposed tunnel—under the Hudson River. Construction of an additional shaft under the Hudson River for TBM extractions would require comparable construction materials and personnel as those required for landside construction of shafts, provision of power at such a location, additional staging areas to support such activities from nearby shores, approvals and measures to reduce impacts on aquatic resources, and approvals to construct such in navigational waters with no material cost savings. This would be impractical, compared with the use of a single TBM extracted at one end of the tunnel.

Comment 60: Page 2.1-17 indicates that the TBM will be removed at the east end at the completion of construction. This contradicts Table 2.1-5, which indicates the TBM will be left in place. Please clarify and correct any inconsistencies throughout relevant portions of the FEIS. (Ballard)

Response 60: Following completion of the bypass tunnel excavation, the TBM would be disassembled and removed from the shaft at the east connection site, as noted on page 2.1-8 in the DEIS and in Figure 2.1-1. Table 2.1-5, noted in the comment, describes the maximum average trucks by key phase.

Comment 61: Suppose the ground shakes so bad or something accidentally happens and it blows? What's going to happen with the impact, with the environment around us? Not only that, even the houses, the foundations. Who’s paying for that if it gets cracked? That’s another thing you have to look at. (R. Hughes)

Response 61: Based on DEP’s experience with constructing deep rock tunnels, including blasting of shafts, such impacts are not expected at the residents adjacent to the connection sites. However, in addition to undertaking investigations before blasting, DEP would require contractors to implement protective measures to be taken during blasting to ensure that no potential significant adverse vibration impacts will result. See the response to Comment 25 for further information on blasting.

Comment 62: There should be more detailed information on the power supply for the project. Page 2.1-5 indicates there will be a substation connected to the Central Hudson Gas & Electric (CHG&E) existing power supply network. There is no mention of the supply voltage or capacity of the substation. Is the project going to be supplied from the transmission network, which will

require new transmission lines and have a visual impact? Will the power to be distributed throughout the site be underground or overhead? Is there going to be more than one source of power to the substation? What are the sizes and fuel sources of the on-site generators? (Mennerich)

Response 62: The project would require new 13.2 kV primary and secondary feeds from CHG&E's existing transmission network to a new 15 kV substation at the west connection site. It is anticipated that both feeds would require new overhead distribution lines run by CHG&E along Route 9W. On-site power distribution would be underground. It is anticipated that diesel generators ranging in size from 50 kW to 2,500 kW would be utilized on-site as either backup power supplies or until adequate power supply is available for essential equipment at various stages of construction.

Comment 63: The grading limits, and the grubbing and stripping limits, for each phase may have to be revised depending on resolution of comments on the site plan. (Gray)

Response 63: Comment noted. The site plan will be revised, as necessary, to reflect the resolutions of comments received from the Planning Board and its consultants.

Comment 64: I would like to see the plan as best that it can be presented, and the city stepping up to the plate and dictating to the contractor what their schedule and plan of operation is going to be for the inundation plugs, and see that the contractor be responsible for doing that within one shift as opposed to being given a leeway to do it in a schedule that's convenient for him. (B. Anderson)

Response 64: Before the issuance of the FEIS, DEP re-examined the schedule for the inundation plug work at the east connection site. As a result, DEP has committed to restricting work hours for this task at the east connection site to 7 AM to 7 PM, Monday through Friday. As a result of this change, the inundation plug work would take longer to complete than projected in the DEIS, but would not result in the elimination of predicted significant adverse impacts or result in any new predicted significant adverse impacts compared to those reported in the DEIS.

Comment 65: The DEIS should clarify if both sets of pump shafts (east and west) will be used simultaneously for unwatering, or analyze the worst case scenario (for the east site) of all unwatering taking place from the east connection site. (Gray)

Response 65: If the inundation plugs are not constructed, then the west connection site pumps would not be required and would not be installed. Unwatering of the tunnel would be completed using the existing Shaft 6 pumps. During the connection phase, only the east connection site pumps would be completed to intercept the water infiltration from the Hudson River upstream of the east connection site. Water infiltration from upstream of the west connection site would be channeled through the bypass tunnel to Shaft 6B and pumped out from this shaft; water infiltration from downstream of the east connection site would be pumped out through the existing Shaft 6 pumps. If the inundation plugs are constructed, the west connection site pump shafts would be completed and used to unwater the tunnel upstream of the west plug. The east connection site pumps are not required and would not be completed. In this circumstance, the west connection site pumps would be operated concurrently with the existing Shaft 6 pumps to unwater the tunnel before tunnel connections are made. During the connection phase, water infiltration from upstream of the west connection site would be channeled through the bypass tunnel to Shaft 6B and pumped out from this shaft; water infiltration from downstream of the west connection site would be pumped out through the existing Shaft 6 pumps.

Comment 66: How will water that infiltrates the new tunnel be removed? Will there be a water-holding facility constructed on the (west connection) site for tunnel water? If so, what is the size and location of this facility? What is the volume of water that needs to be disposed and how will it be disposed? (Casscles)

Response 66: Based on historic records and geotechnical investigations, water infiltration of up to 3 mgd is expected during excavation of the bypass tunnel. It is expected that this water would be pumped through Shaft 5B to the surface of the west connection site, treated in the dewatering treatment plant shown on Figure 2.1-8, and discharged to the Hudson River via the dewatering pipeline shown in Figure 2.1-6 of the DEIS.

Comment 67: Figure 2.1-6 does not show the two proposed dewatering pipelines route (west) as discussed in the text. Revise the figure to show both. (Ballard)

Response 67: Subsequent to the issuance of the DEIS, DEP advanced the design of the dewatering pipeline that would be constructed from the west connection site to the Hudson River, selecting one potential dewatering pipeline route (Option 2) as the only route further evaluated for the FEIS. Within this route, the dewatering pipeline would be sited to minimize stream and wetland impacts.

Comment 68: Figure 2.1-12 (east side) does not show discharge points from stormwater basins or dewatering/treatment plant. If outfalls to the Hudson River from stormwater or treatment facilities are proposed, a Protection of Waters permit (Excavation/Fill, Stream Disturbance) may also be required for construction of the outfall(s). (Ballard)

Response 68: No new outfall would be constructed at the east connection site. Surface runoff from the muck stockpile area and the vehicle wash area would be contained and any associated discharge would be piped to the dewatering treatment system along with the groundwater recovered during shaft and tunnel excavation. The treated effluent and discharge from the stormwater management system would be conveyed through the existing blowoff chamber outfall to the Hudson River. The existing Individual SPDES Permit NY 0272663 for the blowoff chamber would be modified to include flow from the package treatment system.

Comment 69: On page 2.1-14, the discussion on stormwater management system should be supplemented to identify that a full SWPPP will be prepared for the site, as part of the FEIS, and that the SWPPP will be accepted and monitored by the Town of Wappinger. (Gray)

Response 69: A draft full SWPPP that considers comments received from the Town of Wappinger on the DEIS was developed after the issuance of the DEIS and submitted to the Town of Wappinger for its review and approval. In addition, Section 2-14, “Infrastructure,” has been updated with additional information describing the stormwater management practices to be employed.

Comment 70: What is the consistency of the fill extracted from the project? Is it crushed stone, slurry, mud, dirt? This may give the town (Newburgh) and construction operators the information that they need to institute measures to minimize dust, dirt, and grime from the construction site (west connection site) to the detriment of neighbors and along Route 9W throughout the town. Is there a way to minimize the removal of such soil to minimize noise, dust, water runoff, and truck traffic?

More needs to be specified on how the transportation of muck will occur. How much muck will leak from trucks as it travels on Route 9W towards the City of Newburgh? Muck that leeches out of trucks will create hazardous driving conditions and cover cars that travel on Route 9W. Further, such muck will dry into a fine power that will then cover homes and businesses all along Route 9W. Specific mitigation of this problem must be addressed. (Casscles)

Response 70: Material excavated from the site would be a mix of topsoil, soil, and rock. During site preparation, it is anticipated that the majority of excavated material would be reused as fill on-site, thereby minimizing the amount of material that would need to be transported off-site. Muck from shaft excavation would be stockpiled temporarily on-site for dewatering prior to transport off-site. The construction contractor would be required to follow strict environmental controls and comply with any applicable laws for earthwork and rock excavation on site, as well as transport of excavated fill materials off-site.

Comment 71: NYSDEC understands that material and "muck" excavated during construction of this project are anticipated to be "clean and uncontaminated" earthen materials. Part 360 Solid Waste regulations contain a pre-determined Beneficial Use Determination (BUD) for the reuse of such uncontaminated material which required no further NYSDEC authorization or review. However, NYSDEC requests that all bid contract documents prepared by DEP for this project contain the specification that all excavated materials be disposed of in a proper and appropriate manner and in conformance with all applicable state and local regulations. (Ballard)

Response 71: Comment noted. Contract specifications would require that all excavated materials be disposed of in conformance with all applicable state and local laws.

Comment 72: The DEIS is deficient in defining dust or dirt created by construction vehicles over River and Old Post Roads. I'm also concerned about Route 9W for the general well-being of everyone there. (Beretta)

Response 72: No major construction traffic related to the shaft and bypass tunnel construction is expected on Old Post Road and River Road. It is unlikely that the construction-related auto and truck traffic would use these local roadways in the west of Hudson study area and, as a result, Old Post Road and River Road are not anticipated to experience significant effects from construction traffic. The DEIS traffic study stated that the construction project would result in predicted temporary significant adverse impacts on or adjacent to the Route 9W corridor at the I-84 Eastbound Ramps, N. Plank Road/I-84 Eastbound Off Ramp, N. Plank Road and I-84 WB Ramps, Route 9W and Fostertown Road, and Route 9W and Carter Avenue. As part of the proposed mitigation, the traffic signals at these intersections would be upgraded to a real time system that would better optimize (offsets, cycles, and splits) operating conditions. The upgrades at these intersections have been explored and agreed upon with NYSDOT,

and would be part of a future Highway Work Permit application to NYSDOT.

Comment 73: How will the muck disposal trucking routes be monitored to determine that the trucks do in fact use the routes "assumed" in the DEIS? What will trigger a second review? "Self-monitoring" should not be an option. (Browne)

1.0-4.1, page 1.0-15 and 2.10-3.3, page 2.10-22: It is noted that muck disposal will be completed by the contractor and hauled off-site with trucks. Disposal sites will be identified by the contractor and routes determined. If the routes differ from that assumed in the DEIS traffic analysis, a supplemental analysis will be required. (Wersted)

Response 73: If the contractor who undertakes the project proposes a route that significantly deviates from the routes analyzed in the DEIS, DEP would undertake an analysis to determine whether the use of the new proposed route necessitate the need for additional traffic flow improvement measures. If the need for measures is identified, DEP would work with the appropriate entity with jurisdiction over the subject roadway to implement the identified measures.

Comment 74: 2.1-3.3, page 2.1-9: Can/will any of the excavated spoils/muck be usable to supplement the raw materials needed to produce concrete and grout from the batch plant? (Wersted)

Response 74: DEP has investigated the quality of rock and determined that the excavated material would not be usable for concrete batching on-site for the concrete or grout needed for the proposed project because there are strict design requirements for the project's concrete aggregates.

Comment 75: How many dump trucks will be used during the construction phase? What will be their size, weight, and number of axles? (Casscles)

We're very concerned about the way the roads are going to hold up with all the construction equipment. If you have to haul shale out from these tunnels that are being bored, are they going out on tractor trailer dumps, are they going out on single three-wheel dumps? (Perry)

Response 75: Section 2.1-4.2 in the DEIS provided a summary of the truck projections. The majority of the trucks used to transport the muck are anticipated to be typical dump trucks with a full load of 20 cubic yards per truck, equipped with a double axle.

Comment 76: How many truck loads are going to be coming out of this shaft going down on Route 9W in front of my house? (R. Hughes)

Response 76: The traffic analysis assumed that 10 percent of the trucks would arrive and depart from north of the west connection site, and 90 percent would arrive and depart from the south of the site. Of the 90 percent of vehicles arriving and departing from the south, it is assumed that these would travel along Route 9W and I-84. Figure 2.10-9 in the DEIS provided estimates of both auto and truck trips during the peak periods, where trucks are represented as passenger car equivalents (one truck = two passenger car equivalents). For the peak activity, which is the tunnel excavation phase, there are expected to be 45 trucks per day (90 truck trips), of which 90 percent (41 trucks) would be expected to pass inbound north on Route 9W and 41 trucks would be expected to pass outbound south on Route 9W per day during the worst-case period. In each of the AM and PM peak periods, 27 percent of the total daily truck trips were assumed to occur. During other time periods, the projected truck traffic would usually be less than these projections.

Comment 77: The DEIS is deficient in defining the amount of new truck traffic over River and Old Post Roads. It is not clear what the traffic increase is going to be on River Road, so it needs to be addressed. (Beretta)

Response 77: Figure 2.10-9 in the DEIS provided estimates of the auto and truck trips at the intersection of Route 9W (N-S) and Old Post Road/Magyar Drive. No major construction traffic is expected at the intersection of Old Post Road and River Road, and it is anticipated that the auto and truck traffic would generally not use these local roadways east and west of Route 9W.

Comment 78: Even after this is all over with, the roadways are going to be ruined. Are they going to do anything to give us new roadways? (Weyant)

Response 78: In the west of Hudson study area, construction traffic would use Route 9W, a NYSDOT roadway, to and from the west connection site. In the east of Hudson study area, Route 9D, a NYSDOT roadway, would be utilized by truck traffic before accessing the east connection site through local roads. Routes 9W and 9D are currently utilized as truck route arterials in the study areas, and the pavement of Route 9W and 9D have been designed to withstand its use as an arterial route for trucks, and maintained in condition by NYSDOT. Local road access by trucks to the east connection site would be restricted to Chelsea Road to/from Route 9D. In consultation with local transportation representatives, DEP has agreed to roadway pavement monitoring on local roads accessed by trucks for the east connection site. DEP would require its contractor to video-record and

assess roadway pavement conditions on both River and Chelsea Roads before the start of construction, and would conduct annual meetings after the winter with town and county roadway representatives to determine the need and make necessary pavement repairs as a result of the project construction traffic.

Comment 79: Section 2.8-3.3 states that there will be a need for 50,000 cubic yards of additional fill and/or topsoil to be brought to the (west connection) site. In addition, it also states that "some" on-site soil will have to be disposed of. That is only Phase 1. Additional soil and bedrock will be trucked off-site for Phases 2 and 3. Number of truck trips should be quantified to determine environmental impacts (including but not limited to community character, traffic, air, and noise pollution, etc.) from what is essentially a small mining operation. (Tignanelli)

Response 79: Section 2.1-4.2 in the DEIS provided a summary of the truck projections by construction phase for Project 1. For Project 2B, the maximum average truck trips per day during the connection phase were considered in section 4.2-2.2. Conservative estimates employing the peak truck trips and the variation in truck trips over the duration of the proposed program were considered in Section 2.10 and section 4.2-2.2 and other technical areas dependent on such related trucking activities, including community character, traffic, air and noise.

Comment 80: With the large volume of trucks to be used, can a schedule be established so that trucks do not use Route 9W at peak hours? Can trucks be minimized during evening and night hours to reduce noise and air pollution for local residents? (Casscles)

Response 80: Because the west connection site would serve as the TBM location and will be supporting tunneling activity, it is critical that flexibility is provided to allow the transport of materials as necessary to maintain the continuous work at the site. However, DEP will require its contractors to implement a Construction Noise Mitigation Plan, a conceptual version of which is included in the FEIS in Appendix 2.19-2, which will include demonstrating the need for periods when evening and overnight trucking activities are required at the connection sites.

Comment 81: 2.1-4.2, page 2.1-11, 12: The "Truck Projections" paragraph notes that average and maximum number of daily trips was estimated, noting that an average of 90 truck trips will be generated during the tunnel excavation phase. Table 2.1-2 notes 90 trips for this phase but refers to them as maximum average truck trips. Do the trips referenced in this table

represent average or maximums? How does the average number of truck trips compare to the maximum, 25 percent less, 50 percent less? (Wersted)

Response 81: Table 2.1-2 in the DEIS presented the maximum average truck trips by construction phase based on the amount of material being brought to and from the connection site, the average truck capacity, and the likely activities within each construction phase that are expected to occur at the same time within the current schedule. The maximum average reported is for the duration of the current schedule (e.g., 90 truck trips per day over 43 months) and the ratio would vary by construction phase. The following text has been revised in Section 2.1-4.2 of the FEIS to note that Estimates of the maximum average number of daily truck trips were generated for the anticipated 7½ years of construction at the west connection site based on the amount of material being brought to and from the connection site, the average truck capacity, and the likely activities within each construction phase that are expected to occur at the same time within the current schedule. **Table 2.1-2** provides the maximum average truck trips by key phase. As shown in Table 2.1-2, truck trip estimates would vary over the construction phases, with the greatest amount of truck trips sustained over a long period due to muck removal as the TBM advances (Phase 3: Tunnel Excavation). During this period, the maximum average reported is for the duration of the current schedule (e.g., 90 truck trips per day over 43 months) and the ratio would vary by construction phase."

Comment 82: 2.1-4.2, page 2.1-11, 12: The estimate of truck trips is based on the "likely activities" during each phase. How were these trips determined—i.e., based on the amount of cut or fill hauled to/from the site and average truck capacity, the amount of equipment and/or materials being delivered, etc.? (Wersted)

Response 82: The truck trips were determined based on the amount of material being brought to and from the connection site, the average truck capacity, and the likely activities within each construction phase that are expected to occur at the same time within the current schedule. Additional information is available in Appendix 2.10.

Comment 83: It appears the alternate of running construction traffic from the main entrance around the easterly side of the Shaft 6 building, then westerly of the change house and connecting to the proposed work area should be considered. Some minor modifications may be needed at the easterly curb (toward the portable toilets) and a new connection would have to be constructed to the parking lot northerly of the Shaft 6 building. The route would be much more direct than going down the hill and up again on the

southerly side of the site as shown, and may have the added benefits of reduced noise, reduced fuel consumption, reduced emissions, and shorter trip times. (Gray)

Response 83: The location of the entrance constructed by DEP was selected in consultation with the Town of Wappinger, in support of an earlier project, and was considered the most appropriate to address entrance and exit concerns from the site.

Comment 84: Our concern would be the amount of construction traffic coming and going from the (east connection) site. If there are provisions made to have the construction equipment, trucks, trailers, dumps, and such to go a different route, and if contractors are not obeying aspects of the roads, do we have the right to put a stop sign down at the bottom of the driveway and stop trucks from coming and going?

We are very, very concerned about the amount of traffic going down the neighborhood (near east connection site). I have kids that come out of the driveway, coming out on State Road, Old State Road. Coming off of Route 9D, coming around the turn, it's pretty much a blind turn. We have local people that live in the area that come around the turn doing 50 miles an hour. Is that going to be the same with the contractors when they come and go? (Perry)

Response 84: DEP's contractors would be subject to the same laws and regulations as other drivers. The Town of Wappinger and Dutchess County requested that all construction traffic follow the local routes outlined in the DEIS. Should construction trucks and deliveries not adhere to this route, DEP would require that corrective action be taken. The DEIS looked at worst-case locations in the study area and determined that even the contractor's largest vehicles that may be required at limited times would be able to make turns at the most difficult locations. Therefore, no physical improvements would be required.

Comment 85: The discussion of projected truck trips at the east connection site on page 2.1-19 is confusing. The text states that "the greatest amount of truck trips would be generated during Phase 1: Shaft Construction." However, shaft construction is Phase 2. Moreover, Table 2.1-5 on the same page shows the greatest number of truck trips per day to occur in Phase 4, with a maximum average of 66 daily trips, compared to 48 to 56 trips in Phase 2. (Dozier)

Response 85: The highest level of sustained truck activity at the east connection site would be during Phase 2: Shaft Construction. The DEIS noted that there

would likely be other short periods of time, such as Phase 4, where the daily truck estimates may be larger than those subjected to quantified analysis. However, since these periods would be very short in duration, they were not included in the quantified analysis. The FEIS has been updated to note that Shaft Construction is Phase 2, and text has been added to clarify that the maximum number of sustained truck trips would occur during Phase 2.

Comment 86: Approximately how many workers will be located on-site (west connection site)? What would be the location of parking facilities for these workers? (Casscles)

Response 86: Table 2.1-3 provides a summary of the maximum estimated number of workers that would be located on-site during the four phases of Project 1. Figures 2.1-7 and 2.1-8 provide the locations of the parking area for these workers.

Comment 87: 2.1-4.3, page 2.1-12: The "Worker Projections" paragraph notes that average number of construction workers was estimated. Table 2.1-3 refers to them as maximum number of construction workers. Do the workers referenced in this table represent average or maximums? How does the average number of workers compare to the maximum, 25 percent less, 50 percent less? (Wersted)

Response 87: The workers referenced in Table 2.1-3 are the maximum estimated number of workers that would be located on-site during the four phases of Project 1. The FEIS has been revised in Section 2.1-4.3 to note that: "Based on the likely activities involved in Phases 1 through 4, estimates of the maximum number of construction workers were developed for the anticipated 7½ years of construction at the west connection site. The number of workers on-site would vary with the various work shifts and would also vary over the construction phases, as shown in Table 2.1-3, which provides a summary of the maximum estimated workers for the four phases of Project 1."

Comment 88: 2.1-4.3, page 2.1-12: The estimate of construction workers is based on the "likely activities" during each phase. How were these workers estimated—i.e., based on the staff levels of the contractor and subcontractors, etc.? (Wersted)

Response 88: Staffing levels were estimated as part of the process of estimating construction costs. In that process, each work activity is analyzed to determine the probable crew sizes and characteristics, including both

workers and equipment, based on a database of information compiled from numerous similar, completed projects.

Comment 89: The tunnel after being dug will need to be lined with concrete. Will water for making concrete be obtained on-site (west connection site) or will wet cement be delivered to the site? (Casscles)

Response 89: There would be a concrete batch plant at the west connection site that would produce the concrete for the final bypass tunnel lining and connector tunnels during Phase 4 as well as for the connector tunnels, junction chambers, and other project elements for Project 2B. Sand, aggregate, cement, and water would be processed to produce the concrete. To connect to the Town of Newburgh water supply system, a water main would be extended from the west connection site south along Route 9W to the town's existing main, as shown in Figure 1-11. A pump station would be constructed on the west connection site to boost pressure of the water that would be drawn from the water main extension. Water would also be stored in tanks on the west connection site. During Phases 1 through 3, concrete and pre-cast concrete segments would be delivered to the site, prior to the construction of the concrete batch plant.

Comment 90: Anticipated noise impacts to residential receptors (both east and west sites) will be significant. For proposed rock crushing and cement plant operations (west connection site), NYSDEC recommends that these operations be situated on the site well away from receptors (nearby residences) most likely to be impacted by noise. In addition, NYSDEC recommends that DEP construct physical barriers or berms around each entire construction site. Such barriers will serve to provide security for the sites, as well as mitigation for anticipated noise and visual impacts to residential receptors. (Ballard)

Response 90: The rock crushing and cement plant operations (on the west connection site only) would be located as far away as practicable and feasible ~~f~~from any nearby sensitive receptors (residences). Furthermore, the nearest residences to the west connection site are located a substantial distance away. An assessment of the potential benefits from fixed noise barriers at the west connection site, such as those proposed for the east connection site, was original conducted before the issuance of the DEIS. However, due to the large distances between the noise sources and nearby receptors, it was determined that fixed noise barriers would be of very limited effectiveness in decreasing the noise levels at these receptors. Therefore, they were not included in the plans for the west connection site. However, placement of noise attenuation measures near fixed equipment would be

required per the Conceptual Noise Mitigation Plan (see Appendix 2.19-2) and would be included in DEP's contract specifications.

Comment 91: 2.1-7.4, page 2.1-21: Sustainable design guidelines related to construction could include the sourcing or disposal of excavated materials to/from local sites vs. long distance transportation of the same materials. The practice would reduce fuel consumption, emissions, and congestion related to off-site transportation. (Wersted)

Response 91: DEP's contractor would be responsible for the sourcing or disposal of materials related to shaft and bypass tunnel construction. Based on DEP's past experience constructing water tunnels, the contractor practice tends to control costs on such, which includes consideration of fuel consumption.

Comment 92: Will the City of New York post adequate bonds and allow the Town of Newburgh to hire personnel to monitor construction activity to ensure that all stipulations are performed to minimize detrimental environmental effects the citizens of our town will endure? (Casscles)

Response 92: DEP will not fund any additional monitoring fees beyond those required in accordance with applicable town approvals. DEP staff and a construction management firm will support compliance with contract stipulations and requirements agreed to in the FEIS.

10.0-3.4 PROBABLE IMPACTS OF PROJECT 1: SHAFT AND BYPASS TUNNEL CONSTRUCTION

LAND USE, ZONING, PUBLIC POLICY, AND OPEN SPACE

Comment 93: The figures in the "Executive Summary" do not show the additional property to the south that DEP recently purchased. (Cocks)

DEP indicated in section 2.2-3.3 that the home on the property will be used for field offices, so it should be identified when the figures are revised. (Cocks)

Response 93: Section 2.2-3.3 of the DEIS noted that during the construction period, DEP would secure the residence on tax parcel 8-1-15.3 as part of its overall plan for securing the entire west connection site. DEP employees and/or contractors may use the residence to support construction activities (e.g., informal meeting space or storage of project files and documents). In addition, where pertinent, figures in the FEIS include the building on this property in the west connection figures.

Comment 94: The property (west connection site) is described as a piece of property that is vacant and nothing is being done with it. It's the furthest thing from the truth. So I'm sort of curious as to why somebody did not investigate this further. They just made a lot of assumptions it seems to me. (R. Bell)

Response 94: DEP owns, or is in the process of purchasing, the properties comprising the west connection site. DEP has entered into these acquisition discussions with property owners under a willing seller-willing buyer arrangement. DEP knows of no development plans for the properties comprising the west connection site. As such, characterizing these properties as vacant or residential is consistent with their actual condition.

Comment 95: A portion of the construction (west connection) site is located in and Agriculture Residence (AR) district. Further, it has very significant soil types for fruit production. There is no mention in the DEIS that highly significant agricultural soils will be lost. Further, that the City of New York in pursuing this project may need to mitigate adverse effects that this will have on farming operations that are occurring nearby.

The DEIS does not mention its need to contact the New York State Department of Agriculture and Markets concerning the extensive construction activities that are proposed to occur on this highly significant agricultural soiled land.

This ridge in Middle Hope has uniquely excellent soils for the production of world-class wines. However, in the DEIS, there is a lot of talk of moving tens of thousands of truckloads of dirt, but there is no mention of the unique quality of these soils for agricultural production. The DEIS limits most of its analysis to those areas within 500 feet of the project site (west connection site), but just west and north of the site are very large acreages of apples, peaches, and other fruits. (Casscles)

Response 95: Within the west connection site, the only soil series that fall within the U.S. Department of Agriculture (USDA) Capability Class I (soils having slight limitations that restrict their use) and Class II (soils having moderate limitations that reduce the choice of plants or that require moderate conservation practices) are the Chenango gravelly silt loam , 0 to 3 percent slope (can), Mardin gravelly silt loam, 3 to 8 percent slope (MdB), and Middleburry silt loam (My) (see Figure 2.8-4). These soils occupy a small portion of the west connection site in the southeast corner in the vicinity of the stream and the northwest corner within a portion of the site that is not within the area of disturbance. The remaining soils within the west connection site fall within Capability Classes III, IV, VI, and VII, all of which have severe limitations that reduce the choice of plants or that

require special conservation practices, or both, or soils with severe limitations that make them unsuitable for cultivation. Therefore, the construction of Project 1 would not result in significant adverse impacts to agricultural soils.

Regarding the second part of the comment, DEP has confirmed that notification to New York State Department of Agriculture and Markets was not required.

Comment 96: The DEIS minimizes the true and very significant adverse impacts that this project will have on the land use of this area of the Town (of Newburgh) and the scope and duration of the construction project. (Casscles)

Response 96: The DEIS acknowledged that construction of Project 1 would cause temporary disruptions to neighborhood character as a result of tree clearing and grading, construction lighting, noise, and construction traffic. These impacts would be noticeable and would affect neighborhood character during the construction phase. Once Project 1 is complete, the west connection site would be restored and very little activity would occur on the site. DEP does not believe that this activity would constitute a significant adverse impact on the character of the Route 9W corridor.

Comment 97: The zoning section should discuss the buffering requirement in the Town of Newburgh. It has been discussed by the Planning Board and DEP, but a determination on the extent of the buffer has not been resolved at this time. (Cocks)

Response 97: DEP has met with Town of Newburgh Planning Board consultants on several occasions regarding the buffering requirement. As of February 28, 2012, DEP understands that the Town of Newburgh Planning Board attorney will prepare a written opinion on the issues surrounding the buffer for the consideration of the Planning Board. DEP will continue to work with the Town of Newburgh and its consultants to determine if the buffering requirements apply to Project 1 and what measures or procedures would be required should those requirements apply.

Comment 98: Section 2.2, Chapter 185 Zoning, section D (page 2.2-11) Harmony with the surroundings: The most visible element of proposed (west connection) site improvements is the creation of the steeply sloped landscape proposed as field with a ring of evergreens along the top. Landscapes with steep slopes in the neighboring area are covered with deciduous forest. The proposed landscape looks contrived and out of place, a landscape typically

found on landfills. This section should discuss how landscaping could be designed to fit in with the landscape of the surrounding neighborhood, notably the deciduous forest that covers much of the land to the north of the site along Route 9W and the deciduous forest that covers slopes in the background of commercial uses along Route 9W. How does the proposed field covering the steep slope fit in with other landscape along Route 9W? (Arent)

The DEIS contemplates that over 22 acres of land on a very steep slope will be stripped of all trees, shrubs, and grass. Can new grasses and bushes be quickly planted to reduce the severe risk of erosion of Old Mill House Creek? Further, the DEIS is coy about the project sponsor's level of interest in quickly reforesting and planting of grasses, shrubs, and trees this area to minimize silt and soil that will enter into the Old Mill House Creek. (Casscles)

Response 98: DEP has revised its proposed landscaping plan to include more trees and a greater diversity of tree species and shrubs at the base of the manufactured slope, at the top of the manufactured slope, and, to a limited degree, within the manufactured slope. Due to the shallow depth to bedrock in this area, it is not anticipated that a soil depth on this manufactured slope could be established that would support more than ground cover and shrub growth. DEP understands the intent of the Town of Newburgh is to restore the site to the maximum extent practicable to a condition that is similar to other sloped lands along Route 9W. In keeping with this intent, at the top of the slope, seedlings will be established at the end of the project to foster reforestation. DEP has also modified its landscaping plan, to include additional plantings on the lower portion of the property at the base of the manufactured slope.

Regarding the portion of the comment on potential impacts on the creek, a full SWPPP for each connection site was prepared and submitted to the respective municipalities for their review after the DEIS was issued. As part of the SWPPP, Erosion and Sediment Control Plans and project phasing plans have been developed for both sites, inclusive of soil stabilization and vegetation establishment. These plans address the clearing and grading activities during each phase of construction. The stormwater management system would capture and treat the stormwater runoff from new or redeveloped impervious surfaces. As part of the SWPPP, the long-term Inspection and Maintenance Plan would ensure performance and function of the stormwater management systems. Section 2.14 of the DEIS, "Infrastructure," addressed the potential impacts associated with the proposed construction activities. The DEIS concluded that there would be no significant adverse impacts from stormwater, and,

therefore, with the SWPPP elements in place, no mitigation for stormwater would be required. Section 2.14, "Infrastructure," of the FEIS provides additional information and updates related to the SWPPP.

Comment 99: Section 2.2, Chapter 185 Zoning, sections 5 and 6 (page 2.2-13) discuss landscape and screening and the character and appearance of the proposed use. Responses suggest a restoration plan and note that several trees over 8-inch diameter breast height (dbh) are proposed for removal. A total of 545 deciduous trees and 12 evergreen trees over 8-inch dbh are proposed for removal. The landscape plan proposes 213 evergreen trees, of which 180 are red cedar junipers, and 47 deciduous trees. A landscape very different from the surrounding area is proposed. This section should list types and quantities of trees removed as compared to types and quantities of trees proposed and how the proposed vegetation will restore the vegetation slated for removal. This section should also discuss how the proposed landscape fits in with the surrounding landscapes. The proposed landscaping should be modified to better restore the vegetation that was removed and to help the landscape blend with surrounding landscapes. (Arent)

Response 99: DEP has revised the proposed landscaping plan to include native and indigenous species that are similar to other trees within the surrounding landscapes. Due to the constraints of soil conditions on the site, DEP does not believe that it can successfully replace all species (in number or type) removed from the site. However, the revised landscaping plan does take into account the intent to reforest the site with native tree trees (seedlings) where soil conditions are adequate for replanting.

Comment 100: Section 2.2-5.1 (page 2.2-5.1) suggests that the change from the property to a public utility use would not cause any significant change to the land use or character of the surrounding area. However, the visual character of the site will be changed from one of a deciduous forest to a landscape characteristic of a landfill, thereby changing the character of the neighborhood. (Arent)

Response 100: DEP does not believe that the proposed use would resemble that of a landfill; however, DEP has modified its landscaping plan to address the Town of Newburgh's comments. Where possible, pockets of plantings, mainly shrubs and varied native species groundcover, have been added to the slope facing Route 9W to enhance the visual diversity. In addition, a greater diversity of native tree species has been included throughout the site for both construction and final restoration plantings. Finally, where possible on top of the slope, seedlings will be established to foster

reforestation. While significant clearing and grading would occur to create the construction areas necessary to complete Project 1, the landscape plan prepared for Phases 1 through 5 of construction, and the site restoration plan, would minimize the visual change experienced. It would not be possible to avoid the clearing and grading required.

Comment 101: The DEIS is deficient in defining tree removal along River and Old Post Roads. It was not clear in the DEIS if there's any tree removal that's happening down River Road. (Beretta)

Response 101: While the design of the dewatering pipeline is not complete, it is not expected to require additional tree removal along River Road.

Comment 102: Should the project be completed, how much land will not be retained by the City of New York and can either be devoted to open spaces as a park, farmland for grapes, or other uses that will generate real property assessments to benefit the Town of Newburgh? (Casscles)

Response 102: Based on current planning for the site and constraints given the fact that the site will be the location of a water supply facility, none of the parcels would be available for use as public space or a park. For the house purchased at the south end of the site (5503 Route 9W, tax parcel 8-1-15.3), it would likely be resold by DEP after completion of all construction.

Comment 103: The conclusions of the DEIS minimize the real effects that this project will have on the character and livability of the neighborhood, natural environment, and to ground water supplies. The DEIS says such adverse effects "may temporarily" affect this (west of Hudson) area, but it will in fact will adversely affect the area on a more permanent basis. (Casscles)

Response 103: DEP does not believe that there will be long-term or "more permanent" changes to the character of the surrounding area. Once Projects 1 and 2B are complete and the site is restored, there would be little activity on the site that would affect "livability of the neighborhood."

NEIGHBORHOOD CHARACTER

Comment 104: With regard to the characterization of the homes near the west connection site on Route 9W, the DEIS is deficient. The DEIS largely characterizes this area as a "commercial corridor" but does not articulate to the full extent that private residences exist there and are maintained and that in

some cases generations of families have lived there. The people who live in this area are given short shrift in the DEIS.

The following statement from the DEIS downplays the fact that people live there in well maintained homes and that their lives and property will be affected: "However, the neighborhood character is dominated by the larger commercial uses including two motels located directly across Route 9W from the west connection site. A number of buildings in the study area and on the west connection site are vacant, aging and appear to be in a deteriorating condition, giving portions of the study area a blighted appearance."

The above statement is a disservice to the people who live near the west connection site and maintain their homes and property. It needs to be corrected. (Beretta)

Response 104: The evaluation of neighborhood character in the DEIS followed and the methodologies presented in the Final Scope of Work, which applied accepted procedures under SEQRA and suggested by the *CEQR Technical Manual* on how to characterize and evaluate neighborhood impacts for each potentially affected community. The characterization of the neighborhood was not intended to downplay the residential components of the neighborhood, which DEP acknowledges are relevant to its planning.

Comment 105: My concerns start with the character of the neighborhood (west of Hudson) on River Road. That character and feel must be maintained. This is a quiet, rural road. And it is described in your DEIS as being a rural and quieter than it is out on Route 9W. And I'm concerned about any work that will run 24 hours a day for about a 3- to 4-year period during the overall project that is going to disturb that character and quality of life. (Beretta)

Response 105: No major construction activity related to the direct construction of the west connection shaft and bypass tunnel is expected along River Road. Only the construction of the dewatering pipeline would occur along this corridor, and construction at this location would be limited to a few months and would occur during normal working hours.

Comment 106: Should change in community character due to changes in vegetative cover and contours be listed? (Arent)

Response 106: Visual character is only one of many elements—including land use, zoning, and public policy; socioeconomic conditions; open space; historic and cultural resources; urban design and visual resources; shadows; transportation; or noise—that combine to give a neighborhood character

its distinct personality. As described in the "Neighborhood Character" section of the DEIS (Section 2.3), the west connection site's visual character would change due to clearing and grading on portions of the west connection site during construction of Project 1. Although construction of Project 1 would result in visual changes to the site, these effects would be limited in location, and not expected to result in significant adverse impacts on visual character. Further, the commercial character of the study area and the site's location along a busy arterial roadway, with relatively high levels of truck traffic, would diminish the effects of the site's visual changes on the neighborhood character of the study areas and no significant adverse impacts to neighborhood character would be expected to occur as a result of Project 1.

Comment 107: Section 2.3-3.3, (page 2.3-5): The last paragraph concludes that the effects to the neighborhood character would be temporary and would not result in any long-term disruption to neighborhood character once construction is complete. However, the proposed landscape creates the appearance of a landfill, changing the visual and community character of the neighborhood. (Arent)

Response 107: In the period between the issuance of the DEIS and FEIS, DEP coordinated with the Town of Newburgh to further refine the landscaping plans for the connection sites during and after construction. The DEIS noted that no significant adverse impacts on visual and neighborhood character are expected at the west connection site, and this conclusion is still applicable for the FEIS.

Comment 108: I think you're downplaying the impact that it's going to have on our quiet community (Chelsea). (Weyant)

Response 108: Detailed evaluations of the potential impacts of noise from construction on the communities east and west of the Hudson River were provided in the DEIS. The DEIS undertook detailed examinations of potential impacts during construction and determined that Project 1 and Project 2B would result in potential temporary significant adverse impacts to neighborhood character (east connection site only), transportation, and noise. After detailed assessments, including the volume of construction-related vehicles through Chelsea and a restriction on late-night truck traffic during Project 1 construction (east connection site only), it was determined that the predicted incremental noise levels in communities along transportation routes from the interstate highway system to the east connection site would not experience significant adverse noise impacts. In the immediate vicinity of the east connection site, views of the site and the Hudson River

along River Road would be adversely affected by construction activity and lighting, but these effects would also be temporary, limited in location, and not expected to result in significant adverse impacts on visual character. Although the combination of the changes to visual character as well as the increases in traffic, lighting, and noise during construction activities would temporarily adversely affect neighborhood character near the east connection site, these temporary impacts would not be expected to result in disruptions to neighborhood character in communities further distant from the east connection site.

Comment 109: For reasons primarily provided from the Town (of Wappinger's) noise expert, we believe that the significant adverse environmental impact on the character of the neighborhood in the vicinity of the project is severely understated in the DEIS, and consequently that the proposed mitigation measures are inadequate, and therefore that the conclusions reached on this topic in the DEIS are underestimated and incorrect. (Stolman)

Response 109: In the time period between the issuance of the DEIS and FEIS, a series of meetings were undertaken between DEP and representatives of the Town of Wappinger Planning Board. The evaluation of noise impacts and proposed mitigation were among the key topics discussed in these meetings. In consideration of the comments received and discussions held at these meetings, Section 2.19 has been revised for the FEIS, and a Conceptual Noise Mitigation Plan has been added to Appendix 2.19-2 of the FEIS.

VISUAL CHARACTER

Comment 110: Should visual impacts from Route 9W be listed as an impact in need of mitigation? (Arent)

Response 110: The visual changes to the west connection site and the views of the site from Route 9W were described in the DEIS in Section 2.4, "Visual Character." While the visual character of the west connection site would change, and portions of the site would appear less forested, the overall visual character of Route 9W and the study area would not be significantly affected by the proposed project, and no significant adverse visual impacts to Route 9W would result.

Comment 111: Section 2.4-3, Study Area (page 2.4-9): The first paragraph describes the visual character along Route 9W but does not include the large forested areas both along Route 9W on west side of Route 9W to the north of the site, and on steep slopes behind commercial uses along Route 9W. When

viewing the project area from aerial photographs, tree cover dominates the area to the north of the site. (Arent)

Response 111: An assessment of visual impact requires consideration of how changes to the built environment's arrangement, appearance or functionality affects how the public experiences the area from the perspective of a pedestrian or vehicle traveling a public roadway and not from an aerial perspective. While changes to the site would be visible to pedestrians and vehicles traveling along Route 9W in the immediate vicinity of the site, and partially visible from a small number of residences located to the south and directly across Route 9W from the site as well as from the two motels, it would not be expected to negatively affect the overall visual character of the study area. However, the text in reference in Section 2.4-3 has been updated in the FEIS to include additional descriptions of the forested areas and sloped areas along the west side of Route 9W and to the north of the site along Route 9W. Provided is the revised text for this section that is included in Section 2.4-3 of the FEIS:

In general, DEP's analysis indicated that there are no notable visually sensitive locations in the study area and no scenic vistas or resources that allow for exceptional or scenic views. While an apple orchard with scenic views is located west of the west connection site beyond the Route 9W corridor, this area is visually separated from the west connection site by dense vegetation and steep changes in grade and is not visually connected to the west connection site.

Along the Route 9W corridor, commercial uses line the roadway to the east and west with a few residential uses interspersed. On the east side of Route 9W, beyond the commercial corridor, portions of the study area are densely forested. Beyond the commercial corridor that lines the west side of Route 9W, the study area is largely forested and slopes steeply upward. A small number of residential properties are located on the hillside beyond the commercial strip, but most are not visible or only partially visible from Route 9W due to the dense vegetation and steep change in elevation. Immediately north of the west connection site along the west side of Route 9W the study area is densely forested.

Comment 112: Section 2.4-3.3 (page 2.4-10): The visual character of the study area surrounding the west connection site will change as described in comment 5[14] above. (Arent)

Response 112: As described in Section 2.4 of the DEIS, the visual character of the west connection site would change, and portions of the site would appear less forested. However, the changes to the appearance of the west connections site would not be expected to significantly affect the overall visual character of the study area.

Comment 113: Retaining vegetation (at the west connection site) would act as a visual barrier to the construction activities there. (Casscles)

Response 113: In the period between the issuance of the DEIS and FEIS, DEP coordinated with the Towns of Newburgh and Wappinger to further refine the landscaping plans for the connection sites, presenting new approaches to improving the sites both during construction and after completion of the project. Where appropriate, existing vegetation would be retained, and the updated landscaping plans include plantings to help screen the sites during construction.

Comment 114: If construction is to occur in the evening, how will the construction site (west connection site) be illuminated? Can lights be reduced and be reflected downward to minimize light pollution to the surrounding community? The lighting plan described in the DEIS (page ES-12) should be more specific on how light pollution from the site can be reduced. Again, this project will be often going on 24 hours per day, so light pollution will be a problem, especially since much activity will be going on the top of the hill visible to all residents. Mitigating factors such as using downward pointing lights, and maintaining natural (trees and shrubs) borders and artificial ones to reduce light pollution are essential. It is important that the DEIS mentions implementing a lighting plan. However, it is more important that such plan effectively mutes light pollution that will come from this site and which may very well adversely affect the sleeping patterns of local residents and reduce enjoyment of their property during the evening hours should they wish to venture

[14] Refers to the commenter's letter: Section 2.2-5.1 (page 2.2-5.1) suggests that the change from the property to a public utility use would not cause any significant change to the land use or character of the surrounding area. However, the visual character of the site will be changed from one of a deciduous forest to a landscape characteristic of a landfill, thereby changing the character of the neighborhood.

outside of their homes. The DEIS does minimize the scope of this project as it relates to lights emanating from the construction site. (Casscles)

Response 114: While a summary of potential lightning impacts were described in the DEIS's Executive Summary, a more detailed description of the methodology undertaken and measures that would be required to minimize lighting impacts during construction were provided in the FEIS in Section 2.4, "Visual Character."

Comment 115: Section 2.4-2.3 does not list the Gomez Mill House under the list of historic sites. The Gomez Mill House is on Mill House Road, off Route 9W on the Town of Marlborough border. (Cocks)

Response 115: The Gomez Mill House was not included in the list of historic sites because it is located outside the study area for the visual and aesthetic resources analysis. As described in the DEIS in Section 2.4, study areas for visual resources and aesthetic resources were delineated to include areas within visual range of the connection sites that could be affected by the construction activity. The Gomez Hill House, located on Mill House Road northeast of the study area for the west connection site, would not be visually impacted. Since this historic property is located outside the visual and aesthetic resources analysis study area, it was not included in the list of historic sites.

HISTORIC AND ARCHAEOLOGICAL RESOURCES

Comment 116: Section 2.5 should also include the Gomez Mill House in the historical site analysis. (Cocks) The DEIS does not mention that Old Mill House Creek runs to the Old Mill House, the oldest Colonial Jewish dwelling in North America on the National Register of Historic Places and home to Luis Gomez, who established a trading post 2,250 feet from the project in 1714. (Casscles)

Descriptions of the intended use of Route 9W to transport the enormous amounts of removed earth for the new tunnels from the source point south to the juncture of Interstate 84 will clog the one access tourists have from south to north to reach Gomez Mill House. As you estimate the length of the project to be 10 or more years, the impact on our site, scheduled to celebrate its 300th anniversary in 2014, will severely impact our tourist trade and our ability to manage our site. The Gomez Mill House is a major tourist destination each year for a number of groups and individuals interested in American history, ecology, conservation, Jewish American history, crafts, and social activism. While the philosophical mission is critical to our existence, the physical site is essential. Its protection is a

priority that we have taken seriously and invested in since the Foundation was established in 1979 with the help of both public and private funds. (Abrahams)

Response 116: The Gomez Mill House is not located within the historic resources Area of Potential Effect (APE)/study area. The Gomez Mill House is located over ½ mile northeast of the study area. As it is located beyond the range of potential physical and contextual impacts, it was not identified as a historic resource in the DEIS. However, a footnote has been added in the FEIS indicating the presence of this significant historic resource beyond the project's study area. In addition, the construction traffic from the proposed project would not significantly impact tourism and is not anticipated to pass near the house.

Comment 117: The surrounding neighborhood of the project site (west connection site) is much more than the marginal mixed use commercial zone characterized in the DEIS. The DEIS should be corrected to reflect those very significant historical, cultural, and community resources that must be recognized and preserved should this project move forward. This area of Middle Hope north from the Overlook farm stand to beyond the Ulster County line is very significant in American agricultural and horticultural history. This area was called "the birthplace of American viticulture" (where) nationally recognized grape hybridizers worked to develop new hybrids from the 1860s to 1890s. This ridge has the oldest operating vineyard in the United States at Benmarl Vineyards.

The DEIS grossly underestimate the aesthetic, visual, historical, and cultural resources and resource inventory of the area. Those resources are the presence of the Old Mill House National Historic Site (see comment above), the location of the Cedar Hill Cemetery that was designed by Andrew Jackson Downing (see comment below), and the burial of A.J. Downing and his brother, Charles Downing, at such cemetery. Further, that this precise area is the former home and location of noted grape hybridizers, A.J. Caywood, the Barnes Family, and J.K Ricketts. (Casscles)

Response 117: DEIS Sections 2.3, "Neighborhood Character," and 2.4, "Visual Character," provided a detailed assessment of the communities and potential impacts from construction of the proposed project. The following excerpts describing the history of the west connection site and vicinity has been added to pages 2.5-13 and 14 in Section 2.5 of the FEIS with respect to this area's fruit farming history: "…It is possible that the west connection site was used for the growing of grapes or other fruit during the 19th century as this region of Newburgh was known for its grape

cultivation. The remainder of the site covered portions of other larger farm properties owned by William H. Armstrong (287 acres), Daniel Berean (47 acres), D. D. Barnes (25 acres), and Isaac Conklin (115 acres). …The 1891 Beers atlas depicts the western portion of the west connection site as undeveloped and included within the larger farms of a woman identified only as Mrs. Williams (who owned a large parcel occupying the farms owned by D.D. Barnes and Daniel Berean as seen on the 1864 Hughes map) and of P. Conway (whose farm covered a portion of the former W.H. Armstrong farm). The portion of the west connection site that was depicted as part of the farm of Isaac Conklin on the 1864 Hughes map is depicted as the farm of Patrick Flannery on the 1891 Beers map. The 1891 map depicts a structure near the northwestern corner of the Flannery farm, near the center of the west connection site. Like many of their neighbors at the time, both the McCarty and Flannery families were headed by Irish immigrants who owned and operated fruit farms on the west connection site and resided on the site for decades. Undeveloped portions of other farms were also included within the site. The west connection site continued to be used for fruit farming until the second half of the 20th century."

Footnotes have also been included in Section 2.5 of the FEIS regarding the Gomez Mill House and the Cedar Hill Cemetery.

Comment 118: The significance of the Cedar Hill Cemetery has also been grossly overlooked in the DEIS. The cemetery is one of the first public cemeteries to be laid out in America as a park with landscaping. It was designed in the 1850s by A.J. Downing, who was responsible for laying out the public grounds for the White House, U.S. Capitol, and Smithsonian Institution. He, along with Calvert Vaux, began the design for Central Park. Further, the Downings were nationally noted horticulturalists who helped to found the American Pomological Society, edited its publication the "Horticulturalist," and were prolific nurseryman. (Casscles)

Response 118: As described in National Register Bulletin 15, *How to Apply the National Register Criteria for Evaluation*, ordinarily cemeteries and graves of historical figures are not considered eligible for the National Register. These types of historic properties would qualify if they are integral parts of historic districts that do meet National Register eligibility criteria or if the cemetery derives its primary importance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events. The Cedar Hill Cemetery is historically significant, both for its association with the rural cemetery movement that started in the 1830s and for its association with A.J.

Downing. The cemetery was not included as a historic resource in the DEIS as there is no potential for adverse impacts to occur on the historic character of the cemetery. The APE/study area only touches the edge of the cemetery along Old Post Road and does not encompass any significant historic or landscape features. The larger cemetery area was not included in the APE/study area as the work in proximity to the cemetery would involve the installation of a below-grade dewatering pipeline that would not be visible upon project completion. However, a footnote has been added in the FEIS indicating the presence of this historic cemetery at the edge of the APE/study area.

Comment 119: Efforts should be made to retain and enhance any remaining structures associated with brick making that occurred here via the Rose Brick Company and Jova Brick Company. (Casscles)

Response 119: Any work to preserve structures associated with the Rose Brick and Jova Brick Companies was beyond the scope of the DEIS, with the exception of ensuring that proper protection measures are taken during construction of the dewatering pipeline within the roadbeds of the streets that border these resources, as had already been disclosed in the DEIS.

Comment 120: This portion of the DEIS (page 2.5-16) discusses possible damage to the historic home at 5495 Route 9W that may occur from constructing a pipeline along Route 9W. However, it does not discuss similar damage that could occur to a home two doors down and another home three doors south of that from 5495 Route 9W. These two structures are of exactly the same construction as the home at 5495 Route 9W and were built during the same period. The DEIS should ensure that these other two unidentified historic homes are not damaged from installing a pipeline. Further, it is important that the homes located in-between these other unidentified (in the DEIS) historic homes (such as 5487 Route 9W) are also not subject to structural damage due to the construction of the water main along Route 9W. (Casscles)

Response 120: Construction of the proposed pipeline is not anticipated to damage any homes along the proposed pipeline route, and all precautions would be made to ensure this. The final alignment for the dewatering pipeline/water main extension would be selected to minimize conflict with existing structures and standard construction practices for buried pipelines would be employed to avoid damage to adjacent structures. Therefore, consideration was given to all structures located along the alignment of the dewatering pipeline/water main extension to ensure they are not damaged during construction.

Comment 121: It puzzles me that you forgot to include the Old Wawarsing Cemetery in Wawarsing, which is directly above the tunnel. Walking on the grounds here I noticed considerable soggy conditions and, according to the current USGS report, there are springs here. I cannot help but think that the connection is obvious and the water here may be that of the tunnel leak. However, my concern is that what does DEP plan on for the next 8-10 years while the tunnel continues to leak and afterward when the tunnel is to be repaired? What will be the precautionary measures taken to ensure the integrity of this Old Burial Ground? Many of Ulster County's earliest settlers are buried here, including noted dignitaries and several Revolutionary War Veterans. (L. Smith)

Response 121: The USGS Report, "Preliminary Analysis of the Hydrologic Effects of Temporary Shutdowns of the Rondout-West Branch Water Tunnel on the Groundwater-Flow System in Wawarsing, New York," describes the potential zone of impact to the unconsolidated groundwater elevations (those closest to the surface) from the Delaware Aqueduct, which rise due to seasonal precipitation. The report demonstrates an incremental rise in the water table; however, in the area around the cemetery on Route 209 south of Port Ben Road, the report shows that the elevated groundwater levels do not respond to changes in the RWBT pressure, and are separated from the regional water table. However, further monitoring and future tunnel shutdowns will provide more information for the USGS monitoring network to continue to refine this issue.

SOCIOECONOMIC CONDITIONS

Comment 122: We got 30 acres of property right next door to you guys (west connection site), and you are drilling a hole maybe 100 feet off the edge of our property. And we had scheduled to put some type of a development in there. And I was just wondering what would you do if we go ahead and do that development there? (Pelella)

I'm also a part owner of the 30 acres to the north side of the project site (west connection site). And my concerns are that the shaft is literally within 100 feet of our property, which we bought in 2005 for an investment. And we spoke to numerous people throughout the last few months, with really no answers or nothing as far as what they were going to do or what the solution was. The problem we have is we set higher than the project, so there's not much they can do. We were promised a lot of things that went kind of by the wayside and were never really answered by numerous people in the organization. And I'm curious what they're going to do about all this. (W. Bell)

I too have all the concerns that my brother (W. Bell) just mentioned. The shaft being as close to the property line as it is, the noise, the pollution. So many things certainly fit the negative impact this investment has on the 30 acres of the land that is owned. I just don't know how they would mitigate sound, noise, pollution. And again, it may be somewhat redundant, but it sounds also as if you take the investment that was made in a parcel of property and wash it away literally. (R. Bell)

Mr. Tobias from DEP actually did walk our parcel. And he made the comment to us that there was what he considered a significant impact to our parcel because of the proximity of this boring hole and the project. He even offered to us several different potential solutions in terms of mitigating or remunerating us somehow from what we consider a significant devaluation of the property, only to find out that within 2 days there was a negative response to mitigate anything. (R. Bell)

Response 122: Before the Final Scope of Work for the DEIS was completed, DEP consulted with the Town of Newburgh on potential new projects in the west connection site's study area. At the time the Final Scope, DEIS, and FEIS were prepared, no formal applications for site plan development on the subject parcel were proposed.

Comment 123: One topic which the DEIS does not address, and which the FEIS should address, is the fiscal impact of the project upon the taxing jurisdictions/districts within which the subject property (east connection site) is located. This tax impact analysis should take into consideration the potentially diminished assessment of the surrounding properties during the long-term construction of the project, as well as the potentially increased assessment of the subject property as a result of the project. This fiscal analysis should be specific and quantitative. (Stolman)

Response 123: The proposed action is not anticipated to result in a significant diminishment in the assessment of properties surrounding the project site in Wappinger. In addition, if the town were to reduce the assessments of the handful of properties surrounding the project site, these properties represent a very small percentage of taxable properties within the Town and therefore any reduction in their assessed value would have minimal effect on the taxing entities in the project area. In addition, the improvements to be constructed in Wappinger are largely confined to new aqueduct shafts and tunnels for the conveyance of the city's water supply. As such, they are expected to be exempt from assessment for real property tax law, in accordance with State law (RPTL §406(4)). Therefore the proposed project is not expected to result in any substantial increase in the taxable assessed value of the city's parcel and would not affect the tax

base of the Town of Wappinger. Therefore, the proposed project is not expected to result in any substantial increase in the taxable assessed value of the city's parcel.

Comment 124: We have lived in our home for 25 years and made significant financial investments in it. The magnitude of this project and the considerable length of time it will take will have a severe economic impact on our family. Although DEP claims that they will do their best to mitigate the impact to our Town (of Wappinger), neighborhood, and my family, they cannot mitigate the financial loss we will experience that this project will cause. (B. Anderson)

Property values will be affected. The ability to resell or to rent property and the quality of life will be affected for a long period of time. It's temporary in the sense that it will end, but it is long term, and the value over that 10-year period needs to be estimated and those who are most affected should be compensated. And I would urge the town (Wappinger) to investigate ways for that to happen as this project goes forward. (C. Smart)

I want to know if there is a mechanism and what that would be to compensate the community (Wappinger). (Greene)

My concern also is with the value of our homes for the next 10 years. I'd like to see formally some type of documentation on how the city will address the difference between my assessed value and whatever value I can get out of my house, assuming that somebody will try to buy it now. How is the city going to come up with a mitigation plan for that, vs. the noise mitigation and the traffic mitigation? I'd like to know that economic mitigation to my house. (N. Anderson)

This (project) is about to destroy my and my family's livelihood for the simple fact it's no way possible that I can sell my property for the next 10 (years) because no one is going to even consider it with what's going to go on here. This is going to be massive, total chaos. Where does the compensation come in for this inconvenience for me for New York City to get water? Somebody needs to consider what they are going to do for me and my family so that I can live the rest of my remaining time in a peaceful manner. Find out what you're going to do to compensate the people that are going to be inconvenienced. (Pritchard)

Response 124: As detailed in Section 2.6, "Socioeconomic Conditions," of the DEIS, the proposed action is not anticipated to result in any significant adverse economic impacts that would require mitigation. The Shaft 6 site in Wappinger has been operating as a water supply facility since the 1930s;

there would be no change in the operations of the facility once the project is complete. While it is recognized that the construction period would create localized impacts that may temporarily affect quality of life, it is not anticipated that these temporary impacts would have measurable long-term effects on property values.

Comment 125: An economic analysis of the impact on upstate New York City water customers should be included in the EIS. The increase in water purchase costs need to be identified so that upstate communities can properly plan for future budgetary needs. The net result of the increase in the price bulk water purchases could be to make water to upstate communities unaffordable. In analyzing the cost impact, DEP should use an allocation of costs based on an equitable direct benefit. Elements of the project that do not provide a direct benefit to the community (in this case, Newburgh) should not be allocated to upstate customers. The same argument could be made for facilities north of New York City in Westchester County that provide no direct benefit to the residents of Orange County including chemical addition and/or UV disinfection. (Osborne)

Response 125: DEP has undertaken an analysis of the effects of water rates in the FEIS, located in the Section entitled "New York City Water Rate Structure and Water Rates." For wholesale customers outside of New York City, water rates are determined by the Water Board in accordance with the formula set forth in the Water Supply Act of 1905 (the "Act"). The Act states that the rate for water service to upstate wholesale customers is determined on the basis of the actual total cost of the water to the city, after deducting the capital and operating costs incurred within the city limits in connection with the distribution and delivery of the water within the city.[15] See NYC Admin. Code §24-360(c). The actual retail rates that upstate residents pay are further determined by the specific water supplier.

The Water Board retains rate consultants to release an annual report on the cost of supplying water to upstate wholesale customers, which includes an analysis of projected costs and consumption to derive a rate per million gallons. With regards to the Water for the Future Program, the Water Board will continue to set its rate for customers outside of New York City based on the cost of service in accordance with applicable law.

[15] See Report of the Cost of Supplying water to Upstate Customers for the 2012 Rate Year, page 19

Comment 126: When evaluating the economic impact along the Delaware below the dams, will you hold hearing for local impacts? Will your research include discussions with local businesses, such as Al's Sport and Pepacton Cabins? Will the flooding issues include the homes, farms, and cabins? Will more than the use of pure science enter into your collection of data? (Homovich)

Response 126: The methodology and assessment of these issues will be disclosed in the second EIS or a subsequent environmental review, as appropriate.

Comment 127: Pursuant to New York City Administrative Code Section § 24-301(a):

The lands taken, or to be taken, for storage, reservoirs, or for other constructions necessary for the introduction and maintenance of a sufficient supply of water in the city, or for the purpose of preventing contamination or pollution, shall be assessed and taxed in the counties in which they are or may be located, in the manner prescribed by law, exclusive of the aqueducts.

A case interpreting this section indicates that the land above the aqueduct may be taxed.

The DEIS should approximate the value of the constructions on site, exclusive of the shaft and bypass tunnel.

The DEIS indicates that approval from NYSDOS is required for the use of underwater lands, but there is no reference to the amount (acreage) of underwater lands to be acquired in the Town of Wappinger. Under prior cases, this land may be taxable. The amount of land that will be acquired underwater for the bypass tunnel needs to be addressed. (Horan and Horan/Roberts)

Response 127: DEP will comply with all applicable laws and regulations; however, DEP is not obligated to pay taxes on subsurface easements for aqueducts. The City will be acquiring an easement or other permission from the State of New York for the portion of the bypass tunnel lying under the Hudson River. This right would not be subject to real property taxes under applicable law.

Comment 128: In section 2.6-3, there is very limited discussion of the possibility of indirect displacement of residential population in the area of the east connection site. Chapter 5 of the *CEQR Technical Manual* and New York City Fair Share Guidelines indicate that an average income analysis should be done for the affected property owners.

The east and west connection sites are treated the same for purposes of socioeconomic impact. This is not proper since the surrounding areas have very different characters. The *CEQR Technical Manual* indicates that the socioeconomic study area should be coterminous with the areas considered for neighborhood character impact. This was not done.

There is no discussion of the socioeconomic impact that 10 years of construction would have on the surrounding properties in the study area of the east connection site. A more detailed analysis of the effect of the construction activities on the homeowners within the project area surrounding the east connection site should be conducted. (Horan/Roberts)

Response 128: *The CEQR Technical Manual* outlines when it would be appropriate to conduct analysis of potential direct and indirect socioeconomic effects. Construction activity, even construction activity occurring over a long period of time, is not specifically identified in the *CEQR Technical Manual* as an activity that may result in direct or indirect effects. Project 1 would not result in any direct displacement of residents from the project site or study area. Nor would Project 1 result in any socioeconomic conditions within the study area that would lead to the indirect displacement of residents. (For related information, see response to Comment 124 which explains how DEP is not required to assess impacts to property value as a result of construction.)

NYSDEC's SEQR Handbook (on page 118) states that "possible reduction of property values in a community … are not environmental factors" that require review in an environmental impact statement.

COMMUNITY FACILITIES AND SERVICES

Comment 129: New York City Administrative Code Section § 24-355(a) provides:

It shall be the duty of the commissioner of environmental protection to provide proper police protection to the inhabitants of the localities in which any work may be constructed under the authority of this subchapter during the period of construction, against the acts or omissions of persons employed on such works or found in their neighborhood.

Subdivision (e) of the section provides:

e. Any expense necessarily incurred by a county, town or city in a criminal action or proceeding against any person employed on any works constructed or in process of construction under this subchapter, or in the suppression of riots among persons employed on such work, or in the prevention of the commission of crime by such person, after being duly audited, as required by law, shall constitute a claim in favor of such

county, town or city against the city of New York and an action may be maintained on such audit as for money paid to the use of the city.

"Community Facilities" (Section 2.7-4) does not address police protection for the east connection site. Is there a need for an Emergency Action Plan in the case of a shaft or tunnel collapse? Is the project governed by federal Mine Safety Administration provisions? (Horan and Horan/Roberts)

A discussion of how the applicant shall provide police protection in accordance with New York City Administrative Code § 24-355 should be provided. (Horan/Roberts)

Re: rescue planning. It is assumed that the Occupational Health and Safety Agency's Tunneling Regulations found at 29 CFR § 1926.800 are applicable to the project. 29 CFR § 1926.800 requires rescue teams for sites where there are 25 or more workers underground. Does the applicant intend to rely upon local resources to assist in rescue applications or will it have its own teams dedicated to rescue efforts at the site. If local agencies are to be used is any special equipment necessary? This should be discussed. (Horan/Roberts)

Response 129: DEP and the selected contractor would be bound by the provisions of New York City Administrative Code § 24-355. The selected contractor would be required to prepare and implement a site safety plan (e.g., health and safety plan [HASP]) as well as an emergency action plan (EAP) during the construction period in accordance with all appropriate federal, state, local, and DEP rules and regulations, including OSHA [Mine Safety and Health Administration (MSHA) provisions are not applicable to the construction of Project 1]. The site safety plan would outline the steps to be taken in the event of any incident either in the shaft or above-ground. The site safety plan would identify the proper communication protocol and emergency response plan to ensure the safety of site workers and any visitors to the site. DEP would ensure that the contractor is in full compliance with that site safety plan. DEP believes that the construction of Project 1 would not result in any abnormal risk to residents of the Town of Wappinger.

DEP would continue to coordinate with the Town of Wappinger and New York State Police during the construction period to ensure proper response to any incident on the project site. DEP Police also make regular patrols of all DEP facilities outside of New York City. DEP does not believe that construction of Project 1 would cause any criminal activity within the Town of Wappinger.

For surface rescues and emergencies, such as fires, the town fire and rescue services would be asked to respond. A water supply of at least 30,000 gallons would be available at each site. At the west connection site

(Shaft 5B) this supply would be on-site during shaft excavation and eventual tunneling operations, but would not be available during the site preparation. At the east connection site (Shaft 6B), this water supply would be available for firefighting throughout the project, but the source changes: existing Shaft 6 would service Phases 1-2, and the Hudson River would supply Phases 3-5. For underground work, including shaft construction, the contractor would be responsible for responding to any fires or emergencies and would be required to have a five-person rescue team on site. The local fire department and rescue services would still respond to the surface and provide general support (e.g., hospital transport), but would not be asked to respond underground.

NATURAL RESOURCES AND WATER RESOURCES

Comment 130: Figure 2.8-6, West Connection Site: Flagged Wetlands: Change east connection site on legend to west connection site. (Arent)

Response 130: The legend on Figure 2.8-6 has been revised for the FEIS.

Comment 131: Section 2.8-3.3, Geology and Soils (page 2.8-57): Soil restoration and remediation must be discussed. In efforts to restore the site to enable tree growth, at least 2 feet of topsoil must be added on top of crushed rock proposed for fill and on top of bedrock or hardpan slopes. (Arent)

Response 131: A minimum of 6 to 12 inches of topsoil would be provided throughout the site, and the plan for backfill and topsoil placement has been designed to support the project landscaping plan. The landscaping plan includes reforestation, where possible, as well as site screening, both of which will be achieved through the planting of a diversity of native tree, shrub, and ground cover species.

Comment 132: The DEIS in a very egregious manner minimizes the significant environmental effects of “leveling off” the top of this hill to create a flat work area for drilling and ancillary uses. What is contemplated is moving significant amounts of dirt over a 22.5-acre (west connection) site and blasting it to reshape this hillside. There is a danger that in reconfiguring the hillside that such hill will not be stable and flow down the hill as erosion or landslides. (Casscles)

Response 132: The excavation and backfill methods planned to prepare the site for construction were selected to ensure slope stability and would employ a combination of mechanical and natural stabilization techniques.

Comment 133: Section 2.8, Terrestrial Resources, Ecological Communities (page 2.8-61): This section mentions the restoration of vegetative communities on the (west connection) site would further minimize the potential for impacts. Ecological communities noted on upland portions of site (not including cultivated or wetlands) include Successional Southern Hardwoods, Successional Northern Hardwoods, and Appalachian Oak Hickory Forest. The landscape plan does not propose planting to restore any of these communities. The DEIS claims vegetative communities on site will be restored. Should the landscape plan show plants commonly found in these communities, and in densities commonly found in immature forest communities to restore these plant communities? For the landscape to be restored, a management plan to monitor and remove invasive trees and shrubs must be in place. The new landscape will be sun drenched, creating desirable growing conditions for most invasive plants. Most invasive plants found on the site do not grow in shaded areas of existing forests but in sunnier edges and open spaces within the forests. In efforts to restore the ecological community, the management plan should also consider potential control of damage to plant materials as a result of deer browsing (installation of tubes on saplings, fencing areas while plants grow, installing trees higher than deer browse line with tubes to prevent damage from deer rubbing their antlers, etc.). This section also mentions the installation of trees to provide summer roosting habitat for Indiana bat habitat but should compare the number of trees removed vs. the number of trees proposed. (Arent)

Further, the DEIS is coy about the project sponsor's level of interest in quickly reforesting and planting of grasses, shrubs, and trees this area to stabilize the newly constructed hillside and minimize erosion that can contribute to the hill sliding down the hill. It is very important that the maximum number of trees and shrubs be retained during this 10-year project. Further, that if land is disturbed, that new grasses, bushes and trees be immediately planted to help retain soils and minimize erosion. (Casscles)

Response 133: DEP has worked with the Town of Newburgh Planning Board consultants to develop an interim (Phase 1) landscape plan that would stabilize the manufactured slope and screen the site from views along Route 9W. A significant number of trees and shrubs would be added to the site during the Phase 1: Shaft Preparation construction period to address the concerns of the Town of Newburgh Planning Board that landscaping not be limited to a site restoration phase at the end of construction.

Comment 134: DEP has determined that Indiana bats (*Myotis sodalis*) could potentially utilize some of the trees in both the east and west connection sites as summer roosting trees. As such, DEP has committed to a tree-clearing program that will be conducted seasonally (i.e., October 1 to March 1) to avoid impacts to roosting Indiana bats. This approach is acceptable to the USFWS. (Stilwell)

Response 134: Comment noted. Both tree clearing scenarios evaluated in the DEIS avoid impacts to roosting Indiana bats by removing potential Indiana bat roosting trees between October 1 and March 31.

Comment 135: The Indiana bat is a New York State and federally listed endangered mammal species. Both the east and west connection sites may contain suitable Indiana bat habitat (roosting and foraging). In order to prevent potential impacts to the Indiana bat, all necessary tree removal (trees over 4 inches in diameter at breast height [DBH]) should be performed between October 1 and March 31of any year (both east and west connection sites). Although this is mentioned in the DEIS, this time restriction should be incorporated into project plans. In addition, nighttime lighting should be minimized at both construction sites to the maximum practicable extent.

NYSDEC recommends that any proposed planting of trees at either location (east and west connection sites), use native species known to be preferred by the Indiana bat, such as shagbark hickory.

Page 2.8-4 indicates that an Indiana bat tree survey has been performed. NYSDEC would appreciate receiving a copy of the report for review by NYSDEC staff. Depending upon results of our review of the report, additional comments may be forthcoming. (Ballard)

Response 135: DEP has committed to clearing potential roost trees seasonally between October 1 to March 31 to avoid impacts to roosting Indiana bats. Contract drawings being prepared for both connection sites will clearly specify these dates for tree clearing. On the west connection site, areas not occupied by the internal roadway and the shaft would be restored with a combination of planting meadow habitat, with shrubs and some trees. Proposed tree species include red maple, silver maple, shagbark hickory, eastern red cedar, tulip tree, swamp white oak, and eastern white pine. On the east connection site, areas to be replanted would include steep meadow, reforested areas, and lawn areas to allow for future access. Proposed tree species include red maple and shagbark hickory. The reports summarizing the results of the potential Indiana bat summer roosting habitat surveys have been provided to NYSDEC and USFWS.

Comment 136: While tree-cutting from October to March avoids direct impacts to bats during summer roosting periods, it does not address the issue of long-term habitat loss. Bats provide important functions, such as pollination and insect control. Trees on the project site (west connection site) that are suitable habitat for the endangered Indiana bat should be preserved as White Nose Syndrome is decimating bat populations throughout the Northeast. (Tignanelli)

Response 136: Few trees (approximately 90 of 1,300) within the west connection site are of the appropriate species, size, age, and condition to be suitable roost sites for Indiana bats, based on an already conservative assessment. Indiana bats have a strong preference for roosting in dead and decayed trees that are exposed to direct sunlight, of which the west connection site contains even fewer. Forested wetlands, streams, lakes, and ponds are among their favored foraging habitats, which the site lacks as well. As such, the west connection site is considered poor roosting and foraging habitat for Indiana bats, and therefore, we anticipate unlikely to have a significant impact on the Indiana bats habitat. Of the 90 potential roosting trees identified within the west connection site, only 54 would be within the area that would be cleared, which would not result in predicted significant adverse impacts on local Indiana bat populations. Clearing of potential roost trees at the west connection site during site preparation would only occur during October 1 through March 31, the clearing window recommended by the USFWS to avoid any potential for direct effects to Indiana bats from tree removal when more than 10 miles from a hibernaculum.

Comment 137: The bald eagle is a New York State and federally listed endangered species. NYSDEC is aware that the proposed route of the replacement RWBT tunnel is over ½ mile from known bald eagle nesting and roosting sites along the Hudson. Although this distance (½ mile) is greater than the threshold specified in the National Bald Eagle Management Plan (NBEMP), NYSDEC has concerns that noise level associated with proposed blasting may impact this species, especially as this is a long-term construction project (7½ to 8 years) and there is the possibility that eagle nests could be established after the start of the project, but before its completion. Additional information on blasting noise and potential impacts on the bald eagle should be developed and included in the FEIS. (Ballard)

Response 137: Section 2.8-3.3, “Probable Impacts of Project 1, Shaft and Bypass Tunnel Construction-West of Hudson,” and section 2.8-4.3, “Probable Impacts of Project 1, Shaft and Bypass Tunnel Construction-East of Hudson,” of the

DEIS evaluated the potential impacts to the state- and federally-listed bald eagle nesting and foraging activity due to the construction of Project 1 on the west and east connection sites, respectively. The assessment considered the construction activities that would occur on the construction sites and the buffers recommended in the U.S. Fish and Wildlife Service National Bald Eagle Management Guidelines to avoid disturbance to bald eagle nesting, foraging, and roosting. Overall, activities at both the west and east connection sites would be conducted at sufficient distance from bald eagle nest sites and foraging areas to be in compliance with the National Bald Eagle Management Guidelines.

At the west connection site, blasting may occur during grading for a 3- to 6-month period and then during the 22- to 25-month period in which shaft construction would occur. During the shaft construction period, blasting would occur one or two times per day. As presented in the USFWS Bald Eagle Management Guidelines, bald eagles generally nest near coastlines, rivers, large lakes, or streams that support an adequate food supply. “Nest sites typically include at least one perch with a clear view of the water where the eagles usually forage.” The closest suitable potential new nesting location to the west connection site would be near the Hudson River, about 1 mile from the site, well beyond the Bald Eagle Management Guidelines recommended 0.5-mile buffer distance to avoid disturbance of nesting activity by activities such as blasting. Therefore, intermittent blasting at the west connection site associated with site preparation activities, or regular subsurface blasting during the shaft construction activities, would not have the potential to affect any nests established subsequent to the start of construction of Project 1.

At the east connection site, one to two blasts would occur per day during the estimated 21-month period for construction of Shaft 6B. Any nests established on the west side of the river subsequent to the start of the project would be more than the 0.5 miles away from the Shaft 6B site, outside the buffer recommended to avoid nesting impacts due to blasting activities. Once blasting is initiated at the east connection site, it is anticipated to occur daily for an estimated 21- month period and would not constitute an intermittent activity. Therefore, there would be a limited potential for nests to be established at a location where nesting success would be adversely affected. DEP will coordinate with the USFWS and NYSDEC with respect to bald eagle nesting activity near the site prior to the start of blasting.

Comment 138: The Migratory Bird Treaty Act (MBTA) implements four treaties that provide for international protection of migratory birds. The MBTA

prohibits taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Department of the Interior. DEP is considering two vegetation clearing scenarios. The first scenario limits all clearing and grading to the October 1 to March 31 time frame, with all tree clearing concluding prior to March 15, if possible. The second scenario restricts clearing of potential Indiana bat roosting trees to the October 1 through March 31 period, with clearing of all other vegetation between April 1 and September 30. The first scenario minimizes impacts to nesting birds and herpetofauna that may be present on either of the connection sites by avoiding clearing activities during nesting and aestivation periods. Since the USFWS is responsible for migratory birds under the MBTA, we recommend restricting all vegetation clearing to the October 1 through March 31 time frame. (Stilwell)

Response 138: Comment noted. To minimize the potential for adverse impacts to breeding migratory bird species from tree clearing on the west connection site, during the tree clearing of potential Indiana bat summer roosting trees, additional tree clearing would occur in three areas within the area of disturbance. During breeding bird surveys conducted at the west connection site, these three areas appeared to have the greatest breeding activity by migratory species, such as orchard orioles, prairie warbler, rose-breasted grosbeak, and blue-winged warbler. Removal of vegetation in these areas prior to the breeding season would reduce the potential for nest failure for these species.

Comment 139: The west connection site is situated in what appears to be approximately 200 acres of (somewhat) contiguous forest, and is also very near a much larger area of forest to the east. Forested areas of this size can have benefits as a "stepping stone" forest and offer habitat to less sensitive forest-interior breeding birds. During the 2000-2005 Breeding Bird Atlas, a number of forest species considered by Audubon to be "special conservation responsibility"[16] in the Hudson Valley were documented. These *special conservation responsibility* species include the Eastern wood-pewee, veery, wood thrush, and American redstart. It is possible (but not verified at this time), that these species use the forest tract in which the west connection site is located. Disturbance or clearing on the west connection site would fragment this parcel and may decrease habitat

[16] The Breeding Bird Atlas is available on the Audubon website at: http://ny.audubon.org/BirdSci/HudsonRiverValleyConservation.html

suitability. The FEIS should include an expanded narrative which discusses potential impacts from forest fragmentation. (Ballard)

Response 139: As indicated on Figure 2.8-10, approximately 19 acres of the west connection site would be disturbed as a result of site preparation activities, primarily in the central and eastern portions of the site occupied by the early successional forest (approximately 12 of 17 acres) and old field habitat (approximately 5 of 6 acres), and terrestrial cultural community (approximately 1.5 of 2 acres) and would avoid the majority of the Appalachian oak-hickory forest (approximately 1 of 6 acres). Therefore, the existing Appalachian oak-hickory forest would not be fragmented further and would continue to provide habitat to forest bird species not dependent on forest interior habitat.

As discussed on page 2.8-24 of the DEIS, due to the fragmented nature of the woodland on the west connection site, the woodlands on the site represent marginal nesting habitat for most woodland birds, particularly forest interior species. This is reflected by the low number of woodland birds observed breeding at the site during summer field surveys (see Appendix 2.8-2, Table 2). Page 2.8-24 of the DEIS identifies Eastern wood-pewee and wood thrush as occurring on the west connection site and both were observed during the breeding period. Appendix 2.8-2, Table 2, of the DEIS also lists eastern wood peewee and wood thrush as being listed on the Breeding Bird Atlas and observed on the site. As indicated in Appendix 2.8-2, Table 2, veery were not listed on the Breeding Bird Atlas block covering the west connection site. This same table does indicate American redstart as occurring on the Breeding Bird Atlas Block, and having the potential to occur in the spring, summer and fall but were not observed on the west connection site.

Comment 140: The west connection site is noted to contain two vernal pools, the “western wetland” and the “central wetland” (page 2.8-17 and Figure 2.8-6). While NYSDEC has no specific jurisdiction over such vernal pools, these seasonally wet depressions support the breeding of wood frogs and a variety of woodland salamanders, including the spotted salamander, blue-spotted salamander, and Jefferson salamander. These salamander species are grouped as “mole salamanders” and are listed in the state as “species of special concern,” an indication that these species exhibit the greatest conservation need. In addition, it is possible the forest on the western site is part of these species’ upland breeding habitat. Assessment of these important habitat resources should be thoroughly examined in the FEIS. If possible, design of the west connection site should avoid construction

related impacts to vernal pools and upland breeding habitats to the maximum practicable extent. (Ballard)

Response 140: As discussed on page 2.8-26 of the DEIS, the central wetland was observed to support wood frog breeding. Two state species of special concern, Jefferson salamander and marbled salamander, two species of woodland and vernal pool salamanders, have the potential to use the central wetland for breeding on the basis of available habitat and are discussed on page 2.8-33 of the DEIS. Neither was observed during the reconnaissance surveys of the site and the Natural Heritage Program database has no records for the west connection site. The Jefferson salamander is documented as occurring within the NYSDEC Herp Atlas Project block that includes the west connection site. The spotted salamander was not determined to have the potential to occur on the west connection site on the basis of existing habitat nor does it occur on the Herp Atlas Project block that includes the site. Similarly, the blue spotted salamander was not determined to have the potential to occur within the project site and does not occur on the Herp Atlas Project block that includes the site. Pages 2.8-71 and 72 of the DEIS provide a detailed evaluation of the potential impacts to Jefferson salamander and marbled salamander under the two clearing scenarios due to the unavoidable loss of the central wetland area.

For both species, clearing and grading activities would result in the unavoidable loss of the central wetland as breeding habitat, with the second clearing scenario also having the potential to result in loss of individuals should clearing and grading occur during the breeding season for these two species. The majority of the mature woodland areas likely to be used by Jefferson salamanders outside the breeding period would be outside the area to be cleared. DEP would implement measures following clearing such as maintaining silt fencing around the area of disturbance to prevent individuals from attempting to enter the disturbed area at the onset of the following breeding season. As described on page 2.8-71 of the DEIS, the western wetland would still have the potential to be used as breeding habitat by woodland vernal pool amphibian species. Additionally, page 2.8-63 of the DEIS assesses the potential impacts to other amphibians due to the loss of the central wetland.

DEP acknowledges the value of vernal pool habitats as breeding for certain frog and salamander species. However, as presented on page 2.8-58 of the DEIS, the loss of this wetland is unavoidable as it is located in the area to be cleared for shaft construction and ancillary elements. However, DEP has developed the site plan for the west connection site such that the western wetland would not be disturbed through clearing an

grading activities, thereby maintaining this vernal pool as potential breeding habitat for amphibians.

Comment 141: Section 2.8, Terrestrial Resources, Ecological Communities (page 2.8-67): This section mentions that the succession of meadow habitat to old field would further restore successional woodland habitat lost as a result of Project 1. Ecological succession of field to ecologically desired plant communities depends upon adequate soil depths and soil quality, monitoring and reducing the growth of invasive plants, and controlling or reducing deer browsing. Landscape restoration and ecological succession to the Appalachian Oak Hickory forest can be encouraged by planting species found in this forest along with quicker-growing species found in old field successional forests. The quicker trees grow and shade the ground, the faster the threat to the ecological community by invasive plants and deer is reduced. (Arent)

Section 2.8: Natural Resources and Water Resources (page 2.8-105): If topsoil and vegetation communities cannot be restored, loss of these communities would be an impact that cannot be mitigated. (Arent)

Response 141: Comment noted. As discussed in section 2.8-3.3, "Probable Impacts of Project 1, Shaft and Bypass Tunnel Construction—West of Hudson," vegetation planted as part of the restoration plan would include only native indigenous species to this area of New York. As currently envisioned, at the west connection site a portion of the interior roadway would be retained to provide future access to Shaft 5B, should it be necessary. The shaft itself would be capped then covered with a concrete cover and soil. In the areas not occupied by the internal roadway and the shaft the site would be restored with a combination of planting meadow habitat, with shrubs and some trees. Proposed tree species include red maple, silver maple, shagbark hickory, eastern red cedar, tuliptree, swamp white oak and eastern white pine.

Comment 142: Section 2.8-66 regarding light pollution states that multiple sources of artificial light exist in the area now and, because of that, an increase in lighting during construction will have minimal impacts on local wildlife. However, the fact that 29 acres of trees and vegetation are to be removed from the west connection site will likely increase light pollution from current sources, such as street lighting on Route 9W as well as headlights from vehicles traveling on Route 9W. Therefore, it appears that light pollution from current sources will intensify as a result of the project and the impacts will not be "minimal." (Tignanelli)

Response 142: The vast majority of the vegetation that would be cleared at the west connection site is in an early successional stage. At present, this low-lying vegetation is unlikely to block much of the existing artificial light sources on Route 9W from penetrating the mature woodland that is on the western extent of the parcel and outside of the limit of disturbance. Clearing this vegetation would not markedly intensify the effects of current artificial light sources on wildlife inhabiting the western woodland. Similarly, as explained on page 2.8-66 of the DEIS, construction lighting would be designed to minimize the spill of light outside of the areas of active construction and therefore minimize any light pollution effects on wildlife in adjacent areas. Following the grading of the site, the majority of the woodland and other habitats remaining beyond the limit of disturbance would be at a higher elevation than the construction area, and thus construction lighting directed downwards would not contribute light pollution to these areas.

Comment 143: Section 2.8, Roseton Stream Study Site and Dewatering Pipeline Route (page 2.8-73): Restoration of landscape including soil remediation and restoration of vegetation should be discussed in this section. (Arent)

Response 143: Subsequent to the publication of the DEIS, DEP advanced the design of the dewatering pipeline that would be constructed from the west connection site to the Hudson River, selecting one potential dewatering pipeline route (Option 2 in the DEIS) as the only route further evaluated for the FEIS. Within this route, the dewatering pipeline would be sited to minimize stream and wetland crossings, including along the stream within the Roseton stream study site, with the exception of a small area that would be disturbed for the construction of the outfall. Sufficient room is available to avoid the need for constructing the pipeline through the stream or wetland areas. The pipeline will cross these features using jack and bore or other trenchless techniques in order to avoid impact. Therefore, revegetation needs would be minimal and would be expected to comprise standard stabilization measures with seed (e.g., perennial ryegrass or other approved seed) and mulching in accordance with the soil erosion and sediment control plan developed for the project.

Comment 144: The DEIS needs to consider all direct and indirect effects of the proposed in-water work necessary for the proposed program on sturgeon in the Hudson River. Construction of outfalls for the proposed dewatering pipeline and the non-potable water supply will affect shoreline and benthic community of the river and, therefore, may directly or indirectly affect shortnose sturgeon via the alteration of the physical environment. The

DEIS does not sufficiently address the alteration of the benthic community (e.g., amount removed) or turbidity plumes produced by the construction activities (e.g., concentration levels, distance the plume extends, and period of time plume remains in the area) and the associated effects on shortnose sturgeon.

As the installation of a cofferdam will create a temporary increase in suspended sediment and, depending on the method of installation (e.g., pile driving), may create elevated levels of underwater noise, an analysis of the direct and indirect effects on shortnose sturgeon of cofferdam installation is also needed. (Colligan)

Response 144: Subsequent to the publication of the DEIS, DEP determined that no outfall would be constructed on the Hudson River on the west side of the river, nor would an intake structure be required. Therefore, the construction of Project 1 would not result in in-water construction activities within the Hudson River. The dewatering pipeline for the west connection site would require the construction of an outfall within the tidal portion (Use Class A) of the stream within the Roseton stream study site. As presented on pages 2.8-37 and 2.8-38 of the DEIS, the tidal portion of this stream has a mean tide range of approximately 3 feet (NOAA Tidal Benchmark Data Sheet for Haverstraw Bay, NY, Station ID: 8518924). The bottom substrate of the tidal portion of the stream is muddy. The banks generally consist of emergent wetland vegetation and forest; however, significant portions of the banks in this section are armored with wooden cribbing or abandoned wooden barge hulls. As presented on pages 2.8-48 and 2.8-49 of the DEIS, sampling within the tidal portion of the stream yielded few benthic macroinvertabrates, and no fish until the late fall sampling event in November 2011 when three bluegill, eight banded killifish, one pumpkinseed, and one darter were collected. The construction of this outfall would result in a minimal loss of habitat below mean high water (MHW). It is anticipated that approximately 17 cubic yards (CY) of material would be excavated below MHW and be replaced with an equal volume of riprap within a 362 square-foot (0.008-acre) area. The excavated area would be outside the stream channel. The outfall headwall structure would be located above MHW. Prior to the start of outfall construction, a cofferdam structure (e.g., sand bags, riprap covered in filter cloth, a manufactured portable dam cofferdam structure such as Portadam, or sheet piling) would be installed at low tide to minimize the resuspension of bottom sediment resulting from outfall construction. Upon completion of the outfall structure, the cofferdam would be removed. Construction of the outfall would be anticipated to take about two weeks. Therefore, the construction of the outfall would not result in significant

adverse impacts to water quality or aquatic biota of the stream within the Roseton stream study site or of the Hudson River. On the basis of the habitat conditions observed within the tidal portion of the stream and the results of the benthic macroinvertebrate and fish sampling, the tidal portion of the stream where the outfall would be located would not be considered suitable habitat for Atlantic or shortnose sturgeon. Therefore, construction of the outfall would not have the potential to adversely affect either of these species.

Comment 145: The March 3, 2011, response letter from the USFWS to DEP states, "We also understand that no federal permits or funding will be needed for these investigations."

It is not clear if USFWS was led to believe that no federal permits or funding were needed for this project. It was stated at the January 23, 2012, Newburgh public hearing that federal permits and funding are involved. This discrepancy should be addressed. (Tignanelli)

Response 145: The March 3, 2011, response letter to USFWS was related to an early testing program, which required no federal permits or had any federal funding. For the DEIS, DEP coordinated with the USFWS throughout the environmental review process with respect to the status of federal permits and funding.

Comment 146: The DEIS discusses the dewatering and disposal system (page 1.0-14). However, it does not give sufficient information on the estimated volume of water coming from this site or if the stream is capable of accepting all of the construction water that will be discharged there. This is not a very large stream, especially in the summer, so significantly increasing stream flow will affect the ecosystem of the stream and may adversely affect the stream as it enters into the Old Mill House historic site and dam.

I am very concerned about the silting of the Old Mill House Creek, which runs that through the proposed construction site (west connection site), and the adverse effects it will have on stream wildlife, possibilities of flooding, and the degradation of the Old Mill House national historic site, Old Mill Pond, and dam. It should be an important consideration that construction activity at the proposed construction site will not unnecessarily add dirt, silt, or other debris to the Old Mill House Creek. This is important, first, for the ecology of the creek and stream shed in the area. Second, increased silt from the construction site would then be transported to the Old Mill Pond and may silt up that pond and fill it in. Strenuous mitigation measures should be taken to minimize foreign material, silt, dirt, or construction material from entering Old Mill House

Creek and Old Mill Pond. Retaining vegetation along the stream and other measures could be taken to address this issue. (Casscles)

Old Mill Creek is a tributary that runs independently from the convergence of three creeks located near your identified project drilling and staging areas. Under normal circumstances produced only by natural erosion and rain events, the creek collects a measurable amount of silt and debris that we expend to control or remove within state environmental guidelines, each year. Your proposed project does not sufficiently define how the enormous amount of silt spill-off and disturbed areas will be controlled so that they do not come downstream to our property to clog our creek, pond, dam, and the historic Dard Hunter Paper Mill waterwheel. (Abrahams)

Response 146: Section 2.8, "Natural Resources and Water Resources," of the DEIS presented an assessment of potential adverse impacts to the Class C stream on the west connection site from the discharge of treated groundwater recovered during dewatering and stormwater runoff. Stormwater Best Management Practices implemented as part of the Stormwater Pollution Prevention Plan would regulate the quality and rate at which stormwater is discharged from the west connection site through a new outfall to the Class C stream. The Stormwater Pollution Prevention Plan includes a stormwater management basin and erosion and sediment control measures to minimize the discharge of sediment to the stream. Groundwater recovered during dewatering of the shaft would be sent to an on-site treatment system to remove suspended solids and any other contaminants in accordance with the NYSDEC SPDES permitting requirements for the project. With the implementation of measures specified by the NYSDEC SPDES requirements, the discharge of stormwater and recovered groundwater would not result in water quality conditions within the Class C stream that fail to meet the Class C standards, or be expected to lead to increased flooding downstream during storm events. Section 2.14-3.3, "Probable Impacts of Project 1, Shaft and Bypass Tunnel Construction – West of Hudson," provides a summary of the erosion and sediment controls, stormwater management measures, and vegetative stabilization measures that would be employed to reduce impacts from the discharge of stormwater. The stormwater management practice was designed to detain the stormwater runoff peak flows to match pre-developed conditions, thus minimizing the potential for the discharges from the west connection site to result in increased flooding downstream.

Comment 147: The DEIS should also consider the potential for elevated levels of underwater noise to be produced during the boring of the bypass tunnel.

The generated noise and vibration from the tunnel boring machine (TBM) produces sound waves that will transverse the sediment to the river bottom above the TBM. As such, estimates of underwater noise levels that may be produced during boring operations are needed. Based on these estimates, an analysis of the effects of these noise levels on shortnose sturgeon will be needed. (Colligan)

Response 147: No measurable noise increases velocities would be expected at any location in the sediment at the river bottom, based on the geology and the depth of the tunnel below the Hudson River and the expected dissipation from the source. The peak vibration levels produced by the TBM at the riverbed level would be extremely small considering the tunnel's depth and would not be expected to be detectable by fish above background levels. Empirical TBM vibration data in relation to distance from the TBM were reviewed. The bypass tunnel would be at least 500 feet below the riverbed. Both the bedrock and the river sediments will attenuate the vibration. Based on empirical data, peak particle velocities with the zone of the riverbed directly above the TBM head would be in the range of 1/300 to 1/100 inches per seconds. These levels would not be detectable by seismological equipment. Therefore, sound waves or vibrations from operating the TBM are not expected to result in significant adverse impacts to Atlantic and shortnose sturgeon, especially given existing noise levels in the river from marine and waterfront activities.

Comment 148: There is no question that Project 1, as described in the DEIS, will result in some unavoidable adverse impacts to natural resources, such as the elimination of a trout fishery[17] and the permanent disturbance of a wetland and its buffer.[18] However, the DEIS tends to minimize or even dismiss the significance of certain impacts, and therefore concludes that mitigation appears not to be warranted, rather than directly addressing adverse impacts and proposing mitigation that is practicable.

One example is the limited discussion of issues relating to wetland impacts and mitigation. Although the existing 20.1-acre east connection site is already largely disturbed with six acres of impervious surfaces and no on-site aquatic resources,[19] the proposed 32.9-acre west connection site is largely undeveloped with 23 acres of early successional and mature

[17] DEIS, at 4.3-6.

[18] *See id.*, Fig. 2.1-7.

[19] *See id.*, at 2.8-83.

forests[20] and three wetlands. The DEIS proposes 19 acres of disturbance on the west connection site[21] and identifies an eastern, western and central wetland on that site.[22] DEP claims that the central wetland is an isolated wetland,[23] and proposes to pave it over with a parking lot.[24] This is inconsistent with another statement in the DEIS that this wetland ultimately drains to the on-site DEC Class C stream.[25] Typically, isolated wetlands are not hydrologically connected to perennial streams. This discrepancy must be resolved in the FEIS.

The eastern and western wetlands also drain to the Class C stream. The western and central wetlands are groundwater-charged and are not in the vicinity of the surface expressions that DEP has identified as originating from the tunnel leaks.[26] This means that the western and central wetlands are providing headwater flows to the stream under existing conditions. "Scientific evidence clearly shows that healthy headwaters—tributary streams, intermittent streams, and spring seeps—are essential to the health of stream and river ecosystems.… Even watersheds as small as 5.5 acres can support headwaters of perennial and intermittent streams."[27] Therefore, disturbance of the western and central wetlands or their buffers during Project 1 may result in impacts to downstream water quality that will require mitigation.

The DEIS further asserts that the eastern and western wetlands are outside the proposed area of disturbance, although it appears that their 100-foot buffers may be within that area. DEIS Figures 2.1-3, 2.1-7, and 2.1-10 show a water pump station, expanded dewatering treatment plant, and a grout batching plant that appear to be encroaching into the eastern wetland buffer. In addition, the outfall for the proposed stormwater basin appears to traverse the northeast portion of the eastern wetland and its buffer. Disturbance of a wetland's buffer area adversely impacts the

[20] *See id.*, at 2.8-21.

[21] *See id.*, at 2.8-59.

[22] *See id.*, Fig. 2.8-6.

[23] *See id.*, at 2.8-59.

[24] *See id.*, Fig. 2.1-7.

[25] *See id.*, at 2.8-17.

[26] *See id.*, Fig. 2.8-15.

[27] STROUD WATER RESEARCH CENTER, PROTECTING HEADWATERS: THE SCIENTIFIC BASIS FOR SAFEGUARDING STREAM AND RIVER ECOSYSTEMS (2008), at 2, available at: http://www.stroudcenter.org/research/PDF/ProtectingHeadwaters.pdf .

wetland that the buffer functions to protect. Siting of these facilities within wetlands or their buffers should be avoided to protect the water quality functions of these resources. (Hudson/Wegner)

Rather than directly addressing some of those (unavoidable adverse impacts) impacts and proposing mitigation where practicable or concede that mitigation is not practicable, the DEIS tends to minimize or even dismiss the significance of certain impacts, and therefore concludes that mitigation appears not to be warranted.

One example is the limited discussion of issues relating to wetland impacts and mitigation. The DEIS identifies an eastern and western and central wetland, which is in the Town of Newburgh, on the existing west connection site. DEP claims that the central wetland is an isolated wetland, and proposes to pave it over with a parking lot. Wonderful. This is inconsistent with another statement in the DEIS that this wetland ultimately drains to the on-site DEIS Class C stream. Typically isolated wetlands are not hydrologically connected to perennial streams. The eastern and western wetlands also drain to a Class C steam.

The western and central wetlands are ground water charged and are not in the vicinity of the surface expression DEP has identified as originally from the tunnel leaks. This means that the western and central wetlands are providing headwater flows to the stream under existing conditions. Disturbances of these wetlands and the buffers may result in significant impacts to downstream water quality, and the FEIS should evaluate those potential impacts and consider appropriate mitigation. (Wegner)

Response 148: As presented in the DEIS, the western wetland is not within the area that would be cleared and graded for Project 1 on the west connection site, and site plans for Project 1 have been developed to minimize potential impacts to this wetland. The central wetland is a depressional wetland that shows evidence of a groundwater discharge. This discharge from the central wetland travels downslope within the existing dirt access drive and dissipates in a wooded area before reaching the perennial stream (New York State Waters Index Number H-103-1-3 [subtribs of Lattintown Creek]). The USACE conducted a jurisdictional determination of this wetland and determined that it is an isolated, intrastate water, and therefore not regulated by Section 404 of the Clean Water Act. Similarly, the western wetland is also a small, depressional wetland receiving shallow groundwater flow but showing no perennial or intermittent connection to other waters of the United States. Therefore, it too was deemed unregulated by the USACE. The FEIS includes a copy of the USACE jurisdictional determination. It is also available at http://www.nan.usace.army.mil/business/buslinks/regulat/index.php?jurisd

et. The unavoidable loss of the central wetland area would not result in significant adverse impacts to the Class C stream that traverses the west connection site.

The central and western wetlands provide limited surface water contributions to the Class C stream as evidenced by the absence of a defined channel with bed or banks to convey flows from these wetlands to the stream. During dry weather periods in the growing and non-growing seasons, neither wetland exhibit flows that reached the stream, despite being perennially saturated or ponded from groundwater contributions. Therefore, surface runoff from the west connection site, not groundwater discharge from the central and western wetland, is the primary surface water contribution to the Class C stream. The western and central wetlands are also small, 2,600 square feet and 4,000 square feet, respectively, and would not provide substantial runoff storage capacity or residence time. Therefore, although these wetlands are located in the watershed of the Class C stream, they comprise a small portion of the approximately 2,250-acre watershed for the stream and there is little evidence that they provide maintenance of stream base flow during dry weather. While the unavoidable loss of the central wetland would be adverse and would result in the loss of a limited surface water contribution to the stream, it would not result in significant adverse impacts to stream flow

During and post-construction, the west connection site would continue to provide surface water runoff to the Class C stream following treatment of runoff with the proposed stormwater management measures.

DEP has developed the site plan to minimize the area of disturbance needed for the project activities that would take place at the site while at the same time providing a buffer area for both the western and eastern wetland to the greatest extent possible. Because of site constraints a portion of the area within 100 feet of the eastern wetland would be disturbed as a result of grading for the concrete/grout batching plant. During preparation of the FEIS, DEP developed and submitted to NYSDEC and the Town of Newburgh a SWPPP with erosion and sediment controls, stormwater management measures, and vegetative stabilization measures to minimize impacts to the eastern and western wetland due to land disturbing activities. The proposed activities in the areas adjacent to the eastern and western wetlands require clearing that would be unavoidable. Following disturbance the area within the buffer would be stabilized and revegetated in accordance with the SWPPP. Additional improvements would be implemented as part of site restoration at the completion of the proposed program. The outfall for the stormwater detention/management basin would be located outside the eastern wetland.

Comment 149: The DEIS concedes that Project 1 and Project 2B both have the potential to impact the Class C stream that traverses the west connection site, as well as the downstream riparian habitat in the Roseton stream study site, as a result of the proposed dewatering pipeline.[28] This stream is a tributary to the Hudson River, which also may be impacted as a result of the pipeline. In preparing the DEIS for Project 1, the lead agency must discuss environmental impacts of related actions.[29] Since DEP has identified potential impacts from both Project 1 and Project 2B on the Class C stream, the Hudson River and other natural resources, the cumulative impacts of both proposed projects must be addressed to the fullest extent possible in the DEIS for Project 1, *as well as* in the DEIS for Project 2B. (Hudson/Wegner)

Response 149: Section 2.8 of the DEIS presents a detailed evaluation of the potential impacts to the unnamed Use Class C stream within the west connection site, and to a second Use Class C stream within the Roseton stream study site due to the construction of the dewatering pipeline. Section 4 of the DEIS provides an assessment of the potential impacts to both streams as a result of Project 2B to the extent possible on the basis of the conceptual nature of Project 2B. Subsequent to the preparation of the DEIS, DEP advanced the design of the outfalls that would be constructed on the west connection site, the water main extension and dewatering pipeline that would be constructed along Route 9W, the dewatering pipeline that would be constructed along River Road, and the dewatering pipeline outfall that would be constructed within the tidal portion of the stream within the Roseton stream study site. DEP has committed to constructing all outfalls above the ordinary high water elevation and the streams would be crossed using trenchless construction methods to minimize the potential for adverse impacts to the stream.

The dewatering pipeline has been sited to minimize stream and wetland impacts. As presented in the response to Comment 150 the dewatering pipeline for the west connection site would require the construction of an outfall within the tidal portion (Use Class A) of the stream within the Roseton stream study site. The construction of this outfall would result in a minimal loss of habitat below mean high water (MHW). Prior to the start of outfall construction, a cofferdam structure (e.g., sand bags, riprap covered in filter cloth, a manufactured portable dam such as Portadam, or

[28] *See id.* at 2.8-2.

[29] 6 N.Y.C.R.R. § 617.3(g)(1)

sheet piling), would be installed at low tide to minimize the resuspension of bottom sediment resulting from outfall construction. DEP will design the force main outfall to minimize disturbance below Mean High Water (MHW). It is anticipated that approximately 17 cubic yards (CY) of material would be excavated below MHW and replaced with an equal volume of riprap within a 362 square-foot (SF) (0.008 acres) area. The excavated area would be outside the stream channel. The outfall headwall structure would be located above MHW. Upon completion of the outfall structure, the cofferdam would be removed. Construction of the outfall would be anticipated to take about two weeks. Therefore, the construction of the outfall would not result in significant adverse impacts to aquatic resources of the Hudson River.

Existing flows recorded within the Use Class C stream within the Roseton stream study site, upstream of the Use Class A tidal portion proposed for the location of the outfall, range from 0.3 to 4.8 million gallons per day (mgd). With the discharge of up to 3 mgd during bypass tunnel excavation, a total flow of up to 7.8 mgd could be discharged to the tidal portion of the stream. During the connection phase (Project 2B) the RWBT would be shut down and the base flow in the stream would be expected to be reduced to about 0.3 mgd (i.e., the flow recorded during previous periods of RWBT shutdown). Therefore, the combined flow to the tidal portion of the stream during the approximately 2-week tunnel unwatering period is expected to be approximately 10.3 mgd. DEP will design this outfall with dissipation structures that would, along with operational controls, prevent scouring of the bank within this tidal area, and minimize the potential for erosion of the stream bank or increases in suspended sediment within the tidal portion of the receiving stream.

Comment 150: There are Submerged Aquatic Vegetation (SAV) beds (*Vallisneria Americana*) along approximately half the east connection site's Hudson River shoreline. In addition, the southern end of the Anadromous Fish Connection Area associated with the mouth of Wappingers Creek is located approximately ½ mile north of the east connection site. While potential in-water impacts from construction were not identified in the DEIS, these Hudson River habitats should be noted in the FEIS and any potential impacts to these resources avoided to the maximum extent. (Ballard)

Response 150: Subsequent to the issuance of the DEIS, DEP determined that no outfall would be constructed nor would an intake structure be required in the Hudson River on the west side of the river. Therefore, the construction of Project 1 would not result in in-water construction activities within the

Hudson River that would have the potential to adversely affect SAV or the Anadromous Fish Connection Area at the mouth of Wappingers Creek. The construction of the proposed outfall on the tidal portion of the stream within the Roseton stream study site would not adversely affect SAV.

At the east connection site, treated discharge from the stormwater management system and groundwater dewatering treatment system would be discharged through the existing DEP outfall at the east connection site. The treated water that would be discharged through the outfall would meet the limitations specified in the SPDES permit authorizing the discharge and would not result in increased suspended sediment within the water column that would affect establishment of SAV within the portion of the river in the vicinity of the site. Additionally, as discussed in Section 2.8-4.3, "Probable Impacts of Project 1, Shaft and Bypass Tunnel Construction - East of Hudson, Aquatic Resources," of the DEIS, the discharge of up to 694 gpm (1 mgd) of treated groundwater recovered during the construction of the shaft and connector tunnel to the Hudson River through the existing DEP outfall would not be expected to result in significant adverse impacts to the Hudson River. Groundwater recovered during shaft and connector tunnel construction would be sent to the on-site treatment system at the east connection site to remove suspended solids and any other contaminants in accordance with the NYSDEC SPDES permitting requirements for Project 1. The discharge to the Hudson River would comprise an extremely small component of the flow within this segment of the Hudson River .With the implementation of measures specified by the NYSDEC SPDES requirements, the discharge of stormwater and recovered groundwater would not result in water quality conditions within the Hudson River that fail to meet the Class A standards and would not result in significant adverse impacts to aquatic resources of the Hudson River and would not have the potential to adversely affect any acceptable SAV habitats in the vicinity of the east connection site or the Anadromous Fish Connection Area at the mouth of Wappingers Creek located about ½ mile north of the east connection site.

Comment 151: The DEIS concludes that a viable brown trout fishery is supported in Segment 3 and the non-tidal reach of Segment 4 of the unnamed Class C stream that traverses the west connection site and ultimately drains to the Hudson River.[30] This fishery is sustained by cold-water expressions from the tunnel in the vicinity of the Roseton/Danskammer generating plant.

[30] *See id.*, at 2.8-50.

These expressions will cease when the bypass tunnel is connected to the RWBT. The DEIS proposes that the trout fishery will "be eliminated and replaced with a more temperate fish and benthic community characteristic of Hudson River tributaries within this portion of New York."[31] However, if the biodiversity of Segments 3 and 4 of the Class C stream is greater under existing conditions than it will be under future "temperate" conditions, DEP should propose a mitigation plan to restore or enhance stream habitat within other reaches of the Class C stream to compensate for the decreased biodiversity resulting from decommission of the replaced tunnel segment. (Hudson/Wegner)

Response 151: As presented on pages 2.8-48 and 2.8-49 of the DEIS, during the spring and summer fish sampling of Segments 3 and 4, only American eel and brown trout were collected from Segment 4 and only brown trout were collected from Segment 3.During the fall sampling event, American eel, brown trout and bluegill were collected from Segment 4, and only brown trout from Segment 3. On the basis of the fish sampling conducted in 2011, the existing biodiversity of the fish community in Segments 3 and 4 is low and would not be expected to be lower under the future "temperate" conditions. Potential impacts to Segments 3 and 4 would be evaluated in greater detail in the second EIS or a subsequent environmental review, as appropriate.

Comment 152: The DEIS asserts that the eastern and western wetlands are outside the proposed area of disturbance, although it appears from your maps that the 100-foot buffer zone is within that area. Disturbance of a wetlands buffer area adversely impacts the wetland that the buffer functions to protect. It also appears from Figures 2.1-7 and 2.1-10 that the outflow for the proposed stormwater basin traverses the northeast portion of the eastern wetland and its buffer. (Wegner)

Replacing even a small headwater wetland, the functions and values of which are unknown, with upland shrubs and trees is not an accepted practice to mitigate wetland losses. In fact, although the DEIS alludes to the potential development of wetland mitigation strategies in the second EIS for impacts to wetlands in the Roseton stream study site, no such strategies are provided for wetland mitigation on the west connection site in the current DEIS. (Wegner)

[31] *See id.*, at 4.3-6.

Response 152: Because of site constraints a portion of the area within 100 feet of the eastern and western wetlands would be disturbed due to grading for the concrete/grout batching plant. After completion of the DEIS and before issuance of the FEIS, DEP developed and submitted to NYSDEC and the Town of Newburgh a draft stormwater pollution prevention plan with erosion and sediment controls, stormwater management measures, and vegetative stabilization measures to minimize impacts to the eastern and western wetland due to land-disturbing activities within uplands adjacent to these wetlands. The western wetland would be preserved, and as improvement for the loss of the central wetland, a nuisance plant control program would be implemented at the western wetland to enhance its quality. Additionally, the landscaping plan under development would improve the buffer of remaining vegetation between this wetland and the 19-acre area of disturbance to enhance the vegetative screening. The proposed activities in the areas adjacent to the eastern and western wetlands require clearing that would be unavoidable. Following disturbance the area within the buffer would be stabilized and revegetated in accordance with the SWPPP. Additional improvements would be implemented as part of site restoration at the completion of the proposed program.

Comment 153: The DEIS provides no discussion of the function or values of on-site wetlands, but merely presents a survey of the existing wetland vegetation. The FEIS should provide an analysis of the functions and values of existing wetlands on the west connection site, and a compensatory wetland mitigation plan for the central wetland, and a revised site plan that eliminates disturbance in the eastern and western wetlands and their buffers. (Wegner)

Response 153: Section 2.8 of the DEIS presents a detailed discussion of the potential use of the central wetland as habitat for reptiles and amphibians and other wildlife and the potential effects to these wildlife due to the unavoidable loss of this wetland. The western wetland would be preserved, and as improvement for the loss of the central wetland, a nuisance plant control program would be implemented at the western wetland to enhance the quality of the western wetland. The central wetland is a depressional wetland that shows evidence of a groundwater discharge. This discharge from the central wetland travels downslope within the existing dirt access drive and dissipates in a wooded area before reaching the perennial stream (New York State Waters Index Number H-103-1-3 (subtribs of Lattintown Creek)). After the issuance of the DEIS, the USACE conducted a jurisdictional determination of this wetland and determined that it is an isolated, intrastate water and therefore not regulated by Section 404 of the

Clean Water Act. The FEIS includes a copy of the USACE jurisdictional determination in Appendix 2.8-4. It is also available at http://www.nan.usace.army.mil/business/buslinks/regulat/index.php?jurisdet.

The central wetland provides limited surface water contributions to the Class C stream within the west connection site, as evidenced by the absence of a defined channel with bed or banks to convey flows from these wetlands to the stream. During dry weather periods in the growing and non-growing seasons, neither wetland exhibit flows that reached the stream, despite being perennially saturated or ponded from groundwater contributions. Therefore, surface runoff from the west connection site, not groundwater discharge from the central and western wetland, is the primary surface water contribution to the Class C stream. Given the lack of surface connection the central wetland provides limited contribution to the baseflow of the Class C stream within the west connection site, and its loss would not result in significant adverse impacts to stream flow.

Comment 154: The DEIS minimizes the threat to resident and business groundwater supplies and quality. It does not accurately reflect the high risks this project poses to the drinking water supplies. The DEIS should provide for contingency plans to supply residents whose water supplies may very well be compromised. Blasting and quarrying for the Roseton power plant in the 1970s lead to increased cloudiness of drinking water and loss of water flow for many residents of Parr Estates, approximately one-third of a mile from the blasting site. If blasting is done to create the shaft and bore the tunnel, will this affect groundwater supplies for local residents? Will a bond be posted or standards established prior to construction to protect the reliability of groundwater for residential and commercial use?

The DEIS maintains that there is little or no risk to groundwater supplies due to the blasting or drilling activities of the project. However, on page 2.8-14, the DEIS states that this area is a poor aquifer source due to low yields, even for private use. Further, on page 2.8-58, that the project would have the potential to modify ground water flow patterns. Further, that it may increase cloudiness of water. Since this area, by the admission of the DEIS, is a poor aquifer to begin with, even a small adverse impact to the aquifer could severely affect groundwater supplies for residential and business use. The DEIS should have mitigation measures articulated to assist those homeowners and businesses whose groundwater supplies have been compromised. (Casscles)

The DEIS states that "[c]onstruction of the shaft and bypass tunnel would have the potential to modify groundwater flow pattern in the immediate

vicinity of these structures, groundwater would be expected to flow around them [*sic*]. Any temporary increases in cloudiness or turbidity in wells within the vicinity of the west connection site attributed to blasting would be temporary and would not adversely affect use of groundwater from these wells."[32] Given the applicability of turbidity as an aesthetic water quality parameter, mitigation of impacts to residential drinking water wells is warranted even for temporary increases that result from construction activities when turbidity reaches or exceeds the visible threshold of 5 NTU. Of greater concern is the potential for bacterial contamination of private drinking water supplies as is occurring when leaks from the RWBT modify groundwater flow patterns at the Wawarsing crossing. DEP should notify area homeowners of the potential impacts of temporary increases in turbidity and offer to supply bottled water to those affected. In addition, DEP should monitor private wells for contamination when turbidity is present and propose mitigation when any contaminant threshold for human health is exceeded. (Hudson/Wegner)

Most of the houses near the opening site on Route 9W are on well water. Our water level table is high. Is it possible that the leak went into our water level table? If our wells go dry, because of DEP fixing the leak, who pays for us redrilling for a new well? (R. Hughes)

lf underground springs or aquifers are struck affecting my well' s water table, what recourse do I have? Will my water access be restored by those causing the loss? Will those responsible drill a new well for me, or perhaps drill my well deeper? Please explain if you will be accountable for any detriment to nearby residential water wells. If you are not currently planning responsibi1ity for damages, I do seek DEP to mandate this responsibility. Preparations for collateral well failures should include a list of available home well drillers as well as possible needs for tanker trucks able to deliver pure water. (Plimley)

If the construction of the new (east connection site) shaft impacts the aquifer in the area resulting in a loss of water for the local residents, will DEP provide a temporary water supply and reimbursement for cost to drill deeper wells if necessary? Also, if water quality is reduced during construction, will DEP provide water filtration of a substitute water supply, if necessary. (Flower)

[32] *See id.*, at 2.8-58.

I'm rather surprised that the EIS discusses no modeling of effects to the aquifer, and I would urge that that is an important consideration. (C. Smart)

I live up on a hill up off of Lockwood. And I'm concerned about with the shaft going in, what's going to happen with the wells up there? It just seems like it's an awfully big project. (W. Bell)

What happens with the wells that are up in that area? I mean what plan do you have if something does happen, if they do lose water? There's no town water up in that area at all. What plan do you have in place if that does go like that? (Pelella)

My concerns are about my well also. I'm at 5483 Route 9W, which is approximately seven doors down from your property. (R. Hughes)

The conclusory statement on page 2.8-95 under Groundwater ("Removal of groundwater … would not be expected to adversely affect groundwater … supply within the vicinity of the east connection site.") cannot be accepted. The FEIS must include a hydrogeological study, including drawdown cones, to establish that nearby wells will not be affected by dewatering Shaft 6B. The FEIS must also include mitigation (e.g., well improvements or alternate water supply) in the event that nearby wells are affected.

The discussion on groundwater must be clarified, and a SWPPP must be prepared accordingly, to describe what water will be discharged through the current DEP outfall (as described here, apparently only dewatering water, but that water has a large potential for contamination, and elsewhere as both dewatering discharge and unwatering discharge) and what water will be discharged through the stormwater system that appears to be separate from the DEP outfall connected to Shaft 6. All pipe capacities and projected flows should be calculated. The DEC SPDES permit requirements for the existing DEP discharge should be provided and the FEIS must show how those standards will be met during construction. (Gray)

Response 154: Shafts are constructed in 100-foot segments. During this excavation, the rock is removed by blast and the walls of the shaft are lined with concrete in 100-foot segments. This lining is not allowed to leak at a rate of more than 3 gallons per minute (gpm). Any time flows of more than 20 gpm are encountered, even temporarily, it must be immediately stopped by using grouting as it is not possible to continue construction. As noted in Chapter 1, "Program Description", DEP will also require a well monitoring program.

Once the shaft is complete, construction specifications require leakage to be controlled by placement of a concrete lining to a total rate that is less than 7 gpm. To place this into context, a 5 gpm flow of water from the aquifer is roughly the equivalent of one household's average daily use, and therefore, is not anticipated to impact nearby local wells.

Subsequent to the issuance of the DEIS, draft SWPPPs for both connection sites were prepared in accordance with the NYSSMDM. After the FEIS is issued, revised SWPPPs—which are currently being prepared, and upon which the FEIS conclusions are based—will be issued to address comments from the towns on the draft SWPPPs.

Comment 155: The cursory references on page 2.8-95 regarding chemical products should be expanded, especially since the DEIS has already shown that NYSDEC chemical bulk storage registration will be required. Spill response and groundwater are areas of concern. Also, the FEIS should describe how any spill (chemical, fuel, etc.) will be kept separate from the nearby Hudson River. The FEIS should address spills within Shaft 6B during its construction. (Gray)

Response 155: The comment refers to brief text included in Section 2.8, "Natural Resources." A more detailed discussion on likely chemicals required, the handling of such, and response to spills was included in Section 2.9, "Hazardous Materials."

Comment 156: The FEIS must provide more backup and justification for the statement on page 2.8-96 that the project water discharges would not (and should say will not) adversely impact the Hudson River. (Gray)

Response 156: As presented in the DEIS, a discharge of up to 694 gallons per minute (~1 mgd) of treated groundwater would be recovered during the construction of the shaft and connector tunnel to the Hudson River through the existing DEP outfall and would not be expected to result in significant adverse impacts to the Hudson River. Groundwater recovered during shaft and connector tunnel construction would treated and discharged in accordance with the NYSDEC SPDES permitting requirements for Project 1, which would be established by NYSDEC to minimize adverse impacts to water quality of the Hudson River. Additionally, the 1 mgd (1.5 cubic feet per second [cfs]) discharge to the Hudson River would comprise an extremely small component of the flow within this segment of the Hudson River and would not have the potential to adversely affect water quality. Maximum

flood and ebb flows reported within this portion of the Hudson River by USGS (de Vries and Weiss 2001)[33] were 200,000 and 193,000 cfs, respectively. The discharge to the Hudson River through the existing outfall on the east connection site would be expected to mix with the Hudson River water within the vicinity of the outfalls and would not be expected to result in significant adverse impacts on water quality or aquatic biota.

Comment 157: The conclusions in the last two paragraphs on page 2.8-108 should be revised as needed to match resolution of analogous comments above, and correctly restated in the FEIS. (Gray)

Response 157: No additional changes in conclusions for Section 2.8 were required for the FEIS. As further described in the FEIS, the discharge of stormwater and treated groundwater recovered during dewatering to the Hudson River through the existing DEP outfall in accordance with NYSDEC SPDES permitting requirements would not result in significant adverse impacts to the water quality or aquatic resources of the Hudson River or result in a failure of this portion of the river to meet the Class A water quality standards.

The recovery of groundwater during dewatering of the shaft and construction of the connector tunnel would not be expected to result in significant adverse impacts to groundwater quality or supply within the vicinity of the east connection site. DEP has included a well monitoring program for the FEIS. The implementation of regulatory requirements with respect to the use and storage of petroleum and other chemical products on the east connection site during construction of Project 1 would minimize the potential for adverse impacts to groundwater or surface water resources in the vicinity of the site.

HAZARDOUS MATERIALS

Comment 158: On page 2.9-9, the FEIS should clarify why reference is made only to OSHA, and not MSHA. It appears Mine Safety and Health Administration (MSHA) regulations would apply to much of the proposed project work. The FEIS should also clarify why the CHASP will be submitted to

[33] de Vries, M. Peter, and L.A. Weiss. 2001. Salt-Front Movement in the Hudson River Estuary, New York-Simulations by One-Dimensional Flow and Solute-Transport Models. U.S. Geologic Survey (USGS) Water-Resources Investigations Report 99-4024. Prepared in cooperation with the New York City Department of Environmental Protection, New York State Department of Environmental Conservation, and Hudson Valley Regional Council, Troy, New York.

NYSDEC instead of NYSDOL. The text should be revised as resolved per the preceding comment and correctly restated in the FEIS. (Gray)

Response 158: DEP confirmed that OSHA, not MSHA, regulations would apply to the work involved in constructing the Project 1. As noted in Section 2-9, the contractor's Construction Health and Safety Plan would be submitted to DEP, not NYSDEC or NYSDOL, in accordance with OSHA requirements.

TRANSPORTATION

See also "Mitigation" for related comments

Comment 159: The 2010 *Highway Capacity Manual* (*HCM* 2010*)*, which updates the *HCM* 2000, should be used. While 2.10-2.2 "Traffic Analyses" states that the NYSDOT "has directed all traffic consultants to continue utilizing the *HCM* 2000," no supporting documentation as to where this direction came from was provided.

In response to my January 23, 2012, email inquiry to the NYSDOT Traffic Operations Bureau regarding this directive, the response was: "The Department has not made any announcements regarding the use of the latest version of the *HCM* (2010)." As such, direction from NYSDOT requiring the use of the outdated manual instead of the most recent version should be provided to support the claim made. (Tignanelli)

2.10-2.2, page 2.10-3: Use of Synchro's Percentile Delay methodology differs from the NYSDOT Highway Design Manual (Section 5.2.2) which requires use of procedures consistent with the *HCM*. The *HCM* 2000 uses Webster's Formula methodology. What is the difference in results using the *HCM* methodology? Does this change any of the conclusions of the study? (Wersted)

Response 159: The traffic analysis for the DEIS was completed following the procedures outlined in the Final Scope of Work. In addition, DEP consulted with NYSDOT during the preparation of the DEIS and NYSDOT indicated that the *HCM* 2000 was the preferred modeling technique for the DEIS. Subsequent to the issuance of the DEIS, at a meeting conducted on January 26, 2012 with NYSDOT representatives at Region 8 offices in Poughkeepsie, NYSDOT reaffirmed that Synchro 7 (which is based on the *HCM* 2000 methodology) should be employed in this study. The projected incremental queues from project construction traffic were included in the DEIS, and no material changes in these predictions would be expected with the Webster's Formula methodology.

Comment 160: 2.10-2.2, page 2.10-7: Carter Avenue, Holmes Road, Candlestick Hill Road, and Lockwood Lane reference footnote 1. Should these refer to footnote 3 because they will be unaffected based on the proposed access to the (west connection) site? (Wersted)

Response 160: The footnote should have referenced footnote 3 and not footnote 1. This error has been corrected in the FEIS.

Comment 161: 2.10-2.4, page 2.10-11: It is noted that PM school pick-up/drop-offs would generally not coincide with the PM shift changes. If the PM shift change is at 3 PM, when is the afternoon drop-off period? (Wersted)

Response 161: The text for the PM school drop-offs has been revised for the FEIS to indicate that student drop-off times during the PM peak period may generally coincide with Project 1's construction worker shift change.

Comment 162: Level of service (LOS) is normally characterized as A through F, with A being very good and F being poor. However, the DEIS makes a number of references to LOS of "F+" (for example, Table 2-19.4). The definition of LOS F+ should be provided. (Tignanelli)

Response 162: The "+" indicated in this and other tables was noted in the footnote as locations where a temporary significant adverse impact was predicted, not a LOS indicator.

Comment 163: 2.10-3.1, Table 2.10-3, pages 2.10-13 and 14: The traffic counts collected at Route 9W/Fostertown Road likely only counted the volume of traffic passing through the intersection and not the demand, i.e., the volumes arriving at the back of queue. As such, the LOS table highlights an acceptable LOS D during the PM peak hour on the northbound through lane with a volume to capacity (v/c) ratio of 1.00. However, this approach regularly backs up ½ to 1 mile, indicating that the demand to pass through the intersection is much higher than the capacity. (Wersted)

Response 163: The DEIS disclosed that Project 1would result in a predicted temporary significant adverse impact at this approach. As part of mitigation, the traffic signal at this intersection would be upgraded to a real time system that will better optimize (offsets, cycles, and splits) operating conditions. The upgrades at these intersections have been explored and agreed upon with NYSDOT and would be part of a future Highway Work Permit application to NYSDOT. Subsequent to the issuance of the DEIS, DEP met with NYSDOT representatives to discuss the proposed mitigation measures, such as those presented for the west of Hudson study area. DEP has reached general agreements with NYSDOT on the types of upgrades

at the impacted intersections that DEP will fund, and gained concurrence from NYSDOT that these measures will mitigate the temporary significant adverse impacts from Project construction traffic. However, while the intersection of Route 9W and Fostertown Road would benefit from upgraded controllers and detectors funded by DEP, this intersection would still have an unmitigated predicted temporary significant adverse impacts from the Project.

Comment 164: Route 9W is already overburdened with traffic. This proposed (excavated material removal) route will use intersections along Route 9W to I-84 along one of the most congested areas of the mid-Hudson Valley. This sizable increase in heavy truck traffic will adversely affect community character and traffic congestion for the entire town (Newburgh). (Casscles)

Response 164: The DEIS included a detailed evaluation of potential truck traffic related to Project 1, and identified potential temporary significant adverse impacts that may result from it and potential mitigation measures for such impacts.

Comment 165: The DEIS is deficient in defining the net traffic change to River and Old Post Roads and the change in service level to the Route 9W and Old Post Road intersection. The DEIS seems to cover only right turns, which are far better than left turns, which are very dangerous now. Try making a left in any one of those situations and it's terrifying. And the DEIS did not really address that. (Beretta)

We have a lot of accidents on our road, especially in front of my house. And that's another thing, because you've got Old Post Road there coming out. And making a left turn coming out of there, it's not easy to turn out of there. And I'm wondering if there's a traffic light that's going to go up there in that section to slow things down. (R. Hughes)

I'm concerned about any delayed access for emergency vehicles on River Road. (Beretta)

Response 165: Section 2.10 of the DEIS identified potential traffic impacts in the west of Hudson study area, and information on accident frequencies was included in the DEIS. Traffic expected from construction of the Project 1 used logical assignment percentages that were reported in figures in the DEIS. The additional traffic to River and Old Post Roads from construction of Project 1 would be minimal. The construction of Project 1 is not expected to impact emergency vehicles on the roadways in the study areas. In addition, the construction traffic from Project 1 is not expected to significantly impact the ability of vehicles to make left turns at the intersection of Route 9W and Old Post Road.

Comment 166: 2.10-3.1, page 2.10-15: What were the common contributing factors in the accidents observed in the corridor? (Wersted)

Response 166: The section above the table in question provided additional breakdowns and discussions at the intersections with the highest occurring accident rates, the common contributing factors in the accidents observed by corridor were similar to the extended discussions provided for the locations with the highest occurring accidents. In general, rear-end collisions and "overtaking" were among the reported greater factors. However, there did not appear to be a single common contributing factor to these accidents, and there were numerous reasons for accidents (besides the rear-end accidents), including speed, and following too close. As noted in the table, from one-quarter to one-third of accidents in the corridor were unknown, non-reported, or undefined.

Comment 167: The DEIS references CEQR in determining that no High Accident Locations (HALs) exist within the vicinity of and on the travel routes to the proposed connection sites. NYSDOT collects crash data and performs annual statistical queries for HALs using different criteria. The most severe of the HALs are expressed as Priority Investigation Locations (PILs). The following locations within the vicinity of and on the travel routes to the proposed project have been identified as 2010 data year PILs (see **Table 10-1**). (Sassi)

Table 10-1
Accident Analysis—NYSDOT 2010
Priority Investigation Locations
Near the Connection Sites

Begin Reference Marker	End Reference Marker	Calculated Severity	No. of Accidents
9 82051028	9 82051031	8.88	96
9 82051033	9 82051035	3.29	67
9 82051036	9 82051037	4.59	42
9 82051064	9 82051068	8.38	107
9 82051068	9 82051071	2.84	59
9 82051072	9 82051073	23.13	104
9 82051077	9 82051082	7.76	189
9D82033002	9D82033002	15.93	30
9D82033008	9D82033011	3.67	36
9D82033030	9D82033032	3.46	23
9D82033036	9D82033039	1.90	29
9D82033050	9D82033055	3.12	57
9D82033068	9D82033072	2.27	44
52 82042039	52 82042045	7.74	126
52 82042045	52 82042049	3.00	64
9W83023001	9W83023001	27.43	56
9W83023002	9W83023004	4.03	37
9W83023010	9W83023014	2.54	58
32 83013002	32 83013004	5.80	43

Response 167: Comment noted. In discussions with NYSDOT in a meeting on January 26, 2012, it was agreed that no additional analysis would be required, and the proposed mitigation measures would generally improve traffic conditions and safety in the area.

Comment 168: 2.10-3.3, page 2.10-22: The temporary traffic signal at the (west connection) site entrance should include vehicle detection to minimize delays to through traffic when no vehicles are present on the side roads. A pre-timed signal should be avoided. (Wersted)

Response 168: The temporary traffic signal at the west site entrance would have vehicle detection.

Comment 169: 2011 existing conditions turning movement counts were collected at the study area intersections during the weekday morning and afternoon peak periods from 6 AM to 9 AM and from 3 PM to 8 PM. Counts were collected in December 2010, June 2011, and September 2011. The applicant conducted turning movement counts at the intersection of Route 9 and Old Hopewell Road (C.R. 28) on both June 8, 2011, and September 13, 2011.Turning movement count data from September 13, 2011 was also used.

In comparing the total intersection volumes for both dates for the weekday morning and weekday afternoon peak hours, it is determined that the applicant should use the higher volumes found in the data collected on June 8, 2011, for the analysis. Revision should be made to all of the figures and tables, and to the capacity analysis as well.

Re: 2013 future with Project 1 traffic volumes. Site traffic generation was added to the 2015 future without Project 1 traffic volumes to obtain the 2015 future with Project 1 traffic volumes. The volumes shown are acceptable; however, the applicant should indicate the reason for using the lower intersection volumes for Route 9 at Old Hopewell Road. (Stolman)

Response 169: The use of the suggested higher numbers would not significantly change the capacity analysis results presented in the traffic study. Project 1 would not impact operating conditions at this intersection since only one additional vehicle trip associated with the construction of the project was projected at movements at this intersection. Therefore, no additional analyses were performed for this intersection in the FEIS.

Comment 170: Some of the existing level of service results shown in Table 2.10-10 do not appear to reflect field conditions. For example, Intersection No. 2 (Route 9D and I-84 WB ramps) shows LOS B for the NB left turn during both

AM and PM peak hours. Intersection No. 18 (Route 9D and Brockway Road/Pappas Lane) is also shown to operate better than observed conditions. The results in this table should be confirmed. In addition, the peak hour for each intersection should be investigated and an analysis conducted for the true peak hour. Documentation supporting the determination of the peak hour should be included in the DEIS. (Dozier)

Response 170: The peak hours examined in the traffic study were determined based on an extensive data collection count program, the results of which determined the peak hours to be 7:15 to 8:15 AM and 4:30 to 5:30 PM. Additional field observations at all study area intersections during these two peak hours were undertaken before the issuance of the DEIS and confirmed that the level of service results presented in the traffic study are accurate.

Comment 171: For the weekday afternoon peak hour, the volumes in the figure for the intersection of Route 9D and Alpine Drive do not match the turning movement count sheets and should be revised through the Build conditions, as needed. (Stolman)

Response 171: As is standard engineering practice, the turning movement counts serve as part of the information to develop a balanced traffic network for analysis. However, it only serves as part of the information used to develop conservative baseline traffic assessments. The series of counts undertaken at nearby intersections and by automatic traffic recorders (which record numerous days of traffic volumes) are reviewed in order to develop a balanced traffic network analysis. In developing the balanced network, the largest recorded volumes from the automatic traffic recorder and the turning movement counts from multiple intersections are reviewed to develop a conservative assessment of the number of vehicles in the existing traffic networks by time period of analysis. Therefore, the turning movement counts in the field on a particular day typically do not match the balanced network volumes. This is an example of such, and no changes are warranted.

Comment 172: Re: 2013 future without Project 1 traffic volumes. A 2 percent annual traffic growth rate was employed to the horizon year 2015 to account for the background traffic growth in the study area, and is appropriate. The applicant did not include traffic for other developments; however, assumed the growth rate noted above accounts for traffic for the following two developments: Obercreek subdivision, 15 single-family homes, Marlorville Road/New Hamburg Road; and Chelsea Farms subdivision, 18 single Family Homes, Chelsea Road/North River Road. (Stolman)

Response 172: Comment noted. The growth rate conservatively estimates traffic from developments and regional increases in traffic.

Comment 173: Re: (east connection) site traffic generation and assignment. Site traffic generation estimates include trips made by both automobiles and trucks. It is anticipated that there will be 116 workers accessing the site daily. To be conservative, 58 workers were assumed to access the site for the 7 AM to 4 PM shift and for the 4 PM to 11 PM shift.

It is assumed that there is a vehicle occupancy of 1.2 to account for any carpooling, which will reduce the auto trips to 48 per shift. The maximum capacity of trucks that the site could accommodate per hour was estimated to be 12. Using passenger car equivalents (PCE) from the *CEQR Technical Manual*, this represents 24 trips. Based on the shift times, there will be a total of 48 and 96 vehicle trip ends during the weekday morning and weekday afternoon peak hours, respectively.

Total truck trip ends will be 48 vehicles during both peak hours. Therefore, total site traffic will be 96 and 144 vehicle trip ends during the weekday morning and weekday afternoon peak hours, respectively. These volumes are added to the peak hours of the roadway to be conservative. Figures showing both the car and truck site traffic generation and assignment should be provided separately. (Stolman)

Response 173: The comment captures the estimate of peak projections of truck and auto construction-related traffic for the east connection site. Figures 2.10-17a through c provide the summary of project-generated traffic volumes in passenger car equivalents for the three assignment scenarios analyzed. Figure 2.10-17d presents the incremental auto traffic (in actual vehicles) for Scenario 3, and Figure 2.10-17e presents the incremental truck traffic (in actual vehicles, not PCEs) for Scenario 3.

Comment 174: The construction traffic assignment described on page 2.10-50 is inconsistent with our Department of Public Works' recommendation, made at a meeting with DEP, that construction vehicles traveling from/to the north use Old State Road to Route 9D, rather than Chelsea Road to Route 9D. Please explain why this recommendation was not followed. (Dozier)

Section 2.10-4.3, page 2.10-50. The following of all trucks arriving and departing from the east connections site via County Route 92, Chelsea Road, to and from NYS Route 9D is inconsistent with DCDPW's recommendation made at a meeting with representatives of the NYCDEP that construction vehicles accessing the site from the north use Old State

Road to NYS Route 9D. Please explain why this recommendation was not followed. (Kelley)

Response 174: Three different project-generated traffic assignment scenarios were examined in the DEIS, including one that did assign traffic to/from the north along Route 9D to Old Post Road. Potential temporary significant adverse impacts resulted from projected construction auto trips, not construction truck traffic. However, at a meeting before the issuance of the DEIS in Wappinger Town Hall with representatives of the Town of Wappinger and Dutchess County, it was decided for safety reasons that all construction truck traffic would utilize Chelsea Road to take advantage of the traffic signal at the intersection of Chelsea Road and Route 9D. This was confirmed at a follow-up meeting with Dutchess County on March, 28, 2012. As part of the proposed mitigation plan the traffic signal at this intersection will be upgraded to a real time progressive/adaptive traffic signal system.

Comment 175: Re: capacity analysis results and project impacts. The correct peak hour factor (PHF) should be used for the intersection of Chelsea Road and Chelsea Ridge Drive for all weekday morning peak hours. The No Build/Build capacity analysis table should include columns for the 95th percentile queue length analysis and a column showing the storage/link length for all lane groups for all study area intersections. Synchro files should be revised, as needed, for all conditions and time periods to reflect the appropriate signal timing parameters shown on the timing plans and field verification sheets. (Stolman)

Response 175: To ensure a more conservative analysis, the PHFs utilized at the Chelsea Road and Chelsea Ridge Drive intersection were slightly lower, compared with what was calculated based on the traffic counts. In the DEIS discussion of queuing, it was stated that the proposed construction would not significantly increase queuing on an average per cycle basis. In addition, in Section 2.10 of the FEIS, Table 2.10-14d, which presents a summary of average and 95th percentile queues from Synchro in 2015 for the east of Hudson study area intersections with and without Project 1, shows that queues would not be significantly increased. The signal timings utilized in the study were based on official NYSDOT timings that were field-verified.

Comment 176: The applicant has provided a sight impact analysis for four of the study area intersections. The Intersection Sight Distances (ISD) for these four intersections should be measured in the field and provided in a tabular format along with the ISD, as required by AASHTO, which is based on

the 85th percentile speeds observed on the roadways. All sight distance triangles shown should meet AASHTO specifications, which require that the triangle be measured 15 feet back from the edge of pavement. The provided graphics (see Appendix 10.1) should have a scale to verify the sight triangles and also should show where the vertex of the triangle is on the roadway, which currently is not shown. The following comments are provided on the graphics:

1. River Road North at Site Access Drive—The sight distance triangle encroaches on the property to the left, and should be measured from the edge of pavement 15 feet back. The sight distance triangle to the right should be provided.
2. Old State Road at River Road North—The sight triangles to the left and right encroach on the adjacent properties and should be measured from the edge of pavement 15 feet back.
3. Route 9D at Old State Road North—The sight triangles to the left and to the right should be measured from the edge of pavement 15 feet back. (Stolman)
4. Route 9D at Old State Road South— For the left-turn approach, the sight triangle to the left should be revised to be in the proper lane and should be measured from the edge of pavement 15 feet back. Also, a sight triangle to the right should be provided. (Stolman)

Response 176: The DEIS stated that clearing may be necessary at some point in the future at the above locations. As part of the traffic management plan, DEP will meet with county and town officials to assess roadway conditions throughout Project 1's construction period. If necessary, vegetation clearing will be performed at certain locations to maintain acceptable sight distance.

Comment 177: The applicant has provided a swept path analysis for the intersection of Chelsea Road at Market Street for a WB-62 truck traveling to and from the site. The graphics currently show that the WB-62 vehicle will encroach off of the edge of pavement and onto the property on the northeast corner. Mitigation should be provided.

The applicant should provide swept path analyses for the site access drive at River Road North, Route 9D at Chelsea Road, for the horizontal curves on Chelsea Road approximately 800 feet to the west of Thornacres Drive (see photographs 1 through 5 in Appendix 10.1), and at the intersection of River Road at Bank Street for WB-62 vehicles entering and exiting the site.

The swept path analysis for the intersection of River Road at Bank Street indicates a need for improvements to the alignment of River Road, if possible (see photograph in Appendix 10.1). (Stolman)

Response 177: The DEIS looked at worst-case locations in the study area and determined that even the contractor's largest vehicles that may be required at limited times would be able to make turns at the most difficult locations. Therefore, no physical improvements would be required.

The template shows a slight encroachment over the edge of the pavement at the intersection of Chelsea Road and Market Street. This is not significant and the Autoturn software presents a conservative analysis; professional drivers with a management plan in place would perform better compared with what is shown on the graphic. Based on DEP's experience with the current construction on-site, WB-62 vehicles currently travel the proposed route without encroaching the pavement.

Comment 178: The applicant should provide a traffic management plan to direct large truck traffic on the local roads between the (east connection) site and Route 9D, especially where roadway lane widths are less than 10 feet. The applicant should also address how workers will control the intersections where trucks will need to utilize the entire roadway to complete turning maneuvers. (Stolman)

Response 178: The DEIS explained that a traffic management plan would be implemented. One of the elements of the traffic management plan would be to employ flagmen and other traffic control devices to control traffic where necessary. Section 2.19-4 of the DEIS provided additional details and elements for inclusion in the Traffic Management Plan.

Comment 179: The discussion of truck trips generated by the project in section 2.10-4.3 does not specify the size or type of trucks. Different truck types impact the road system differently in terms of pavement damage, turning movements, etc. The estimated number of truck trips should be classified by truck type and gross vehicle weight. In addition, truck turning templates should be provided for turns along the entire route. (Dozier)

Section 2.10-4.3. The discussion of truck trips generated by the project does not specify the type or size of trucks. The estimated number of truck trips should be classified by truck type and gross vehicle weight. In addition, truck turning templates should be provided for turns along the entire proposed truck route. A discussion of the capacity of the proposed truck route to accommodate routing of oversize and overweight trucks which will need to access the site should also be included. A Special

Hauling Permit from the DCDPW shall be required for any oversize or overweight vehicles traveling on CR 92 (Chelsea Road) or any other County highway. (Kelley)

Response 179: The DEIS noted that the majority of the construction related trucks would be standard sized trucks (e.g., WB-40 or smaller), similar to the trucks that currently travel on study area roadways. However, as part of the preparation of the DEIS, an assessment of the largest truck anticipated to infrequently travel to/from the project site – (American Association of State and Highway Transportation Officials [AASHTO]), Designation WB-62 was undertaken. The turning templates for these trucks (which show that these trucks can safely maneuver the routes to be traveled) are shown in the traffic appendix of the DEIS. Analyses of additional intersections are not required at this time, since the DEIS demonstrated that even the most infrequent large truck trips should be able to access and leave the shaft sites. If required, the DEP contractor would apply for all the necessary permits from the DCDPW associated with any oversized/overweight trucking activity.

Comment 180: As the project development advances, NYSDOT reviews will precipitate more detailed comments. (Sassi)

Response 180: Comment noted.

AIR QUALITY

Comment 181: This project will probably involve the use of many diesel dump trucks that will emit a lot of smoke. Diesel smoke is particularly reactive in lungs for those who have asthma or other respiratory diseases. Many of the individuals near the construction site (west connection site) are elderly who have respiratory illnesses. Consideration should be given to using clean trucks that do not emit significant amounts of diesel air pollutants that can exacerbate the asthma and respiratory conditions of local residents around the construction site and along Route 9W.

This project will clearly increase air pollution, especially emissions from diesel trucks and construction vehicles, which tend to use diesel fuels. The DEIS, while commenting on the adverse effects to air quality provides information on its adverse effects, does not detail the public health concerns due to increase diesel emission which has been proven to heighten asthmatic episodes for both children (who have new and developing lungs) and the elderly (who have less lung capacity). In addition, it does not study the public health effects for others all along Route 9W who have respiratory illnesses or for schoolchildren who attend

the Middle Hope Elementary School or Balmville Elementary School or the elderly and young families that live in Parr Estates, Parr Meadows, Apple Valley apartments, and others along Route 9W. (Casscles)

Response 181: DEP would require the contractors for Project 1 to use ultra low sulfur diesel fuel for all diesel engines throughout the construction period. Use of ultra low sulfur diesel fuel allows for vehicles to use and properly maintain controls that can significantly reduce particulate emissions from diesel engines. To reduce particulate matter emissions to the extent practicable, diesel particulate filters (DPFs) would be required as emissions controls on diesel equipment greater than 50 horsepower (hp). If the implementation of the DPF would interfere with the operation of the equipment (diesel equipment greater than 50 hp), diesel oxidation catalysts (DOCs) would be required. The construction activities would be subject to New York City Local Law 77, which would require the use of best available technology (BAT) for equipment at the commencement of the construction.[34] All construction equipment at both study areas would need to meet at least EPA Tier 2 emission standards. These are stringent emission standards for nitrogen oxides, hydrocarbons, and particulate matter for 2001 through 2006 nonroad diesel engines of all sizes. In addition, the non-emergency diesel engine would be required to meet Tier 4 New Source Performance Standards (NSPS), which is anticipated to include a DPF. Tier 4 emission standards were adopted by EPA as a comprehensive national program to greatly reduce emissions from nonroad diesel engines by integrating engine and fuel controls as a system to gain the greatest air-quality benefits. These emission standards reduce emissions of particulate matter and nitrogen oxides from nonroad diesel engines by more than 90 percent.

Project 1 is expected to result in a temporary increase in air emissions (see Section 2.11, "Air Quality," for further details). The sources of these emissions would be construction-related traffic and on-site construction-related mobile and stationary sources. The U.S. Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. To demonstrate compliance with these standards, maximum predicted off-site incremental

[34] New York City Administrative Code § 24-163.3, adopted December 22, 2003, also known as Local Law 77, requires that any diesel-powered non-road engine with a power output of 50 hp or greater that is owned by, operated by or on behalf of, or leased by a city agency shall be powered by ultra low sulfur diesel fuel (ULSD), and utilize the best available technology (BAT) for reducing the emission of pollutants, primarily particulate matter and secondarily nitrogen oxides. DEP is charged with defining and periodically updating the definition of BAT.

concentrations from expected Project 1 construction emissions were added to conservative background conditions. With Project 1, the maximum predicted total concentrations of carbon monoxide, sulfur dioxide, nitrogen dioxide, PM_{10}, and $PM_{2.5}$ would be below the applicable NAAQS at both the west and east connection sites, including potential cumulative concentrations. The text in Section 6.0-1 in the FEIS has been revised to include this statement. Therefore, there are no predicted temporary significant adverse public health impacts from air quality during Project 1 construction.

Comment 182: Related to the narrow valley issue (see section 10.0-3.14, "Noise"), the same considerations should be reviewed and documented in the DEIS as it relates to dust, dirt, and air pollution, which will settle in the valley and not be blown away by the wind. (Casscles)

Response 182: As a result of DEP's requirement for the contractors, particulate matter emissions from both connection sites would be minimized to the maximum extent practicable. A dust control management plan would be required for all grading activities, roadways at the concrete batch plant at the west connection site, and all unloading and loading material handling operations at both connection sites. This plan, would include requirements for adequate wet suppression for fugitive dust at both connection sites. In addition, equipment at the concrete batch plant, such as the hoppers, loading operations, and silos would be equipped with control devices such as filter socks and baghouses that are used to decrease particulate matter emissions by at least 99.9 percent. The aggregate stockpiles at the concrete batch plant would be required to be enclosed on the top and three sides. If open stockpiling is used, the stockpiles would be required to be enclosed on three sides, with the enclosure wall sufficiently higher than the top of the stockpile to prevent wind whipping.

The air quality analysis was performed using the latest EPA-recommended dispersion model to determine whether there would be a potential for significant adverse impacts in the vicinity of the connection sites. This model is capable of handling the rural, flat nature of the study area as well as the higher elevations surrounding the study area. It is also capable of handling the low-level surface releases of the construction equipment exhausts, which influence nearby concentrations within the study area. The model predicts what will happen to the construction equipment exhaust plumes by incorporating current concepts about flow, how the differing elevations of the landscape interact with the plumes' dispersion, and both with and without the effects of nearby buildings. In addition, the analysis was performed using EPA guidance for meteorological

conditions: the latest five years of meteorological surface data from Dutchess County Airport in Poughkeepsie, NY, and concurrent upper air data collected from Albany, NY, which were selected since they are considered to be the most representative of conditions in the area of the site.

Comment 183: Will the project sponsor help mitigate air pollution the project will create in local homes, particularly for those with asthma or other respiratory illnesses or small children, who are much more susceptible to lung damage from air pollution, particularly diesel exhaust? (Casscles)

Response 183: As indicated in section 2.17-2.1, there are no predicted temporary significant adverse public health impacts from air quality during Project 1 construction.

Comment 184: The conclusory statement on page 2.11-29 regarding emissions should be supported by a more detailed discussion. For example, during shaft (and connector tunnel) construction there will be more dust and fumes from blasting than during tunnel excavation with the TBM (when there will be none). Also, just to say that emissions during one phase of the project are less than during another phase (even though as described, the statement does not appear to be true) is not a valid basis for the implied conclusion that there will be no adverse impacts. The FEIS must examine the downwind impacts from blasting fumes and dust. (Gray)

In section 2.11-7, the conclusion may be valid with respect to the studied parameters, but as identified in the preceding comment, dust and fumes from blasting are issues that should also be examined and may require a different conclusion, to be stated in the FEIS. (Gray)

Response 184: The predicted concentrations were modeled for periods that represent the highest expected air quality impacts by construction phase since these were the periods with the highest potential emissions. Since emissions from other phases of construction (for example, during blasting operations) are expected to be comparable or less than emissions from the reasonable worst-case scenario phases, the increments and total predicted concentrations during other phases of construction and at other locations are expected to be less. Furthermore, since no significant adverse air quality impacts were predicted for the peak emission periods and phases of construction, significant adverse air quality impacts would not be predicted from the other phases of construction. The volume and concentration of blasting emissions would be comparable or less than the potential emissions from the non-blast construction equipment analyzed in the reasonable worst-case scenarios. Therefore, blasting operations at

either the west or the east connection site would not result in a significant adverse impact.

Comment 185: The Conex boxes noise barrier may not be a suitable air quality barrier. (Gray)

Response 185: The Conex noise barriers are not intended to be a mitigation measure for air quality and were not recommended as such in the DEIS. Their functional benefit would be strictly related to reducing noise impacts, and the air quality analyses that were reported in the DEIS are not affected by the noise barriers.

Comment 186: The FEIS should also examine potential air quality in respect to the ventilation air exhausted from Shaft 6B and the connector tunnel. As an aside, the ventilation equipment may also be a noise issue that should be considered in the noise analysis for the Shaft 6B and connector tunnel construction in Section 2.13. (Gray)

Response 186: The ventilation equipment and exhaust air were included in the air quality and noise analyses reported in the DEIS.

Comment 187: There does not appear to be a discussion of the potential for methane, radon, or hazardous gases being liberated during tunneling operations. 29 CFR § 1926.800 discusses necessary measures that need to be undertaken for "Gassy Operations." The potential for the liberation of methane, radon, or hazardous gases should be addressed and any appropriate control and mitigation measures should be discussed. (Horan/Roberts)

Response 187: While constructing the bypass tunnels or shaft, DEP would ensure the safety of all the workers, both in the tunnel and on the surface, and comply with all environmental and OSHA regulations, including those for ventilation. The shaft and tunnel excavation would be classified in the construction specifications as "potentially gassy," which alerts the contractor to the need to be prepared for these conditions.

ENERGY AND GREEHOUSE GAS EMISSIONS

See also "Natural Resources and Water Resources" for related comments

Comment 188: Section 2.12-4.5, "Tree Removal," states that 29 acres of trees and vegetation will be removed from the west connection site and an additional 6 acres on the eastern site. While a total of 643 trees will be removed, the DEIS states only "a small number of trees" are to be replanted. The number of trees to be replanted should be quantified. More

than a "small number" should be replaced as trees provide valuable functions, such as stormwater management, erosion control, wildlife habitat, etc. (Tignanelli)

Response 188: In the period between the issuance of the DEIS and FEIS, the landscaping plans during construction and after completion of the project were refined. DEP is working with the local towns and New York City Design Commission on formulating a plan for vegetation cover during and after completion of construction.

Comment 189: GWP numbers are presented by each category: material, power, and vehicles. But since the numbers appear to indicate total emissions for both the shafts and bypass tunnel, would it be possible to have the data separated by the structure? (Lim)

Response 189: Greenhouse gases (GHG) and energy differ from other environmental areas of concern in that the impact of energy use and emissions is a cumulative global one, and therefore generally not associated with the geographic location of the activity or the precise time when the emissions occur (generally, global climate change is measured on a scale of decades to centuries). Therefore, the GHG emissions and emission reduction measures presented in the DEIS combine the material, power, and vehicles for all construction phases at both the west and east connection sites, including for Project 1 and the portion of Project 2B involving the connection of the bypass tunnel (collectively referred to as "Project" in this section).

Comment 190: Re: climate change and GHG. The FEIS should include an expanded discussion of potential mitigation measures. For those mitigation measures not chosen for implementation, the FEIS should provide a discussion to justify their elimination from further consideration. Note that NYSDEC issues a guidance document July 15, 2009, entitled *Guide for Assessing Energy Use and Greenhouse Gas Emissions in an Environmental Impact Assessment* (available on the NYSDEC website) which may be useful in preparing an expanded discussion of potential mitigation measures relating to GHG emissions. (Ballard)

Response 190: The GHG analysis was prepared in accordance with the above-mentioned NYSDEC guidance. The vast majority of the sample measures listed by NYSDEC are aimed at development projects and are not applicable to this type of construction project. Nonetheless, the project has investigated available measures discussed in detail in the DEIS, and would be applying measures where they are found to be practicable.

Comment 191: The DEIS in general, and Table S-9, "Environmental Alternatives," in particular, assigns little importance to the removal of large quantities of excavated "shaft muck" by barge or rail, in terms of potential reductions in GHG emissions. The brief conclusion states that there would be "Higher GHG emissions because of construction and operation of the wharf" and "rail connection." However, NYSDEC believes that significant reductions in energy use and GHG emissions could potentially be realized by transporting excavated materials by rail or barge (or both), rather than truck (even if such reductions are partially offset by construction of intermodal transfer facilities). Traffic impacts, including number of truck trips generated, could potentially be reduced as well by utilizing either of these transportation alternatives. The FEIS should more fully explore such alternate modes of transport and provide an expanded discussion which supports DEP's position. (Ballard)

Response 191: As noted in responses to other comments related to the potential use of rail or wharfs (see section 10.0-3.9, "Alternatives," below), the use of such facilities is not expected to reduce the number of construction-related truck trips. Therefore, no additional greenhouse gas assessments were performed for these alternatives.

Comment 192: The FEIS should discuss whether electrically powered equipment could be used for portions of proposed construction, especially site preparation. This portion of proposed work could potentially utilize electric excavators, loaders, or other electrically powered equipment and reduce GHG emissions. (Ballard)

Response 192: On the scale of work expected, larger equipment required for site preparation would include excavators, loaders, and other large equipment, which are not available as electrified vehicles with sufficient power and capabilities. For the small equipment necessary for site preparation, electric equipment would likely not be practicable for the necessary construction tasks. As noted in Section 2.12, "Energy and Greenhouse Gas Emissions," an electric substation, connected to the existing CHG&E grid, would be built at the west connection site during Phase 1 to provide power during later construction phases on the site and would be used to provide power for some uses that otherwise would use fuel on-site. Of the two connection sites, the west connection site would require by far the largest amount of site preparation work. However, power supply to the west connection site under existing conditions is limited and would be unavailable as suggested during site preparation. Therefore, given the nature of work and existing conditions of electrical supply to the site, use

of electric-powered equipment during site preparation is not expected to be practicable.

NOISE

See also "Mitigation" for related comments

Comment 193: Section 2.13, "Noise," contains meaningless statements such as "to the extent feasible" and "to the extent practical." which are both subjective, unenforceable statements. (Tignanelli)

Response 193: The DEIS included detailed evaluations of the likely noise sources of Project 1 by phase of construction and methods to reduce potential adverse noise impacts. The FEIS includes a Conceptual Noise Mitigation Plan (see Appendix 2.19-2) that details the approach DEP will implement for both connection sites throughout construction of the proposed project.

Comment 194: The New York City Noise Control Law provides:

§ 24-217.1. Measurements.

Unless otherwise specifically provided, all sound level measurements under this code shall be taken in L_{max} with the sound level meter set to slow response.

Under § 24-216(b), all New York City contracts must comply with the Noise Control Code.

It could be argued that L_{max} contours are required so that enforcement under the New York City Noise Control Code can take place and that there will be proper monitoring. (Crossan)

Response 194: As noted Section 2.13, "Noise," DEP would specify that noise from construction activities and some construction equipment meet the noise reduction requirements of the New York City Noise Control Code (Local Law 113, section §24-219). In addition, see Appendix 2.19-2, the Conceptual Noise Mitigation Plan of the FEIS.

Comment 195: The DEIS has apparently utilized New York City Noise Control Codes, and it further states that the DEIS complies with Notice of Adoption of Rules for Citywide Noise Mitigation. In addition, the DEIS indicates that the noise modeling was conducted utilizing the EPA's Noise Guidance and the *CEQR Technical Manual*. However, the noise assessment should be conducted or viewed in accordance with the NYSDEC guidance document entitled "Assessing and Mitigating Noise Impacts" (DEP-00-1 Available on the NYSDEC website). The purpose of utilizing the

NYSDEC Noise Assessment guidelines is to depict the ambient noise and then project what the new noise levels will be at the various receptors. (Ballard)

Response 195: The general guidelines in NYSDEC's guidance were followed in the DEIS impact assessment. Ambient noise levels and noise levels anticipated by phase were projected in increments at various receptors. DEP has also developed a conceptual noise mitigation plan as documented in Appendix 2.19-2. However, since the NYSDEC noise impact criteria is less stringent than the CEQR impact criteria, the latter was used for the analysis of Project 1 and 2B in the DEIS.

Comment 196: The DEIS does not account for the total noise generated by simultaneous operation of all equipment located on-site (east or west connection site) during the construction phase. Such equipment includes the proposed rock crusher, concrete batch plant, drill rig, and all powered haulage equipment (haul trucks, loaders, bulldozers, drill jumbos, rock hammers, excavators, or other). The FEIS should include a revised noise assessment which reflects this "worst-case" scenario.

Noise level data values given for the west connection site appear to be very low for the types of equipment that will be working simultaneously on-site. Utilizing the above NYSDEC noise guidance for *Additive Effects of Multiple Sound Sources* indicates that the construction noise generated at the site will be approximately 94 decibels at a distance of 50 feet. In order to calculate the resulting decibels at the residences, distances to each receptor must be provided. (Ballard)

Response 196: The detailed noise modeling analyses performed for the DEIS accounted for the total noise generated by simultaneous equipment expected by phase for the worst-case scenarios. The scenarios varied by construction phase expected at each connection site. Noise control measures that would be required as part of the construction of the proposed program were incorporated into the modeling, and the benefits of such were included in the off-site noise levels predicted in the DEIS. Distances between likely sources and receptors were included in all the CadnaA modeling performed for the DEIS.

Comment 197: The noise section discusses temporary impacts to the adjacent single-family homes during the night shift (11 PM to 7 AM). Six to 7 years will most likely not seem temporary for the residents of these homes, so although DEP will be applying for a variance for nighttime noise levels, the use of the word temporary is misleading. The residents that will be

affected by the noise levels should be contacted so they know the potential impacts before construction begins. (Cocks)

Response 197: See Response 3 regarding the use of the word "temporary" for predicted significant adverse impacts related to construction. As part of the Conceptual Noise Mitigation Plan (Appendix 2.19-2) and Outreach Plans, DEP would provide residents expected to experience significant adverse noise impacts with the opportunity to have storm windows and air conditioners installed in affected rooms.

Comment 198: The topography of Middle Hope has not been adequately characterized in the DEIS as it relates to the noise and dust to be created by the project. Very little was mentioned that the proposed construction (west connection) site is situated in a narrow valley or corridor along Route 9W, and construction noise from drilling, blasting, and diesel trucks and construction vehicles, if not mitigated, will echo, magnify, and reverberate throughout the area to the detriment of local residents and those who patronize businesses in the area. It will be clearly heard by the large number of residents who live south of the site in Parr Meadows, Apple Valley, Parr Estates, and another residential project proposed south of Cedar Hill Cemetery. The DEIS does not consider the very significant environmental impacts this noise will have on these residents when the project is built. (Casscles)

Response 198: The ground contours and the potential effects of such (see section 2.13-2.4 in the DEIS) were included in the noise modeling undertaken for the DEIS, and the evaluation of impacts in the DEIS included locations well beyond those expected to result in temporary significant adverse impacts from noise (see section 2.13-2.5 in the DEIS).

Comment 199: I am encouraged that the DEIS outlines some strategies to minimize loud sound traveling to adjoining residential property owners. However, should the project move forward, more sound monitoring devices should be positioned in various parts of the Town of Newburgh and on adjoining properties so that the sound levels from such project can be measured. Further, if noise levels are in fact not tolerable, the City of New York should, in cooperation with the Town of Newburgh, institute additional measures to reduce sound from the construction site and from trucks that are using public roads. Also, if the sound levels remain unbearable, perhaps sound-proofing measures could be installed in those residences that are adversely affected. Further, more aggressive sound-proofing measures should be instituted during the evening hours and hours when more people are asleep. (Casscles)

Response 199: The Conceptual Noise Mitigation Plan (see Appendix 2.19-2) outlines the proposed monitoring program and mitigation measures that would be implemented throughout construction.

Comment 200: The DEIS correctly points out that noise can interfere with important life functions and enjoyment of life such as duration of sleep, time of deep sleep, difficulty for verbal communication, tasks requiring concentration or coordination. Further loud continuous sound and noise can cause annoyance, hearing damage, irritability of household members, and physiological problems. Further, that the loudness, duration, time of occurrence, and changes of noise level concentrations all affect the cumulative adverse affects of such noise. With that said, since this project is projected to last approximately 10 years, and operate 5 to 7 days a week, often for 24 hours per day, the cumulative adverse effects of this situation on the health and well being of Town (of Newburgh) residents, especially those who live nearby, will be exasperated and aggravated.

However, the DEIS conclusion is that the adverse effects from the generation of sound in the interior of homes would be "acceptable." While the studies paid for by the City of New York may maintain that the noise levels within a home would be "acceptable" a review of all of the very noisy activities that will be conducted throughout the day and night of adjoining residents and those who live all along Route 9W will clearly demonstrate that these noise levels will not be desirable nor "acceptable." Further that such high noise levels will damage the health and general well being of those affected. More needs to be done to mitigate this issue or at least obtain more realistic information on the true detrimental affects this will have on local residents. (Casscles)

Response 200: The DEIS included a detailed evaluation of noise impacts near both connection sites. Mitigation measures and procedures to be followed are included in the Conceptual Noise Mitigation Plan included in Appendix 2.19-2.

Comment 201: The DEIS minimizes the realistic effects of heightened noise levels that will occur during the third shift between 11 PM and 7 AM. These heightened noise levels, regardless of what the DEIS studies maintain, will impose very difficult living conditions of local residents for at least an 8-year period and probably will impose adverse health conditions on local residents as it will adversely affect sleep habits and ability to sleep at all (this is especially true for light sleepers such as the elderly and young children). This condition and adverse affects must be squarely

acknowledged in the DEIS and better mitigation measures instituted for all residents along Route 9W. (Casscles)

Response 201: The DEIS provided a detailed evaluation and determination of locations that are expected to experience temporary significant adverse noise impacts during construction (see section 2.13-2.5 in the DEIS). The public health impact assessment performed (see section 2.17-2.4 in the DEIS) determined that while the construction of Project 1 would result in predicted temporary significant adverse noise impacts at several receptors both west and east of the Hudson River, there would be no predicted significant adverse impacts on public health. The Conceptual Noise Mitigation Plan included in Appendix 2.19-2 outlines the procedures for receptor control mitigation.

Comment 202: The DEIS is deficient in defining noise levels along River and Old Post Roads. (Beretta)

Response 202: No significant traffic or other extended impacts from construction of the dewatering pipeline are expected along River and Old Post Roads. Noise associated with pipeline construction work along Old Post and River Roads would be perceptible for only a limited period of time based on the nature of the pipeline construction, which moves along the pipeline route as the pipeline is constructed. While the pipeline construction may create a noisy and intrusive condition when it is adjacent to a given noise sensitive receptor, the condition would be only during normal daytime work hours and temporary. The pipeline construction would be well below impact thresholds and would not result in a predicted significant adverse noise impact.

Comment 203: The DEIS is deficient in defining the effects of tunnel drilling through all phases of this project. What kind of nose and vibration will result for people who live on or near the tunnel path or project? Especially since this work will be done on three shifts, 24 hours per day. If you're sitting in your house or sleeping at night and this thing is chewing through rock, even though it is 900 feet down, what's that feel like? (Beretta)

Response 203: Because of the bypass tunnel's considerable depth, the vibration caused by the TBM would be extremely minor by the time it reaches the ground surface. Based on empirical data, the peak particle velocity at 900 feet directly above the tunnel would be in the range of 1/1,000 to 1/200 inches/second, meaning it is unlikely to be noticed by individuals during the limited time the TBM is directly beneath their property.

Comment 204: The FEIS should evaluate the project relative to the draft Noise Chapter of the Town (of Wappinger) Code. (Stolman)

Response 204: At the time the FEIS was prepared, the Town of Wappinger was considering revisions to the Noise Chapter of the Town of Wappinger Code. The elements of the Conceptual Noise Mitigation Plan (see Appendix 2.19-2) are consistent with the general goals of the revised code to reduce impacts on the community to the extent practical.

Comment 205: The representatives from DEP continuously refer to our neighborhood (near the east connection site) as quiet. This is something we will have little to none of for the duration of this project. (B. Anderson)

Response 205: Comment noted. Predicted temporary significant adverse impacts near the east connection site were reported in the DEIS. Appendix 2.19-2 provides a Conceptual Noise Mitigation Plan that would be implemented throughout the construction of Project 1.

Comment 206: Pursuant to New York City Administrative Code § 24-216(b) construction at the east connection site is subject to the provision of the New York City Noise Control Law (New York City Administrative Code Title 24, Chapter 2) in addition to any local requirements imposed by the Town of Wappinger. New York City Admin Code § 24-216(b) provides:

§ 24-216. Noise abatement contract compliance.

(b) Contract provisions. No contract shall be awarded or entered into by a contracting agency, unless such contract contains provisions requiring that:

1. Devices and activities which will be operated, conducted, constructed or manufactured pursuant to the contract and which are subject to the provisions of the code will be operated, conducted, constructed or manufactured without causing a violation of the code; and

2. Such devices and activities incorporate advances in the art of noise control developed for the kind and level of noise emitted or produced by such devices and activities.

§ 24-216(b)(2) implies that the noise control measures for the project should incorporate state of the art noise controls. The FEIS should identify the state- of-the-art noise control measures that shall be required in the contract for construction at the east connection site.

Under the New York City Noise Control Law, construction performed at the site before 7 AM or after 6 PM on weekdays and/or on Saturdays

and/or Sundays is subject to the provisions of § 24-223 "After hours work authorization." § 24-223(d) provides that:

> (d) Where there is full compliance with the noise mitigation plan yet nevertheless aggregate sound levels from the site where an after-hours authorization is in effect exceed 8dB(A) above the ambient sound level as measured in any residential receiving property dwelling unit (with windows and doors that may affect the measurement closed), the commissioner may request the person performing the work to confer with representatives of the department regarding additional noise mitigation measures that may be employed at the site to reduce aggregate sound levels. After such conference the commissioner may direct amendment of the noise mitigation plan for the site.

In order to provide effective enforcement of this section, the ambient sound levels in potentially affected residential receiving properties should be measured pre-construction to determine the efficacy of the noise mitigation plan.

New York City Noise Control Code Sets L_{max} for Construction Activities

§ 24-228(a)(1) sets an L_{max} of 85db(A) for non-impulsive construction equipment. § 24-228(a)(2) sets an L_{max} for Impulsive Sound that is 15db(A) above ambient.

§ 24-228. Construction, exhausts and other devices.

(a) No person shall operate or use or cause to be operated or used a construction device or combination of devices in such a way as to create an unreasonable noise. For the purposes of this section unreasonable noise shall include but shall not be limited to sound that exceeds the following prohibited noise levels:

(1) Sound, other than impulsive sound, attributable to the source or sources, that exceeds 85 dB(A) as measured 50 or more feet from the source or sources at a point outside the property line where the source or sources are located or as measured 50 or more feet from the source or sources on a public right-of-way.

(2) Impulsive sound, attributable to the source, that is 15 dB(A) or more above the ambient sound level as measured at any point within a receiving property or as measured at a distance of 15 feet or more from the source on a public right-of-way. Impulsive sound levels shall be measured in the A-weighting network with the sound level meter set to fast response. The ambient sound level shall be taken in the A-weighting network with the sound level meter set to slow response.

(b) Where a particular sound source or device is subject to decibel level limits and requirements specifically prescribed for such source or device elsewhere in this code, such specific decibel limits shall apply to such device or source. However, if aggregate sound levels from a construction site exceed the limits set forth in this section, compliance with such specific decibel limits shall not be a defense in any proceeding relating to a violation of this section.

As stated above, this section would apply in the Town of Wappinger by virtue of 24-216(b). This means that there is and L_{max} of 85db(A) for non-impulsive sound from a construction device. An L_{max} of 15db(A) above ambient is the standard for impulsive noise from construction devices.

New York City Noise Control Code Tunneling Permit

New York City Admin Code § 24-248(b) requires certain noise performance standards for tunneling activities:

§ 24-248. Standards for granting operating certificates and tunneling permits.

(b) No tunneling permit shall be granted unless the applicant shows to the satisfaction of the commissioner that:

(1) The devices employed in such tunneling, including construction devices, storage bins and hoppers, will be operated or used without causing a violation of the provisions of this code;

(2) The motor vehicles employed in such tunneling will be routed at such times of day and such routes as not to cause unreasonable noise; and

(3) All advances in the art of noise control, including appropriate closures around devices, and sound deadening linings on storage bins and hoppers, developed for the kind and level of noise emitted by applicant's activities or devices have been incorporated into such tunneling activities and devices.

§ 24-248(b)(3) requires sound deadening linings on storage bins and hoppers used for tunneling spoils. These are not listed in the FEIS. (Horan/Roberts)

Response 206: Comment noted. Appendix 2.19-2, Conceptual Noise Mitigation Plan, of the FEIS provides an overview of the noise control mitigation procedures and enforcement mechanisms that DEP would employ for equivalent consistency with the New York City noise control code.

Comment 207: As background to these (noise) comments we offer the following points from NYSDEC SEQRA's noise guidance document:

It is not the intention of this guidance to require decibel limits to be established for operations where such limits are not required by regulation. There are, however, instances when a decibel limit may be established for an operation to ensure activities do not create unacceptable noise effects. SEQRA allows the establishment of decibel limits.

Sharp and Startling Noise - These high frequency and high intensity noises can be extremely annoying. When initially evaluating the effects of noise from an operation, pay particular attention to noises that can be particularly annoying. SEQRA identifies sharp and startling noises as a particular concern. This supports consideration of L_{max} limits, which have been used at other major construction sites to limit intrusive construction noise impacts.

In non-industrial settings the SPL (sound pressure level) should probably not exceed ambient noise by more than 6 dB(A) at the receptor. This dBA increase "allowed" under SEQRA is similar to the allowed increase of 5 dBA for the L_{10} at the Central Artery construction in Boston. (Crossan)

Response 207: Appendix 2.19-2, Conceptual Noise Mitigation Plan, provides an overview of the noise control mitigation procedures and enforcement mechanisms that DEP would employ for equivalent consistency with the New York City noise control code. These measures address L_{max} limits and back up alarms (noted specifically in the NYSDEC SEQRA's noise document as a startling noise).

Comment 208: The DEIS makes conclusions that certain impacts are not considered significant. A determination of significance in a DEIS is premature and each involved agency is authorized to reach its own independent conclusion. (Horan/Roberts)

DEP repeatedly states that if an impact from construction occurs for less than two years it is not significant. I can find no textual support in the *CEQR Technical Manual* for that statement. I did find the following discussion:

To illustrate the above, construction noise, generated by pile driving, truck traffic, blasting, demolition, etc., is generally analyzed only when it affects a sensitive receptor over a long period of time. Based upon experience, unless ambient noise levels are very low and/or construction source levels are very high, and there are no structures that provide shielding, it is unusual for construction sources to have significant impacts at distances beyond 1,500 feet in New York City. Therefore, further analysis should be performed if the proposed project would cause construction equipment to

be operating within 1,500 feet of a receptor for a period of time exceeding two years. In some circumstances, however, even a shorter-term construction phase may affect highly sensitive locations (such as schools, hospitals, etc.), warranting further quantitative analysis.

CEQR Technical Manual at 22-2.

Please note, this section mentions construction equipment operating within 1,500 feet of a receptor for more than two years, not that the higher noise levels are generated for more than two years. (Horan and Horan/Roberts)

Response 208: The primary requirement in the completion of a DEIS is for the lead agency to make determinations of potential significant adverse impacts that may result from a proposed action or project. Following the Final Scope of Work and guidance under SEQRA and the *CEQR Technical Manual*, the determination of the significance of impacts from construction activities in the DEIS was based on a quantitative assessment of the predicted intensity, duration, and the geographic extent of the impacts. Detailed evaluations of the modeled results and potential impacts on nearby communities throughout construction of Project 1 and 2B, which were employed to determine potential temporary significant adverse noise impacts, were reported in the DEIS.

Comment 209: In order to interpret noise data contained in the DEIS and appendices, the distance to each of the receptors for both east and west connection sites must be provided. Additionally, it appears that some residential receptors (west connection site) were not included in this study. The FEIS should address these omissions. (Ballard)

Response 209: As noted in Section 2.13, "Noise," the geographic data used to develop the CadnaA model included CAD drawings of connection site work areas by construction period, adjacent building footprints and heights, changes in grade elevations by construction phase, locations of streets, and locations of sensitive receptors. For each analysis period, the location and characteristics of each piece of construction equipment, including noise emission levels and equipment usage rates as well as noise control measures, were input to the model. In addition, noise that would be reflected or shielded by barriers erected on the connection site or adjacent buildings is accounted for in the model.

In addition to the DEIS sections, additional information on the likely sources during construction by phase considered in the air and noise modeling was provided in Appendix 2.11, "Air Quality." Distances between likely sources and receptors were included in all the CadnaA modeling performed for the DEIS. This information was used to estimate

the potential off-site impacts at all potentially affected sensitive receptors near the connection sites or along transportation routes that access the connection sites. This information was used to calculate the incremental construction noise levels at locations throughout the east and west of Hudson study areas, provided in Appendix 2.13 of the DEIS. In the FEIS, the receptor locations have been added to the noise contour figures in Appendix 2.13, which are to scale, and distances can be determined for individual locations to various locations on either connection site. In addition, approximate distances from the connection sites to discrete receptors were provide in Section 2.13, "Noise," in the FEIS.

Comment 210: Data provided for the west connection site (in Appendix 2.13) includes tables with headings with include "with noise control" and "without noise control." It is unclear what the noise control measure is, but more importantly, the resulting data shows no change. Please explain this discrepancy. (Ballard)

Response 210: For the east connection site, DEP was able to identify fixed noise control measures (such as barriers) that would reduce off-site noise impacts in the nearby community. To demonstrate the benefits of these measures, Section 2.13 and Appendix 2.13 reflect the decrease, or attenuation, in noise levels with the implementation of these fixed control measures. As noted in section 2.13-3.3, for the west connection site, DEP examined the potential off-site noise impacts from the expected worst-case period construction activities in each phase, evaluated the greatest potential sources of off-site noise impacts, and undertook evaluations of potential measures to reduce off-site noise levels. As a result, DEP would require construction equipment to meet the New York City Noise Control Code standards. However, no additional mitigation measures have been identified that could materially reduce the predicted off-site noise impacts from the construction activities at the west connection site. This is because the projected sources contributing to the impacts off-site would be spread out, and there would be relatively large distances between the sources and the receptors. Thus there is no projected benefit shown from additional noise control measures.

Comment 211: Tables in Appendix 2-13 show noise data for both east and west connection sites. "Construction Noise Modeling Results," which appear to contain anomalous information. Data in these tables indicate that the east connection site will experience higher decibel levels than the west connection site from construction activities. It is unclear how this can be accurate due to the fact that the majority of the construction activities are

proposed to occur on the west connection site, rather than the east connection site. The FEIS should include an explanation for this apparent contradiction. (Ballard)

Response 211: The results presented in Appendix 2.13 and Section 2.13 show the incremental noise increase predicted from the detailed modeling and noise reduction measures committed to by DEP for the proposed program. The assessment of impacts not only includes the sources of noise from construction, but the background noise levels and the distance/topography from the sources to the nearest locations. Not only were the measured backgrounds at times substantially lower near the east connection site than at the west connection site, but the construction sources would be closer to more residences at the east connection site, and therefore, greater short-term calculated impacts were computed at the east connection site at some locations and phases of likely construction.

Comment 212: The DEIS states that truck traffic (east side) will continue until 11 PM on a daily basis (within a residential setting) and that tunnel boring activities will continue on a 24-hour per day basis. The fact that heavy truck traffic (and associated noise) will occur daily until 11 PM within a residential neighborhood (east connection site) appears excessive, especially given the projected increase in noise levels anticipated to be generated: 2.13-59 indicates that noise levels up to 25 dBA above existing (ambient) levels will be encountered at residences adjacent to the east connection site. Note that the NYSDEC noise assessment guidance document referenced above provides that a 6 dBA increase in sound level I "*significant,*" whereas anticipated noise levels this instance are up to four times as great. NYSDEC believes that additional noise mitigation measures should be proposed (fewer hours per day truck traffic, taller barriers, additional/permanent barriers, other) to reduce anticipated noise levels. (Ballard)

Response 212: The predicted maximum incremental impacts referred to in the comment were predicted to occur during the time periods when 24-hour work would be required for Project 1 when tunnel work is underway. The fundamental nature of tunnel work requires 24-hour work periods, and, therefore, it is not possible to restrict these activities. DEP identified in the DEIS many work plan elements and procedures that would reduce noise levels to the extent practical and reasonable for the DEIS analyses. Appendix 2.19-2, Conceptual Noise Mitigation Plan, of the FEIS provides an overview of the noise control mitigation procedures that DEP would employ to reduce noise impacts during construction.

Comment 213: Figures 2.13-4 through 2.13-12 have no legends, captions, or explanations associated with them. The FEIS should contain revised tables with this information clearly shown. (Ballard)

Response 213: In the text reference to these figures, Section 2.13 notes using Figures 2.13-4, 2.13-5, 2.13-6, and 2.13-7 as an example that these depict the west connection site, the location of likely on-site noise sources during the worst-case period in each phase of construction, and the roadways that construction-generated traffic would utilize near the site for each of the four phases of construction. In the FEIS, additional information has been applied to these figures, and the following text has been added to Section 2.13: "In each of these graphics, the blue images within the site depict likely on-site noise sources."

Comment 214: The discussion of noise impacts in section 2.13-4 does not discuss noise from truck brakes. This noise could be a substantial cause of concern for residents. We suggest that potential impacts from truck brakes be evaluated and that use of "jake brakes" be specifically prohibited. (Dozier)

The discussion on noise impacts predicted in connection with construction traffic utilizing CR 92 (Chelsea Road) should include noise from truck brakes due to the steep grades on CR 92, which is a significant concern in this residential area. Consideration should be given to prohibiting the use of compression release engine brakes, or "jake brakes." (Kelley)

Response 214: Noise generated by construction traffic was evaluated in the DEIS. The construction worker and truck vehicles associated with the project would be required to meet the applicable Town Code in effect during construction. At the time the FEIS was prepared, the Town of Wappinger was preparing to undertake revisions to the Town of Wappinger noise code. A draft Conceptual Noise Mitigation Plan is included in the FEIS, which provides an outline of how DEP will be working with the Town of Wappinger to address noise resulting from project construction. Construction-related vehicles containing a compression brake system or systems (i.e., jake brakes) would not be permitted to use their compression brakes while operating on a public road or right-of-way, except under emergency conditions.

Comment 215: With respect to the noise issue it is important to remember that the Planning Board (and the ZBA) can only approve the site plan application on a positive findings statement. In order to issue a positive findings statement the Planning Board must, pursuant to 6 NYCRR 617.11(5):

(5) certify that consistent with social, economic and other essential considerations from among the reasonable alternatives available, the action is one that avoids or minimizes adverse environmental impacts to the maximum extent practicable, and that adverse environmental impacts will be avoided or minimized to the maximum extent practicable by incorporating as conditions to the decision those mitigative measures that were identified as practicable.

Thus, the Planning Board has an obligation to see that adverse environmental impacts will be avoided where possible and mitigated, if not avoided, to the maximum extent practicable. (Horan and Horan/Roberts)

Response 215: Comment noted.

Comment 216: The DEIS was not fully responsive to the published Scope regarding noise. The items discussed below should be corrected, or a reasonable explanation provided for the deviation.

a. Did not do noise monitoring at four of sites proposed (1.3.14 paragraph 5 of Scope). The original reasons for inclusion and the changes circumstances that caused them not to be monitored should be discussed.

    i. NYS Route 9D at Blossom Court (The need for this receptor location will be based on the PCE screening that needs to be on Route 9D between Chelsea Road and the ramps to I-84.)

    ii. Jackson Street just west of NYS Route 52 (may not be necessary, but should be explained)

    iii. Within Reese Park (may not be necessary, but should be explained)

    iv. 2483 South Avenue (may not be necessary, but should be explained) (Crossan)

Response 216: Monitoring was undertaken at these four locations following the Final Scope of Work. However, after developing the projected construction traffic and assignments of such for the east connection site, it was determined that these four locations would not be adversely impacted. For the FEIS, the monitoring results for these four locations were included in Section 2.13, along with a discussion of the minimal projected impact at these four locations.

Comment 217: The DEIS (b) did not completely evaluate the noise generated by the construction vehicles at receptor locations along the traffic routes to the

work entrances to the construction sites. (1.3.14 paragraph 3 and 1.3.14.3 paragraph 1) The CadnaA modeling did not extend all the way to Route 9D. PCE screening was not conducted along 9D.

If existing Noise PCE values are increased by 100 percent or more due to a proposed project (which is equivalent to an increase of 3 dBA or more), a detailed analysis is generally performed. (page 19-10) Noise PCEs are never even addressed in the DEIS, even when receptors from the Scoping document were dropped. Based upon our observations it is nearly certain that there will be noise PCE increases of more than 100 percent one or more times each day on every approach between Route 9D and the site that workers and trucks utilize. In addition, truck traffic on 9D is high from about 6 AM to 3 PM, but low at other times. The traffic on 9D needs to be screened using noise PCEs for Shift 2 and Shift 3 on weekdays and all three shifts on the weekend). There is a reasonable likelihood that some receptors will have to be modeled in the early evening, night-time or weekends. In a 15-minute count at Route 9D and Chelsea at 8 PM on 6 February 2012 there were 98 percent LDV and 2 percent medium trucks, with zero heavy trucks. Thus, one cannot assume that evening, nighttime, and evening trucking will have no impact to the 9D corridor. The PCE screening needs to be performed as per the *CEQR Technical Manual*.

If a significant increase in the number of Noise PCEs is expected (i.e., more than a doubling of Noise PCEs) along any given route that proposed project-related vehicles would use going to and coming from the site within a given hour, then representative receptors should be selected along that route for analysis. There needs to be additional receptors along the worker and truck routes. At least one more receptor needs to be added along Chelsea Road between the entrance to the Chelsea Ridge apartments and Route 9D. If there are time periods on the weekends or nights when the PCEs on 9D between Chelsea Road and I-84 increase by more than 100 percent then a receptor should be added there, and TNM traffic noise modeling conducted along 9D. Thus, one or more additional roadway receptors are required. (Crossan)

Response 217: The DEIS fully addressed the potential mobile source noise impacts from construction of the proposed project at both connection sites. The comment fails to note that if a screening analysis with PCEs indicates the potential for impacts, then detailed modeling should be performed. The DEIS undertook such detailed modeling of mobile noise sources. The modeling performed with CadnaA addressed impacts on local routes where applicable for local roadways from the east connection site to Route 9D. Based on the CadnaA results demonstrating that the project-generated traffic would not result in significant adverse impacts on local roads,

which have a relatively low background noise and traffic levels compared to Route 9D, it was determined that there would no predicted adverse impacts on Route 9D (a road with much higher background noise and traffic levels) from project-generated traffic. Therefore, additional screening was not required.

Comment 218: The DEIS (c) did not *identify sensitive receptors (e.g. residences) in the vicinity of where construction activities are anticipated to occur*. (1.3.14 paragraph 2) There are only a limited number of receptors discussed. All but two are very near the site. All but one are adjacent to River Road or Chelsea Road. There needs to be more receptors further from the construction site to better define the impacts at that location (there are many receptors that will have lower existing noise levels than that which were reported at the monitoring sites adjacent to roads). Also, there needs to be a discussion of the number of homes and apartments that are represented by each receptor analyzed. (Crossan)

Response 218: It was noted in section 2.13-2.5 of the DEIS that in addition to the discrete noise receptor sites analyzed, construction noise levels for each shift of the worst-case period for each phase of construction at each connection site were calculated for wide areas surrounding the sites, and are shown in noise contour maps in Appendix 2.13. This section of the DEIS also noted that the selected noise receptor sites are all in residential areas or locations, which are representative of other sensitive noise receptors in the immediate study areas. Finally, in the discussion of the analysis of results, a summary of whether a particular receptor was representative of other residences in the study area was provided in the DEIS. For example, in the conclusions results for Receptor 1E, the DEIS noted that it is representative of residential locations along River Road North and Old State Road north of the east connection site.

Comment 219: The future without the project noise levels for the road corridors that may be impacted by commutation and truck traffic have not been predicted (1.3.14.2 paragraph 1). The future without the project noise levels were not compared to the Project 1 noise levels to identify the relative changes in noise levels. (1.3.14.3 paragraph 1). (Crossan)

Response 219: For noise receptors along roadways, the minimum measured existing noise levels were employed for the future without the project, which is a conservative assumption. Since these measurements include baseline traffic, only the project incremental traffic was required as input to the modeling.

Comment 220: The DEIS did not follow the *CEQR Technical Manual*. (Technically these are also Scope deficiencies, since the Scope constantly referred to the *CEQR Technical Manual*; however, since these comments are more technical in nature we have grouped them separately. The FEIS needs to provide an explanation and/or response to each item.)

a. *Noise Exposure Guidelines recommended by DEP are expressed in terms of … daily L_{dn} for rail sources* (page 19-5). It should be noted that there are approximately 21 Amtrak trains, 44 Metro-North trains and an unknown number of freight trains that pass by the site Monday to Friday. There are fewer trains on the weekends. This should be considered in the analysis because they contribute to the existing noise levels to which impacts are compared. Or alternatively, all noise monitoring should have been paused during train passbys. The rail noise definitely contributes to the noise levels at the receptors monitored, and this contribution varies by proximity of the receptor to the railroad. For example on 24 January 2012, MACK monitored an L_{max} of 72 dBA at Chelsea and Liberty (about 700 feet from the railroad) and 104 dBA at a house between River Road and the railroad (about 25 feet from the railroad). The existing noise monitoring data was all collected at sites that ranged in distance from the railroad of 600 feet to over 3,000 feet. The contribution of rail noise to the monitored ambient values was not noted or discussed. In fact the one and only time that the word railroad was mentioned in the noise section, was to say that railroad noise can be modeled in CadnaA. The FEIS needs to eliminate the contribution of rail noise to the existing ambient. The *CEQR Technical Manual* offers the following guidance with respect to train noise (which were not followed in the DEIS):

- *At locations where rail noise is a significant noise source, the number of trains passing by during the measurement period should be recorded, and if possible, the number of cars on the train should be noted. (page 19-14)*
- *If noise from a rail facility or aircraft becomes audible during the measurement program, measurements should be suspended until that sound is no longer audible. Where these noise sources are of concern, they are calculated rather than being measured because of extreme variability in measured data from these sources. (pages 19-14 to 19-15)*

In the very limited noise monitoring and field observations conducted by MACK there were several occasions where the noise levels were raised by jet and propeller airplanes and noise monitoring had to be paused. On one occasion a very noisy helicopter flew up the Hudson River. During these types of events (which are in frequent measure because of Stewart

International Airport across the river in Newburgh) the noise monitor should also have been paused.

The bottom line is that rail and aircraft noise should have been excluded from the existing ambient monitored values and they were not for at least the 12- hour and 24-hour monitoring which represents 97 percent of the noise data in the DEIS. It is not clear whether the 20-minute noise monitoring was properly conducted. Thus, 97 to 100 percent of the noise monitoring conducted cannot be used for either impact assessment purposes, or mitigation compliance monitoring comparisons because of the improper inclusion of rail and aircraft noise. There are other problems with the data as detailed in Comment 237 (Crossan)

Train noise is not addressed nor is aircraft noise. (Horan)

Response 220: The methodology employed for the DEIS followed the Final Scope of Work. The comment fails to recognize that the cited sections of the *CEQR Technical Manual* further state that the rail/aircraft noise should be modeled with and without the project in the final impact assessment. In cases where these parameters are not expected to change with the project, such as is the case for the proposed project, it is standard practice to include background rail and aircraft that are representative of normal conditions in the affected study areas.

Comment 221: It should be noted that receptor sites should generally include all locations where significant impacts may occur. Therefore, if significant impacts are identified during the analysis, additional receptor sites, sometimes farther from the noise source than the distance suggested in these guidelines, may have to be added to the analysis (page 19-11).

Otherwise, it is necessary to extend the analysis to the farthest receptor where no significant impact is found.—page 19-12. (Crossan)

Response 221: The DEIS analyses did extend the analysis locations beyond those identified in the Final Scope of Work, and based on the results of the analyses undertaken for the DEIS. The DEIS noise analysis calculated noise over a wide area around each connection site for each shift of the worst-case period for each phase of construction. The DEIS also provided discrete results near the east connection site at additional locations beyond those included in the Final Scope of Work. All significant impacts were described in the DEIS.

Comment 222: Existing noise levels are lower at receptors further from River Road. In 3 minute monitoring periods at about 8pm on 6 February 2012 we monitored L_{eq}s of 37 dBA at the Chelsea Ridge Apartments overlooking

the site, at the intersection of Chelsea and Liberty, and at the Stenger Court cul-de-sac. The L_{10}s were 38 dBA. The Gilboa Dam Reconstruction EA monitored nighttime existing noise levels in a similar community that ranged from 33 to 38 dBA. Thus, based on anticipated nighttime noise levels in the mid-30s, receptors should be placed out to at least the 40 dBA contour. Since the *Technical Manual* clearly states that receptors should be placed out to the limits of potential significant impacts, additional receptors are clearly required. (Crossan)

Response 222: Pursuant to standard practices recommended and employed by numerous New York State agencies for SEQRA and as suggested in the *CEQR Technical Manual*, measurements of at least 20 minutes in duration are suggested for evaluating 1-hour equivalent noise measurements. Three-minute measures are not representative for determining L_{10} or L_{eq} noise levels of 1 hour. Comparing measurements from the Gilboa Dam construction area with the east connection site is not an appropriate methodology since the surrounding areas are significantly different. Measurements were undertaken in the project study area, and additional ambient noise measurements were taken at the Stenger Court cul-de-sac for the FEIS, which supported the conservative worst-case assumptions (ambient noise level) employed for the DEIS.

Comment 223: Noise measurements should be made in accordance with the expected times that the proposed activity at the site would be greatest, or when surrounding receptors may otherwise be most likely to experience significant impacts because of the proposed project. While this generally occurs for most projects during the peak typical weekday traffic hours (i.e., the AM, midday, and/or PM peak periods), this may not be appropriate for some projects and it may be necessary to gather data during weekend, late night hours, or for all 24 hours. …Traffic data collection should be coordinated with the noise studies to ensure that, where necessary for analysis purposes, traffic data is available for late night, weekend, and/or all 24 hours. Traffic data collection should be conducted in accordance with the methods described in Chapter 16, "Transportation." Vehicular trip assignments and their hourly distribution should be defined before the hours for noise analysis are determined. Care must be exercised in selecting the noise measurement period and, as detailed information about a project is developed, it may be necessary to supplement initial noise measurements by including additional time periods.—page 19-14 Noise monitoring was not conducted at a sufficient number of receptors as discussed in Comment 221 and was not done for appropriate time periods. The weekend, evening and nighttime especially

needs additional monitoring. Further details on this point may be found in Comment 245.

While each of the noise measurements is being taken, events that contribute to the monitored values should be noted. At locations where traffic on the adjacent street is a significant noise source, a traffic counting and classification program should be conducted that records the following: total vehicles; total number of buses; total number of heavy trucks; total number of medium trucks; and total number of passenger vehicles or light trucks.—page 19-14. This was certainly not done for the 12-hour and 24-hour noise monitoring data. Thus, 97 percent of the noise monitoring conducted occurred with no concurrent traffic counts, or pauses for trains or airplanes (Comment 220, or notes regarding environmental noise sources (birds, wind in trees, etc.). This reinforces the fact that the noise monitoring conducted cannot be used for either impact assessment or mitigation compliance monitoring comparisons.

To arrive at the No-Action noise condition, the results of the No-Action traffic analysis (see Chapter 16, "Transportation") are used to compute total Noise PCEs passing each receptor site. From the existing and No-Action traffic data, existing and No-Action Noise PCEs are calculated in the following manner (see Subsection 331.2 under "Other Activities During the Conduct of the Noise Measurements" for definitions of vehicle types):

- Each Automobile or Light Truck: 1 Noise PCE
- Each Medium Truck: 13 Noise PCEs
- Each Bus: 18 Noise PCEs
- Each Heavy Truck: 47 Noise PCEs—page 19-16

The *CEQR Technical Manual* directs that for traffic noise analysis comparisons the project modeled traffic noise is compared to the future without project traffic noise, not the monitored existing noise levels. Thus, the impact assessment for the traffic noise was not based on the proper comparison. (Crossan)

Response 223: The noise monitoring data collection plan followed the Final Scope of Work and employed procedures that are well-accepted methodologies for lead agencies under SEQRA and CEQR. As noted in other responses, since proportional screening analyses of traffic were not necessary, and only the project-generated incremental traffic during each construction shift (7 AM to 3 PM, 3 PM to 11 PM, and 11 PM to 7AM) was employed in the modeling, the baseline noise levels from traffic for all hours were

conservatively included in the background noise levels employed in the DEIS.

Comment 224: However, the FHWA Traffic Noise Model (TNM) should be used for the following situations: (page 19-15)

- *Analyzing conditions that result in new or significant changes in roadway or street geometry*; Not Applicable
- *Roadways that currently carry no or very low traffic volumes are involved*; Yes, this is definitely true.
- *Ambient noise is the result of multiple sources including traffic*; or Yes, this is true in the vicinity of the site.
- *A detailed analysis of changes due to the traffic component of the total ambient noise levels is necessary*. Yes, this is definitely true.

The conclusion to be drawn from the *CEQR Technical Manual* guidance is that TNM should have been used for the offsite noise analysis and modeling.

The DEIS uses CadnaA for the traffic noise modeling. However, page 19-16 of the *CEQR Technical Manual* states:

Upon verification by FHWA that these algorithms produce results comparable to the TNM model, they (referring to CadnaA) may be used for CEQR analysis.

Since CadnaA has NOT been verified by FHWA this should be clarified in the FEIS. It is interesting to note that Gilboa Dam Reconstruction EA used CadnaA for the construction noise modeling and TNM for the roadway noise modeling. (Crossan)

Response 224: The CadnaA model was suggested as the appropriate model for mobile sources in the Draft Scope of Work. No comments related to the use of this model were received during the comment period on the Draft Scope, and this scope element remained unchanged for the Final Scope of Work. In addition, CadnaA is considered the most suitable model for the DEIS for several reasons. First, DEP had previously undertaken comparative studies of modeling incremental truck traffic and determining incremental noise predicted from TNM versus CadnaA, and the results of such were minimal differences between the models. This also substantiates using the model for trucks traveling on roads within the connection site, as well as and on roads in the communities. Also, it was considered desirable to assess the cumulative noise increments throughout the affected communities from both on-site and off-site construction noise sources to

provide the most conservative impact assessment. These contours are included in Appendix 2.13 of the DEIS. These contours could only be reasonably developed if both on- and off-site noise sources were simulated with the same model. Finally, based on the projected off-site noise levels, the predicted incremental noise levels from project-construction traffic at locations distant from the connection sites were in most cases significantly below impact thresholds, and no differences in conclusions would have resulted if the TNM model was employed.

Comment 225: Each mobile and stationary source analysis yields a maximum $L_{eq(1)}$ noise level. These values are logarithmically added to yield a total maximum-possible $L_{eq(1)}$ level.—page 19-20 The two must be reported separately before summing for two reasons: (1) so that an understanding regarding mitigations options exists; and (2) the method for assessing impacts is somewhat different.

Noise from equipment on-site is subject to a wider array of mitigation measures including: equipment substitution, individual source controls, additional barriers, activity location changes, and scheduling changes. Noise from traffic has a more limited array of mitigation measures which primarily relate to schedule. Changing truck routes may just move the impacts from one set of receptors to another set.

As explained above the future with project equipment noise is compared to existing monitored noise levels, while the future with project modeled traffic noise is compared with the future without project modeled noise levels.

Noise levels from construction may also be reduced through the use of perimeter noise barriers, temporary portable barriers, shrouds, shields, enclosures, etc. These path controls should be investigated where feasible. Absent information about specific equipment noise characteristics, the maximum values shown in Table 22-1 should be assumed—page 22-1. Low noise equipment has not been identified as a potential mitigation measure. A full range of other mitigation measures need to be evaluated as part of a sensitivity analysis. Reasons for deeming more effective mitigation as not practicable need to be explained. (Crossan)

Response 225: See other responses to comments about use of existing measurements and modeling of mobile source noise sources off-site. As part of the assessment of formulating noise control measures for construction of the proposed project, DEP did consider the feasibility of such measures as work hour restrictions. In addition, for each simulated construction scenarios based on the CadnaA modeling, DEP undertook evaluations of

the likely sources that would largely generate off-site noise source impacts to determine if additional control measures or specifications could be incorporated into the proposed project to minimize such impacts. To the extent they could be done for the DEIS and FEIS, these measures were implemented in the DEIS analyses, and will continue to be implemented during construction as outlined in the FEIS in the Conceptual Noise Mitigation Plan (Appendix 2.19-2).

Comment 226: If rerouting is not feasible, the most common mitigation measure used for vehicular noise impacts is to provide adequate window/wall attenuation at the affected receptor to conform with the Noise Exposure Guide-lines acceptable interior noise levels of 45 dB(A) $L_{10(1).}$ When maximum hourly exterior levels are greater than 70 dB(A), alternate means of ventilation should be incorporated into buildings so that windows do not need to be opened at any time of the year. If windows were open, the effect of the window-wall attenuation would be reduced. An alternate means of ventilation would allow for a closed window condition, ensuring that acceptable interior noise levels are achieved.—page 19-24. While this language refers to housing that the applicant controls the same thoughts and concerns exist at the existing homes. Do the existing homes have an alternate means of ventilation? The FEIS should describe the measures and their implementation to insure that any homes that need replacement windows or air conditioning to achieve an interior noise level of 45 dBA L_{10} are provided those improvements. (Crossan)

Response 226: Section 2.19, "Mitigation," of the FEIS has been revised to include additional measures for locations expected to be subjected to significant adverse noise impacts from construction of the proposed project. The Conceptual Noise Mitigation Plan (Appendix 2.19-2) provides a summary of the procedures that would be in place to ensure these mitigation measures are undertaken.

Comment 227: Except for special circumstances, construction activities be limited [*sic*] to weekdays between the hours of 7 AM and 6 PM—page 22-12. This means that construction activities between 6 PM and 7 AM, and on the weekend at any time should be subject to extra scrutiny and concern. (Crossan)

Response 227: Comment noted.

Comment 228: In general, alternatives to address impacts during construction are focused on alternative scheduling of construction phases that can serve to alleviate impacts—pp. 22- 14. The schedule shown in the DEIS and appendices includes two major gaps (one 14 months and the other 20 months) with

little or no activity in Wappinger. The FEIS should address the feasibility of eliminating some to Shift 2 or 3 activities and stretching out the Shift 1 activities. (Crossan)

Response 228: In response to comments raised on the DEIS, DEP has undertaken additional evaluations and has determined that based on the anticipated schedule at the time the FEIS was completed, DEP would be able to restrict work hours for inundation plugs (during Phase 3: Bypass Tunnel Excavation) at the east connection site to 7 AM to 7 PM, which would reduce noise levels after 7 PM during this construction phase.

Comment 229: The guidance in the *CEQR Technical Manual* with respect to construction impacts seems quite clear. Where the duration of construction is expected to be short-term (less than two years), any impacts from such short-term construction generally do not require detailed assessment. However, there are instances where a potential impact may be of short duration, but nonetheless significant, because it raises specific issues of concern (page 22-1 Definitions). Further, construction activities be limited [*sic*] to weekdays between the hours of 7 AM and 6 PM (page 22-12). Thus, extra scrutiny of construction activities in other times periods are completely justified. This includes Shift 2 work after 6 PM, all of Shift 3, and any weekend work (i.e., all three shifts). There is no language that says that noise impacts that occur for a period less than two years cannot be a significant impact. In fact the opposite is true, as the *CEQR Technical Manual* on page 22-13 says:

In general, the determination of the significance of construction impacts is based on the same criteria as described for each relevant technical area of this Manual.

Thus, if the noise increases during construction exceed the noise impact criteria they are significant impacts whether they last one month or seven years. However, an understanding of the duration of the noise impacts is important and should be clarified in the FEIS. (Crossan)

Response 229: The determination of the potential significant adverse noise impacts was based on the detailed assessments provided in Section 2.13, "Noise." Following SEQRA and *CEQR Technical Manual* guidance, the determination of the significance of impacts from construction activities in the DEIS was based on an explicit assessment of the predicted intensity, duration, and the geographic extent of the impacts. A detailed discussion of the evaluations and considerations for each phase of construction was provided for all noise receptors locations in the DEIS, and has not been changed in the FEIS.

Comment 230: The noise Scope is not specific enough. The Scoping document only addressed alternatives and mitigation in general terms; however, once it was clear that there very significant adverse noise impacts that cannot be fully mitigated, additional efforts to minimize impacts by adjusting the site plan and evaluating additional mitigation measures. (Crossan)

Response 230: The noise impact assessments employed for the DEIS followed the Final Scope of Work. Extensive efforts were undertaken for the DEIS to evaluate reducing noise impacts, and these efforts would continue to be implemented throughout the construction of the project from its initiation to completion. A Conceptual Noise Mitigation Plan with additional details is included in Appendix 2.19-2.

Comment 231: The location of Shaft 6B is in a poor location from a noise perspective. It is very close to the easterly property line. The land to the south of Shaft 6B is at a lower elevation, making it more difficult for noise barriers to be effective. The FEIS should discuss the feasibility of other locations, including those that would involve relocation of some of the site improvements. More specifically the lack of feasibility of locating the shaft closer to the Hudson River in a location where the noise impacts could be more easily mitigated should be addressed. (Crossan)

Response 231: DEP undertook a rigorous evaluation of the siting of Shaft 6B on the east connection site. The proposed Shaft 6B location at the east connection site was determined based on the subsurface conditions, existing infrastructure, the need to reduce risk to the existing tunnel during construction, the surface topography of the site, and accessibility of the shaft during construction.

Comment 232: Noise mitigation measures and processes should have been addressed in greater detail. The following items should be addressed: (i) A sensitivity analysis should be done with CadnaA raising the heights of all of the noise barriers one at a time to evaluate the effectiveness of raising them. (Other projects under CEQR have used higher noise barriers: New York City Western Rail Yard, 15-foot perimeter barriers; and Jerome Park Reservoir, 20-foot barriers.) (Crossan)

Response 232: These types of evaluations were undertaken before the DEIS was finalized, in consultation with the Town of Wappinger. The noise barrier heights at which noise levels would no longer be materially reduced by further increasing barrier heights are the proposed heights in the DEIS and FEIS.

Comment 233: The effectiveness of extending the Conex trailers further in each direction should be modeled with CadnaA. (Crossan)

Response 233: Based on comments received on the DEIS, DEP re-examined the potential extension of noise barriers on-site. Additional areas for extending fixed barriers were developed and are noted in Section 2.13, "Noise," and Appendix 2.19-2, which will be included in the site plan application submitted after the FEIS is completed.

Comment 234: The use of other interior barriers that could be moved by phase to be as close as possible to the noise sources should be modeled with CadnaA at various heights. (Crossan)

Response 234: Such measures would be required as part of the Conceptual Noise Mitigation Plan (Appendix 2.19-2); however, the benefits of such were not included in the CadnaA modeling.

Comment 235: These sensitivity runs should be presented and discussed for each phase by text, table and graphics in the FEIS.

The noisiest pieces of equipment per phase should be discussed individually, since they will be the generator of the L_{max}. The individual piece that generates the L_{max} could vary by direction from the site. This discussion should include equipment specific mitigation discussions.

The FEIS should provide a breakdown of the truck trips by purpose and discuss how truck trips can be minimized in the latter portion of Shift 2 and all of Shift 3. (Crossan)

Response 235: The sensitivity assessment for noise reduction measures was an interactive process undertaken by DEP that occurred over a 1-year period, and involved many interrelated discussions of potential restrictions on construction activities/phasing, along with evaluations of discrete on-site measures (such as noise barriers). The presentation of all options and assessments is beyond the scope of what can be included in the FEIS. However, these considerations would continue as required by the Conceptual Noise Mitigation Plan (see Appendix 2.19-2).

Comment 236: Peak noise levels are intrusive and are a major concern, especially in the evening and at night. This is acknowledged in SEQRA Guidance (see Item 4b) and was the subject of substantial public comment. While the *CEQR Technical Manual*, which is designed for a far more urbanized area, does not include L_{max} as a noise criterion, the SEQRA guidance gives the flexibility of selecting numerical standards. Other major construction projects (for example the Central Artery project in Boston) have

established not to exceed L_{max} limits. In order to allow the Planning Board to complete its SEQRA review the FEIS should present L_{max} contours around the site for the phases of construction. (Crossan)

I would like to know what the peak noise impacts are and so we can totally understand what they are as opposed to averaged out over the course of an hour. (B. Anderson)

L_{max} criteria are important to controlling infrequent jolting noises. (Horan/Roberts)

Response 236: The Draft Scope of Work suggested that where and when appropriate, the L_{10} and 1-hour equivalent ($L_{eq(1)}$) noise levels would be examined. No comments were received on this element of the Draft Scope of Work, and the Final Scope of Work did not change for this element. These two parameters have been employed for impact assessment by numerous lead agencies subject to SEQRA and CEQR. While L_{max} may be a method for monitoring of construction upon start of work, it is not a useful parameter for impact evaluations, and development of such contours would not yield useful information for impact assessment or proposed mitigation. In the Conceptual Noise Mitigation Plan, monitoring of L_{max} levels associated with construction would be a requirement to support control impulsive noises from construction.

Comment 237: Issues with the existing monitoring data:

a. There are a variety of issues with the existing monitoring data. Some are issues of presentation. They include:

   i. Lack of clarity with respect to the exact location that monitoring occurred. The graphic in the DEIS had insufficient reference details and an error in locating Receptor 2E. Figures should be included that show the exact monitoring location and the house that it is representative of.

   ii. Not all monitoring data was presented. There was some monitoring that was performed for which the results were not included in the DEIS or appendices.

b. Some relate to the fact that the noise levels reported are not representative of the receptors specified or of the time period. For example:

   i. Receptor 1E – Monitoring was conducted at an unknown distance from River Road. There were no concurrent traffic classification counts or notation of noise sources that contributed to the noise levels.

ii. Receptor 1E – The values reported for Shift 2 actually appears to be from 11 PM to midnight, not 10 PM to 11 PM.

iii. Receptor 2E – Monitoring was conducted 8 feet from Chelsea Road. The habitable portions (i.e., not including front porches) the homes are 25 feet or more from Chelsea Road. Thus the noise levels monitored are 4 to 6 dBA higher than at the homes on Chelsea Road (the receptors that the location is intended to represent).

iv. Receptor 2E – The 20-minute period that was to be representative of Shift 2 was taken at 4:17 to 4:37 PM. During this 20-minute period there were five heavy trucks and three medium trucks, which generated a very high L_{eq} (64.2 dBA). That amount of truck traffic is very anomalous for that time period, and would be totally unexpected for the evening hours of Shift 2 when only light duty vehicles are on the road. The 64.2 dBA L_{eq} was 4.1 dBA higher than for Shift 1 and 5.1 dBA than any other reading at the Shift 2 monitoring. The reading is clearly anomalous and should not have been used.

v. Receptor 3E – Monitoring was conducted at an unknown distance from River Road. There were no concurrent traffic classification counts or notation of noise sources that contributed to the noise levels. The predominant reported source is purportedly River Road, the same as for Receptor 1E; however, the Shift 1 values are 2.5 dBA higher, the Shift 2 values 5.1 dBA higher, and Shift 3 values 4.1 dBA higher. These differences should be explained.

vi. Receptor 4E – This receptor at 30 Cobblestone Road is adjacent to the lowest traffic road, yet has higher values than at Receptors 5E and 7E during Shift 1 and higher values than Receptor 7E during Shift 2. The source of the noise levels at Receptor 4E should be identified. (Crossan)

Response 237: The monitoring program undertaken for the DEIS followed the Final Scope of Work and procedures employed by numerous lead agencies with projects subject to SEQRA and CEQR. CadnaA files, which included all raw data and information related to the monitoring locations and modeling, were supplied to the Town of Wappinger noise consultant, and numerous meetings were held with the Town of Wappinger staff and consultants. These additional files included the requested information in the comment to the extent they are a comment on the modeling results.

Comment 238: As noted in Comment 220, the 24-hour and 12-hour monitoring data (and potentially the 20 minute data) is fatally flawed by not pausing when either trains or aircraft are audible. In addition, in the FHWA Highway Traffic Noise: Construction Noise Handbook it states "it is equally important to exclude infrequent noise events such as lawn mowing, neighborhood construction activities, shouting, loud radios, etc." (Crossan)

Response 238: See other responses related to trains/aircraft during monitoring. Infrequent noises during monitoring did not have any effect on the conservative impact evaluations performed for the DEIS.

Comment 239: Page 2.13-12. The DEIS uses inside building reductions of 12 dBA for an open window and 24 dBA based on a 35-year-old EPA document. However, the Noise Exposure Guidelines For Use in City Environmental Impact Review specify nighttime L_{10} dBA limits of 55 dBA exterior and 45 dBA interior. That 10 dBA reflects the generally accepted value of a 10 dBA reduction through an open window. Further, the *CEQR Technical Manual* states on page 19-20:

Typical construction techniques used in the past (including single glazed windows) provide a minimum of approximately 20 dBA of noise attenuation from outdoor to indoor areas.

This yields the values that MACK uses in our analysis – 10 dBA reduction with windows open and 20 dBA with windows closed. However, this DEIS DEP has used a 35-year-old EPA reference to justify reductions of 12 dBA and 24 dBA, which artificially lowers the inside default noise levels by 4 dBA in the windows shut scenario. Further, the FHWA Report, Highway Traffic Noise: Analysis and Abatement Guidance, December 2011, states in Table 6 that the noise reduction rate due to the exterior of the structure with windows open is 10dB, and for light frame construction and ordinary sash closed is 20 dB. The footnote to the table says, "The windows shall be considered open unless there is firm knowledge that the windows are in fact kept closed almost every day of the year." (Crossan)

Response 239: The DEIS applied conservative projections of impacts on the nearby communities. As shown in Appendix 2.19-2, the Conceptual Noise Mitigation Plan includes measures that would be made available to residences considered to be adversely impacted by noise as a result of construction at the proposed project. The EPA reference of a 12 dBA reduction is valid for assessment purposes. However for the FEIS, a 10 dBA reduction for interiors of home adjacent to roadways suggested in the FHWA reference was employed. In the same table of the FHWA

document referenced in the comment, a 25 dBA reduction would be attributable to light frame construction with storm windows. The noise analyses for the FEIS considered that windows could be opened all year long. As a result of such, receptor control mitigation was identified for homes near the connection sites, as shown and discussion in section 2.19-2, "Noise Mitigation."

Comment 240: After page 2.13-12. Figure 2.13-3 shows Receptor 2E in an incorrect location. Without any other features on the figure it is not possible to verify that Receptor 4E is in the correct location. (Crossan)

Response 240: The DEIS figure accurately depicted the location of receptor 4E. Figure 2.13-3 in the FEIS shows receptor 2E in the correct location.

Comment 241: Page 2.13-16 indicates that the monitor's distance from the roadway was measured, but the distances were not included in the DEIS, appendices, or supplemental material supplied. (Crossan)

Response 241: The supportive CadnaA files supplied to the Town of Wappinger noise consultant included this information.

Comment 242: Page 2.13-18. The FEIS should explain how the "path control" measure in the first bullet on page 2.13-18 will be implemented. The Shaft 6B site is fixed near the easterly property line, and there are no options for positioning concrete trucks, cranes, etc., away from sensitive receptor locations as the statement would have the reader believe. (Crossan)

Response 242: Appendix 2.19-2, the Conceptual Noise Mitigation Plan, includes an outline of how path control measures would need to be employed on-site.

Comment 243: 2.13-29. The extensive issues with Table 2.13-14 are discussed at length in Comment 237. (Crossan)

Response 243: Comment noted.

Comment 244: After page 2.13-30. Figures 2.13-8 through 2.13-12 are difficult to interpret. Due to their schematic nature with no labels. Specifically:

i. The noise barrier in Figure 2.13-8 along River Road may have some basis in fact. The full length barrier along River Road on Figures 2.13-9, 10, 11, and 12 appears to be an oversimplification (and introduces an unwarranted bias in favor of DEP).

ii. It appears there are internal noise barriers that are not shown.

iii. It appears the noise sources are shown as blue squares on Figures 2.13-9, 10, 11, and 12, but no blue squares are shown from the center and north (and beyond) of the noise barrier. Noise sources to match the locations of proposed construction activities shown on other figures and on the (separate submittal) site plan should be modeled. The noise study must be revised to model all construction noise sources, including, for example, such features as shaft ventilation equipment, noise sources from work to drill the pump shafts and inundation plugs, and operations at the soil stockpile and at the welding shop.

iv. The noise sources in the figures should be labeled and those with additional source controls or enclosures identified. (Crossan)

Response 244: The supportive CadnaA files and noise backup supplied to the Town of Wappinger noise consultant included much of the information requested. The likely locations of equipment by phase were developed in consultation with experienced tunnel engineers. Internal noise barriers/shrouds were not included in the modeling. Since issuing the DEIS, the site plan has changed to include noise barriers that match the locations of construction activity around Shaft 6B. Additional fixed noise barriers for the east connection site have been included in the FEIS, and the respective figures have been updated for the FEIS.

Comment 245: Monitoring recommendations:

a. An entirely new monitoring program needs to be developed and implemented. There are at least three purposes: (1) establish the most conservative (i.e., lowest) existing conditions throughout the area of potential significant impacts (i.e., a 5 dBA increase during Shift 1, or a 3 dBA increase in Shift 2 or 3); (2) monitor peak hour values for a comparison to verification modeling using TNM (or CadnaA) to compare the monitored and modeled existing conditions at receptors adjacent to River Road, Chelsea Road, and potentially 9D; and (3) monitor at a variety of time periods to establish existing conditions where future compliance noise monitoring will occur. These are discussed separately below in more detail.

b. The noise monitoring to document the potential worst case noise impacts will involve the most number of receptors because the largest area of coverage is needed. Monitoring at these sites could be focused on the quietest noise periods in each shift. For example:

- Monday to Friday Shift 1 – 10 AM to 11 AM
- Monday to Friday Shift 2 – 10 PM to 11 PM
- Monday to Friday Shift 3 – 2 AM to 3 AM

- Weekend Shift 1 – 7 AM to 8 AM on Sunday

All of these periods could be expanded so that each monitor could be used at four or five sites per time period. Thus, two monitors on one occasion (of one monitor on two occasions) could cover 10 receptor locations.

c. The noise monitoring for the TNM verification should be at receptor sites along River Road and Chelsea Road. One each during the peak AM and PM peak travel times would be sufficient. In the FHWA Highway Traffic Noise: Construction Noise Handbook it states:

   i. "If the predominant source in an area is traffic (e.g., receptors on Chelsea or River Road far from the site)…the only purpose of performing noise measurements being related to noise model verification or calibration." Neither verification nor calibration was reported as being done in the DEIS, and should be included in the FEIS.

   ii. "Should the predominant existing noise sources be non-transportation related activities, noise measurements may be the only reliable means of establishing background noise levels." This is true for most of the homes east and south of the site including the Chelsea Ridge Apartments. See item "b" above and "d" below.

d. The monitoring to document the baseline for comparison to future compliance monitoring needs to be discussed further. Not all sites in the worst case analysis will be needed for the compliance monitoring comparison. However, a wider range time periods should be monitored. Since the worst case monitoring was looking for the lowest readings they are not representative of all times during the shift in question. For example, a future monitored noise level at 4 PM during Shift 2 could not be fairly compared to the worst case (lowest) existing monitored from 10:40 PM to 11:00 PM. Thus, additional time periods at other times of each shift should be monitored for these receptors. Nighttime compliance may be determined at bedroom windows, so the possibility of baseline noise monitoring at second floor windows needs to be considered, discussed in the FEIS, and incorporated if appropriate.

In the FHWA Highway Traffic Noise: Construction Noise Handbook it states as a footnote to Table 7.2 that:

L_{10} noise compliance readings are averaged over 20 minute intervals. L_{max} noise compliance readings can occur instantaneously. Baseline noise conditions must be measures and established prior to construction work, commencing in accordance with the noise specification, which requires

baseline noise readings over three 24-hour periods at each receptor lot-line location.

Obviously FHWA guidance is not mandatory for this project, but the FEIS should address how the intent of this FHWA guidance will be achieved.

e. As can be seen from the above discussions there is a complexity to assessing potential impacts now and in the future. The chart below shows the different combinations of activity levels and impact criteria.

Weekdays					Weekends			
Shift 1	Shift 2			Shift 3	Shift 1	Shift 2		Shift 3
7am-3pm	3pm-6pm	6pm-10pm	10pm-11pm	11pm-7am	7am-3pm	3pm-10pm	10pm-11pm	11pm-7am
5 dBA increase			3 dBA increase		5 dBA increase		3 dBA increase	
Normal construction hours with daytime exposure criteria								
Outside normal construction hours with daytime exposure criteria								
Outside normal construction with nighttime exposure criteria								

The Shift 1 only that operates Monday to Friday is the standard construction day and evaluation on construction noise impacts is relatively straight forward. Unfortunately as can be seen in the chart below that is only the case for 19 percent of the time.

	1 shift			2 shifts			3 shifts			Total		
	5 days/ week	7 days/ week	Total	5 days/ week	7 days/ week	Total	5 days/ week	7 days/ week	Total	5 days/ week	7 days/ week	Total
Months	13	4	17	39	0	39	7	6	13	59	10	69
% Total	19%	6%	25%	57%	0%	57%	10%	9%	19%	86%	14%	100%

Shift 2, which is the most complex to analyze because of the three different conditions encountered, is employed 76 percent of the time.

f. Monitoring data collected during current site activities should be presented in the FEIS. (Crossan)

Response 245: The Conceptual Noise Mitigation Plan (see Appendix 2.19-2) includes an element for additional noise monitoring before the start of construction at each connection site.

Comment 246: Modeling recommendations:

a. Add receptors to see how much reduction is achieved by Conex trailers and compare to Croton monitored results. Adjust model as, and if, necessary. The issue of the effectiveness of the Conex trailers in this configuration is a concern. It should be confirmed that the use at Croton had a similar curved installation.

The FEIS should include a detailed engineering analysis of the "double stacked storage containers" noise curtain (Conex trailer barrier) to

demonstrate its effectiveness. The report should analyze the sound pressure losses (dBA attenuation) from the barrier, preferably by reference to studies of similar barriers. (Crossan)

Response 246: As noted in other responses, evaluations were undertaken to determine benefits of path controls. Documented benefits from such trailers were provided to the Town of Wappinger noise consultant, and are also included as Attachment 1 to Appendix 2.19-2. In addition, the Conceptual Noise Mitigation Plan would monitor noise levels during construction.

Comment 247: The report should present a design that addresses and resolves the following concerns:

i. To be effective, a noise barrier must be continuous.

- There must be no crack, hole, gap or other discontinuity that would allow sound to pass. Stacking the containers, butting the containers end to front, placing the containers point to end, and placing the containers on a variable grade (that creates open vees top to bottom or bottom to top) all have the potential to disrupt the barrier continuity. The FEIS should discuss the proper installation of the trailers.
- Sound will propagate from the end of a stiff barrier, and appear to travel around the end of a barrier, so the barrier must be long enough to fully shield a receptor from the end of barrier "noise source". At the south end, the "double stacked storage containers" noise curtain should be effectively tied to the noise curtain on the CLF (a detail should be provided). At the north end, the noise barrier must be extended northward to fully protect work operations at the proposed soil stockpile, and the clanging and banging at the welding shop.

ii. To be effective, the materials in the noise barrier must absorb, not transmit, sound.

- A noise barrier must absorb sound energy rather than transmitting it. This can be achieved by, for example, mass, such as the heavy concrete segments in highway noise barriers. It can also be achieved by some foams or by filamentous materials and small cavities, such as used in sound absorption blankets.
- The walls of the proposed storage containers, by contrast, are thin metal and will transfer sound energy from one side to the other. Except for the minor mechanical losses due to inertia and internal friction in the thin metal skins (essentially diaphragms), the sound energy will be

transmitted from one wall to the other and into the environment on the far side of the barrier.

- Based on the proposed grading shown on the separate submittal site plan, the in-line boxes will not butt together end to front, and instead there will be open vees that will provide no sound attenuation.
- Whatever attenuation is achieved by the "thickness" of the barrier is also completely absent at the four bends in the line of boxes, where they are placed point to end. At those junctions there is no sound attenuation.
- The FEIS should discuss these factors.

iii. The analysis of the noise barrier must also consider its stability under high winds, and the noise generation from the side panels (essentially drum heads) during wind gusts.

iv. The analysis of the noise barrier must consider the heights of the noise sources from construction equipment and construction operations on the westerly side. The barrier must be high enough to fully shield all exhaust and equipment noise from the second stories of any nearby (and upgradient) houses. (Crossan)

Response 247: The Conceptual Noise Mitigation Plan (see Appendix 2.19-2) notes that integrity, maintenance, and appropriate measures would be required for all construction phases. It also places limits on the amount of acceptable construction noise from the proposed project.

Comment 248: Model existing on-site activity using CadnaA and compare to monitored values at multiple receptors. (Crossan)

Response 248: This was not required for the DEIS or FEIS. Lowest measured background values near the connection site were employed. On-site construction at either connection site did not affect conservative background values employed in the DEIS.

Comment 249: Model existing traffic noise using TNM (or CadnaA) and compare to monitored data. (Crossan)

Response 249: See response on how incremental traffic was conservatively modeled for the DEIS. This effort was not required.

Comment 250: Model the second floor windows at the 5 receptors closest to the site for all phases to document whether or not formal receptors need to be added there. (Crossan)

Response 250: No material predicted noise levels changes were determined between the first and second floors at the nearest five receptors.

Comment 251: Model L_{max} and present L_{max} contours for all shifts and phases. (Crossan)

Response 251: See Response to Comment 236. Comparison of present L_{max} and modeled L_{max} is not an accepted methodology for impact evaluations. While L_{max} may be a method for monitoring of construction upon start of work, and is incorporated into the Conceptual Noise Mitigation Plan, it is not a useful parameter for impact evaluations, and development of such contours would not yield useful information for impact assessment or proposed mitigation.

Comment 252: A tabular comparison should be presented of the sound power levels used in CadnaA and they are consistent with the maximum L_{max} levels L_{max} in the Technical Manual should be presented [*sic*]. Data on low noise optional equipment should also be presented. The *CEQR Technical Manual* states on page 22-11:

Guidance on quieter available construction equipment and quieter construction procedures is provided in DEP Notice of Adoption of Rules of Citywide Construction Noise Mitigation, as well as from the equipment manufacturers.

The benefits of quieter available equipment should be also modeled, and results presented and discussed in the FEIS.(Crossan)

Response 252: The Conceptual Noise Mitigation Plan (see Appendix 2.19-2) would ensure that the proposed program's noise control measures are designed to decrease to the maximum extent practical the amount and duration of elevated noise levels at nearby sensitive receptors. Noise level limits required by the New York City Noise Control Code for construction equipment are included in Appendix Table 2.19-2-1. Pursuant to NYC Administrative Code §24-216(b), Projects 1 and 2B would be performed in accordance with title 24, chapter 2 of the New York City Administrative Code (the Noise Control Code) and the New York City DEP Rules for Citywide Construction Noise Mitigation.

Comment 253: Model quieter equipment, additional equipment specific mitigation, taller barriers, additional barriers and operational changes. Present and discuss results. Discuss why additional measures are not practicable. (Crossan)

Response 253: As part of the evaluations in the DEIS, DEP did examine multiple heights for fixed barriers, and the barrier locations/heights proposed in the FEIS

represent the configuration that are expected to result in the maximum effectiveness of reducing noise impacts from construction-related activities. See Response 90 related to studies of such undertaken for the DEIS and implementation with the Conceptual Noise Mitigation Plan (see Appendix 2.19-2)

Comment 254: Add many more receptors so that the potential impacts are better depicted. (Crossan)

Response 254: See Response 218 on receptors already included for DEIS and in noise contours of Appendix 2.13.

Comment 255: Use TNM, or CadnaA, all the way to 9D. (Crossan)

Response 255: See Responses 217 and 220 on TNM comments and local roadway noise impact assessments.

Comment 256: Present PCE screening results for several worst case evening and night scenarios on 9D (model with TNM, or CadnaA when approved, if PCE increase is greater than 100 percent). (Crossan)

Response 256: See Response 217 on off-site mobile source noise impacts. This additional effort was not required.

Comment 257: Impact assessment recommendations regarding the FEIS:

a. Identify in the body of the report the potential impacts at all potentially impacted residences by time of day or weekend based upon the mitigation package proposed in the DEIS. This should also be done for the final mitigation package proposed in the FEIS to document the enhancements added to further mitigate noise;

   i. This includes the number and location (i.e. by tabular summary and map) of all residential receptors that will exceed existing nighttime Leqs by more than 3 dBA or daytime L_{eq}s by 5 dBA (the CEQR criteria for significance);

   ii. This tabulation and mapping would include all receptors out to at least the 40 dBA L_{eq} contour from the site and the roads out to Route 9D;

   iii. This should include those segments of Route 9D, if any, that fail the Shift 2 or Shift 3 noise PCE screening analysis (which needs to be included);

iv. At a similar level of detail L_{max} from the site needs to be mapped. (Crossan)

(I will reiterate some important points that Brook [Crossan of MACK Associates] has made regarding) determination of significant impacts. (Horan)

Response 257: The DEIS provided a tabular summary and detailed discussions of the potential noise impacts by construction phase, and how discrete locations modeled would be representative of areas within the respective communities. With respect to traffic screening of mobile source noise, see other responses on off-site noise impact assessments and detailed modeling performed for the DEIS. See also other responses for L_{max}. L_{eq} contours were provided in Appendix 2.13 of the DEIS.

Comment 258: Describe the noise mitigation process that will be implemented for the life of the project. See Comment 291 below.

The comparison of modeled noise levels to the Noise Exposure Guidelines (Table 19-2 in the *CEQR Technical Manual*) the following corrections should be made [*sic*]:

i. The correct adjustment factor from L_{eq} to L_{10} is +3. As reported in the user manual FHWA, construction noise model (RCNM)(p.15), "empirically derived from extensive Central Artery data" this is the correct relationship, not the -3 dB used in the DEIS.

ii. This adjustment will increase the L_{10} values by 6 dBA in all locations.

iii. The interior noise levels should be decreased by 20 dBA with the windows closed, not the 24 dBA used in the DEIS.

iv. This adjustment will increase the interior L_{10}s by another 4 dBA.

v. The combined correction is to add 10dBA to the interior modeled L_{10}s.

vi. When applying this 10 dBA correction, there are two receptors, 7e and 8e, that exceed the interior standard of 45 dBA on some Shift 3 occasions, with projected noise levels of 47.0 and 48.3, respectively.

vii. The location and number of homes that exceed the 45 dBA with windows closed and with windows open should be mapped and tabulated in the FEIS. (Crossan)

Response 258: L_{10} values for the impact assessment were developed by adding the project noise increment to the measured L_{10} values at each receptor. Since some locations have very low traffic volumes, the rule of thumb of adding 3 dBA to the L_{eq} would not be appropriate. Similarly, appropriate attenuation values were employed in the DEIS assessment for the

windows closed. Section 2.13 of the FEIS includes an additional figure to depict locations that are predicted to experience temporary significant adverse impacts. As part of the Conceptual Noise Mitigation Plan (see Appendix 2.19-2), receptor controls (noise reduction methods implemented at the receptor itself) would be available to residences predicted to experience significant adverse impacts.

Comment 259: I will reiterate some important points that Brook (Crossan of MACK Associates) has made:

- The Noise receptors selected by NYSDEC are along River Road and Chelsea Road. Noise measurements should be made at locations on Stenger Court, Skytop Drive, and Lake Drive to determine the background noise levels on quieter less travelled streets. The locations along River Road are not necessarily representative of the interior locations which are further from the train tracks and travelled town roads. (Horan and Horan/Roberts)

Response 259: Additional noise measurements were undertaken for the FEIS at Stenger Court. The lowest measured $L_{eq(1)}$ value at the end of the Stenger Court cul-de-sac was 41.5 dBA, compared to the minimum value of 42.6 dBA used in the DEIS. This difference of 1.1 dBA is well within the daily variability of sound level measurements, and confirms that the background values employed in the DEIS are conservative.

Comment 260: Exterior noise levels in the evening and at night are not addressed. Indicated at 55db L_{eq10} (Horan and Horan/Roberts)

Response 260: The DEIS provided a detailed assessment and description of the existing noise levels and predicted noise impacts by construction phase for all time periods, including evening and overnight work. In addition, see receptor controls discussed in Appendix 2.19-2, the Conceptual Noise Mitigation Plan of the FEIS.

Comment 261: Appendix 2-13, "Noise," contains a table and photographs only, with no accompanying text. The appendix should be expanded to include a discussion of proposed mitigation measures and acreages, as well as a justification for proposed disturbances. (Ballard)

Response 261: Appendix 2.19-2, the Conceptual Noise Mitigation Plan, includes details on how to mitigate construction noise. No additional land clearing or land disturbance of sensitive natural resources would be required to implement the noise mitigation plan. Minor areas of the perimeter of the site, which

would have required a security fence during construction anyway, would be modified to allow for the installation of the fixed noise barriers.

Comment 262: The FEIS should include a detailed engineering analysis of the "double stacked storage containers" noise curtain (Conex trailer barrier) to demonstrate its effectiveness. The report should analyze the sound pressure losses (dBA attenuation) from the barrier, preferably by reference to studies of similar barriers. The report should present a design that addresses and resolve the following concerns:

1. To be effective, a noise barrier must be continuous.
    a. There must be no crack, hole, gap or other discontinuity that would allow sound to pass. Stacking the containers, butting the containers end to front, placing the containers point to end, and placing the containers on a variable grade (that created open vees top to bottom or bottom to top) all have the potential to disrupt the barrier continuity.
    b. Sound will propagate from the end of a stiff barrier, and appear to travel around the end of a barrier, so the barrier must be long enough to fully shield a receptor from the end of barrier "noise source". At the south end, the "double stacked storage containers" noise curtain should be effectively tied to the noise curtain on the CLF (a detail should be provided). At the north end, the noise barrier must be extended northward to fully protect work operations at the proposed soil stockpile, and the clanging and banging at the welding shop.
2. To be effective, the materials in the noise barrier must absorb, not transmit sound.
    a. A noise barrier must absorb sound energy rather than transmitting it. This can be achieved by, for example, mass, such as the heavy concrete segments in highway noise barriers. It can also be achieved by some foams or by filamentous materials and small cavities, such as used in sound absorption blankets.
    b. The walls of the proposed storage containers, by contrast, are thin metal and will transfer sound energy from one side to the other. Except for the minor mechanical losses due to inertia and internal friction in the thin metal skins (essentially diaphragms), the sound energy will be transmitted from one wall to the other and into the environment on the far side of the barrier.

c. Based on the proposed grading shown on the submittal site plan, the in-line boxes will not butt together end to front, and instead there will be open vees that will provide no sound attenuation.

d. Whatever attenuation is achieved by the "thickness" of the barrier is also completely absent at the four bends in the line of boxes, where they are placed point to end. At those junctions there is no sound attenuation.

3. The analysis of the noise barrier must also consider its stability under high winds, and the noise generation from the side panels (essentially drum heads) during wind gusts.

4. The analysis of the noise barrier must consider the heights of the noise sources from construction equipment and construction operations on the westerly side. The barrier must be high enough to fully shield all exhaust an equipment noise from the second stories of any nearby (and upgradient) houses. (Gray)

Response 262: Comment noted. Data on the proven reduction in noise levels from containers, such as those proposed for the east connection site, were provided to the Town of Wappinger, and are included as Attachment 1 to Appendix 2.19-2. Field studies on the effectiveness of containers were undertaken by DEP under other capital construction work, which documented that such containers provide 15 to 17 dBA of attenuation depending on the configuration of the noise source, the barrier, and the noise receptor. The Conceptual Noise Mitigation Plan (see Appendix 2.19-2) presents information on the types of measures (such as those suggested in the comment above) that would be implemented through all phases of construction.

Comment 263: The description of the noise receptors should be revised in the FEIS to include a statement of where the SPL measurement was taken. A measurement taken near ground level (5- to 6-foot instrument height per page 2.13-17) will not be indicative of noise at an upper level bedroom. Sound/noise should be measured both in the yard areas and at higher elevations on the houses. (Gray)

Response 263: Section 2.13, "Noise," of the DEIS provided a summary of locations and heights where baseline noise measurements were undertaken. Monitoring was undertaken at locations of public (or DEP) access and could not be conducted at upper-level floors of residences off-site. These measurements are intended to provide representative noise levels at these locations. For noise monitoring during construction, monitoring would be performed as outlined in the Conceptual Noise Mitigation Plan (see Appendix 2.19-2).

Comment 264: The FEIS should explain how the "path control" measure in the first bullet on page 2.13-18 will be implemented. The Shaft 6B site is fixed near the easterly property line, and there are no options for positioning concrete trucks, cranes, etc., away from sensitive receptor locations as the statement would have the reader believe. The second and third bullets make believable statements. (Gray)

Response 264: Comment noted. The Conceptual Noise Mitigation Plan (see Appendix 2.19-2) includes a section on path controls.

Comment 265: The noise study should address the following concerns:

1. The noise barrier in Figure 2.13-8 along River Road may have some basis in fact. The full length barrier along River Road on Figures 2.13-9 to 12 appears to be an oversimplification (and introduces an unwarranted bias in favor of DEP).
2. It appears there are internal noise barriers that are not shown.
3. The noise barrier locations do not appear to change as shown on the (separate submittal) site plan, but are invariant on the Figures 2.13-9 to 12.
4. It appears the noise sources are shown as blue squares on Figures 2.13-9 to 12, but no blue squares are shown from the center and north (and beyond) of the noise barrier. Noise sources to match the location of proposed construction activities shown on other figures and on the (separate submittal) site plan should be modeled. The noise study must be revised to model all construction noise sources, including, for example, such features as shaft ventilation equipment, noise sources from work to drill the pump shafts and inundation plugs, and operations at the soil stockpile and at the welding shop.

The FEIS should be expanded to include an analysis of the shaft ventilation equipment. Typically fans would be used, and they may be significant noise sources at the ventilation air intake. The ventilation exhaust air may also be a noise source (as well as an odor source as noted in comments in Section 2.11). (Gray)

Response 265: Comment noted. The noise study for the DEIS did take into account all major anticipated construction elements, which would likely vary by phase, and the equipment required by ventilation in the modeling. The comment is correct in noting that internal barriers, such as noise curtains around fixed equipment, are not shown in the figures. The figures depicting the final expected locations of fixed noise barriers along the property line have been revised for the FEIS to reflect the updates to these

elements in the forthcoming revisions to the site plan application after the FEIS is completed. The likely fans required for shaft ventilation were included in the noise analyses reported for the DEIS.

INFRASTRUCTURE

Comment 266: The following comment addresses two separate SPDES permit types, individual and general permits: the individual SPDES permit for industrial wastewater discharges and the current version of the general permit coverage for stormwater discharges from construction activities Note that any discharge to the Hudson River, or other waterbody, must not contravene narrative water quality standards which require that there be "no visible contrast" upstream or downstream from the point of discharge.

SPDES General Permit for Stormwater Discharges from Construction Activity

- It should be anticipated that the construction phase of this project will be more complex than a typical construction project. The proposed erosion and sediment control plan needs to be developed specific to the site and planned activities. The SWPPP needs to expand the list of practices on page 2.14-11 to address the construction phase runoff effective and as needed.
- If different components of the stormwater general permit, such as SWPPP or erosion sediment control plans, are intended to be prepared throughout various phases of the project development, it would be more appropriate for the document to reference current stormwater general permits. If the numeric effluent limitation guidelines go into effect prior to plan submittal, the permit requirements and SWPPP may need to be modified to address such requirements.
- Dewatering discharges associated with groundwater are covered under the current construction general permit. Such discharges generally need settling due to turbidity. The technologies commonly used for this purpose (e.g., settling, filtering) are addressed in the Standards and Specifications for Erosion and Sediment Control document. However, the use of chemicals (e.g., flocculants), although still addressed under the Construction General permit, requires submission of a Water Treatment Chemical (WTC) Usage Notification form for each chemical proposed for treatment. The evaluation of such chemical usage is not performed by MS4 communities. Rather, WTC forms are submitted to NYSDEC directly as part of the permit application

process. Note that if the presence of any contaminants in the dewatering discharge is suspected, and treatment is therefore necessary, such discharges must be permitted.

- The SWPPP for this project will be reviewed by two municipalities under the municipal separate storm sewer system (MS4) general permit; the Town of Newburgh and the Town of Wappinger will each be responsible for review and approval of the proposed SWPPP for that portion of work proposed within each respective town. Following plan approval, the municipality will issue a SWPPP Acceptance Form. A completed Notice of Intent form, SWPPP, and the SWPPP Acceptance Forms must be submitted to NYSDEC during permit application review.

Individual Permit for Industrial Wastewater Discharges

- The project identifies settleable solids, total suspended solids, oil and grease, and pH as parameters of concern for effluent monitoring. If any activities in the course of the project involve discharges from existing shafts, pipes, or infrastructure that may have potential mercury contamination, this parameter (mercury) should be included on the NY-2C permit application form and effluent limitations may apply.
- The plan correctly identifies the need for addressing industrial discharges from a proposed concrete batch plant on the west connection site. However, considering that an individual SPDES permit will be issued, the requirements of the multi-sector general permit (MSGP) for this activity should be included in the individual permit, rather than treated separately. Stormwater discharges from this industrial activity will be similar to the plans required by the MSGP and should be addressed as a component of the NY-2C application.
- The plan must clearly define whether any additives or chemicals are proposed for use during boring operations and which may be present in the muck from shaft construction or bypass tunnel construction activities. If such activities introduce new agents (flocculants or naturally occurring minerals such as dolomite), safe levels of concentration for each constituent may need to be evaluated and a WTC may need to be submitted.
- NYSDEC is currently reviewing DEP's pilot study for leak stabilization by chemical application. It is not clear at this point whether this methodology will eventually be used in one of the phases of tunnel reconstruction and repair. If, as a result of this study, this

method of stabilization will be proposed for future phases of this project, DEP should include and discuss the use of such techniques in the long term plan. A full scale application of such techniques will require additional review and may require additional permitting. (Ballard)

Response 266: The comments are noted and have been largely addressed in recent submissions to NYSDEC and the Towns, as follows. A SPDES NY-2C permit application for industrial wastewater discharges (i.e., individual permit application) was submitted to NYSDEC Region 3 in January 2012 for the proposed dewatering facilities at the west and east connection sites. Notices of Intent (NOI) for coverage under SPDES General Permit 0-10-001 and SWPPPs for the west and east connection sites were submitted to NYSDEC and to the Towns of Newburgh and Wappinger, respectively, in February 2012. Final SWPPPs will be submitted to the Towns as part of their site plan approval processes, and upon receipt of the Towns' SWPPP acceptance forms, final NOIs for both sites will be submitted to NYSDEC. Likewise, final SPDES NY-2C applications for industrial wastewater discharges will be submitted to NYSDEC based upon technical comments from NYSDEC on the initial application. Note that the concrete batch plant will be constructed and operated under Project 2B, and details of its operation have not been included in the current version of the SWPPP and NY-2C application for Shaft 5B. Once a design of the batch plant has been completed DEP will work with NYSDEC and the Town of Newburgh, as appropriate, to include such information as part of modifications to the Shaft 5B SWPPP and individual industrial discharge permit to ensure necessary permitting of batch plant related stormwater and industrial discharge activity.

Comment 267: The DEIS underestimates the adverse effects this project will have with regard to stormwater discharge, both runoff from the proposed denuded 22.5 acres of land that is on steep slopes and water discharge from the tunnel that is being dug. Having knowledge about the soils involved, they are very draughty, which is not so good for water retention and increases the incidence of erosion. Further, at the bottom of the hill is a Class C stream in which silt and eroded material could flow to and ultimately to the Old Mill House Historic Site and mill pond and dam.

With the massive movement of dirt and blasted rock to create a flat shelf to operate the boring machine and ancillary services, this area may not be very stable and could slide down the hill. From personal experience, when working at Benmarl Vineyards in the mid-1970s (which is about 1 mile north of the proposed construction site along the same ridge with the same

geological characteristics), earth-moving machines carved terraces along the steep slopes in that hill to establish a vineyard. Unfortunately, due to heavy rains in 1973 and 1974, the hillside became very unstable and the entire hill side needed to be re-terraced again. As described in the DEIS, more soil and rock will be removed and reconfigured than which occurred at Benmarl Vineyards, hence the danger may be even more likely to occur. (Casscles)

Response 267: A project-specific SWPPP has been prepared in accordance with the Town of Newburgh and NYSDEC regulations and standards for management of stormwater runoff, soil erosion, and sediment control on-site. The site design includes stormwater collection, conveyance, and retention facilities that would detain the stormwater runoff peak flows to match pre-developed conditions and protect water quality within the on-site Class C stream. In addition, rock cores and other subsurface investigations were incorporated into site design to ensure the stability of rock and earth slopes.

Comment 268: How will water in the holding pond for rain runoff and dewatering of the tunnel be circulated to reduce the heightened risk of mosquito breeding and West Nile virus? How will the water be released to comply with the Clean Water Act? The DEIS is not specific about the possibility of stagnant water accumulating at the water retention pond or on other parts of the site. Stagnant water will lead to the breeding of mosquitoes which can adversely affect adjoining properties and may lead to the increase of mosquito disease vectors that carry West Nile virus and other mosquito borne illnesses. The DEIS does not discuss at all how water in the retaining pond at the bottom hill will circulate to reduce the number of mosquitoes that will breed. Increasing the number of mosquitoes could increase the incidence of West Nile virus, other mosquito-borne diseases, and reduce the enjoyment of the outdoors due to insect pests. (Casscles)

Response 268: The stormwater basin design and selection of plantings would minimize the potential for mosquito breeding.

Comment 269: Overall, the DEIS conclusions on page 2.14.21 grossly minimize the significant adverse impacts this project will have on water supply, waste water, and stormwater runoff. It is my hope that the consulting engineers hired by the Town of Newburgh will be able to make helpful suggestions to help mitigate these very serious flaws in the DEIS. (Casscles)

Response 269: The DEIS conclusions on the potential impacts on water supply, waste water, and stormwater were developed after extensive evaluations. Since

the issuance of the DEIS, DEP has continued to work with the Town of Newburgh representatives and consulting engineers.

Comment 270: Section 2.14 provides some of the information requested regarding treatment and discharge of dewatering discharges and stormwater runoff. However, the description does not clearly describe each, and further the description does not appear to match the site layout shown on the (separate submittal) site plan. A SWPPP is required for the stormwater component, and perhaps in conjunction with the SWPPP the treatment and discharge of all water (except sanitary wastewater) from the site will be better described. (Gray)

The SWPPP must address each phase of construction, and also consider the review comments from this office regarding the (separate submittal) site plan. (Gray)

Response 270: A draft SWPPP was submitted to the Town of Wappinger after completion of the DEIS, which considered comments raised on the initial site plan application. A revised site plan application consistent with this SWPPP will be submitted to the Town of Wappinger after issuance of the FEIS.

Comment 271: It appears the existing sand filters may not be fully available, as appears to be anticipated from the narrative summary of the water discharges in this section of the DEIS. (Gray)

Response 271: Sand filters will remain on-line to treat existing drainage areas to them throughout the construction project. Inlet protection would be provided for existing inlets in these areas. Other temporary stormwater treatment practices, such as inlet protection, silt fence, and a temporary sediment basin would be installed to accommodate newly-disturbed and newly-developed areas. In post-construction conditions, the underground sand filter in the upper parking lot would be abandoned and permanently off-line due to removal of its treatment area (upper parking lot).

During Phases 3 and 4, the underground sand filter in the lower parking lot would remain in use to treat the undisturbed portion of its treatment area (lower parking lot). The proposed treatment plant would be installed in the lower parking area to capture runoff from the inundation plug work area. In post-construction conditions, the underground sand filter in the lower parking lot would remain on-line treating the stormwater runoff from the main driveway and associated impervious surface.

Comment 272: It appears stormwater is proposed to be treated to a higher standard (per individual SPDES NY-2C permit) than required per the typical general

permit GP-0-10-001 for stormwater discharges, if it will in fact be discharged via the existing DEP outfall from Shaft 6. (Gray)

Response 272: Stormwater runoff around the new shaft construction would be conveyed to a temporary sediment basin and discharged to the stormwater drainage network. During Phase 3: Bypass Tunnel Excavation and Phase 4: Bypass Tunnel Lining, Project 1 Demobilization, and Preparation for Project 2B, stormwater runoff on and around the inundation plug work area would be conveyed to the treatment system located on the existing parking surface. This higher level of treatment, while not required, was selected to be employed, because with the existing infrastructure, steep slopes, proposed retaining walls, and property boundaries, there is not sufficient area to provide treatment of sediment laden water in a sediment basin. Therefore the runoff would be collected and conveyed to the treatment plant. All discharges from the treatment plant would be conveyed to the existing DEP outfall from Shaft 6.

Comment 273: It appears some stormwater, shaft dewatering water, much dewatering water and truck wash water will all mix. The SWPPP must include an analysis of the sedimentation basin pretreatment for the sand filter. However, considering the long time needed for fines to settle out, and the fact that the basin will receive water continuously, it does not appear that the basin will remove many fines. The SWPPP must address maintenance of the sand filter, especially since it appears it may receive large quantities of silt and clay fines. (Gray)

Although a plant for the dewatering of excavated materials and muck is proposed on the west connection site, no further information is provided in the DEIS regarding proposed dewatering processes or operations.

How will dewatering be accomplished? What is the target moisture content and what degree of moisture removal do you anticipate achieving? Are any chemicals proposed to treat liquids or solids removed from the wet soils and muck? How will this material be transported? Will watertight trucks be necessary? Are engineering controls (such as truck tire water prior to leaving site) proposed to prevent tracking of loose materials? The FEIS should contain an expanded narrative which discusses the above. (Ballard)

Response 273: The construction contractor would be required to follow strict environmental controls for earthwork and rock excavation on-site as well as transport of materials off-site. Shaft dewatering water, muck dewatering water, and vehicle wash water would be conveyed to a dewatering treatment plant. The discharge from the dewatering treatment plant would

be covered under an Individual SPDES permit for industrial discharges from NYSDEC. Therefore, the temporary sediment basin would only treat stormwater runoff from land disturbance. The SWPPP submitted to the Towns of Newburgh and Wappinger after issuance of the DEIS addressed these issues.

Comment 274: The SWPPP must address measures to prevent Portland cement from concreting operations (including transportation, placing, cleanup, fresh mix disposal and truck washdown) from entering the stormwater drainage system. If Portland cement is suspended in water to be discharged via the sand filter to the DEP outlet, it appears special measures must be used to prevent it from entering the Hudson River, and such measures would not be detailed in the SWPPP but in a separate report on how the individual SPDES NY-2C permit effluent limits would be met.

The site stormwater control measures to prevent drilling fluid mud (potentially bentonite clay slurry) and water draining from cuttings at the drills for the pump shafts and inundation plugs should be detailed. It appears those discharges cannot be directed to the sand filter uphill and near Shaft 6/Shaft 6B. (Gray)

Response 274: At the east connection site, potential sources of Portland cement in runoff from concreting operations as noted in the comment, including discharges from the excavation of Shaft 6B as well as muck dewatering and vehicle washing activities, would be collected and piped to the proposed on-site package treatment system. The treated effluent would be conveyed through the existing blowoff chamber outfall to the Hudson River. The existing Individual SPDES Permit NY 0272663 for the blowoff chamber would be modified to include flow from the package treatment system. The water would be sampled and tested to ensure compliance with the permit requirements. The SWPPP submitted to the Town of Wappinger and the SPDES NY-2C permit application submitted to NYSDEC after completion of the DEIS addressed these issues. After completion of the FEIS, DEP will continue to work with NYSDEC and the Town of Wappinger to ensure consistency among permits.

Comment 275: The plan should clarify how discharge from the unwatering pump shafts will be routed to the blowoff chamber for Shaft 6, and in particular that the (assumed) pipeline would not interfere with construction traffic circulation. (Gray)

Response 275: The tunnel unwatering pumps and piping to the modified drainage system have been included in the SWPPP and account for the flows in the

design/modeling/analysis. The piping system has been designed to prevent interference with traffic.

Comment 276: The statement on page 2.14-21, that there "would be a net reduction in impervious area in the post-construction condition" should be clarified by presenting pictorial representations of the pre and post impervious areas. It appears that the statement may not be correct since a new driveway will remain to serve the capped Shaft 6B area where that land is now pervious surface cover. (Gray)

Response 276: Several figures and a table in Section 1 of the SWPPP, which was submitted to the Town of Wappinger after completion of the DEIS, summarized the impervious surface coverage pre-construction, in all phases of construction, and in post-construction, demonstrating that there would be a reduction of impervious surface coverage. Total impervious surface in the post-construction condition is 2.73 acres, a reduction of 0.91 acres from the impervious conditions (3.64 acres) for the latest approved SWPPP for the connection site.

Comment 277: The statement on page 2.14-21, "The existing stormwater management system would be utilized for conveyance where feasible" implies that additional stormwater management system features will be required. The complete drainage proposal shall be analyzed in the project SWPPP, phase by phase, and then upon final completion. (Gray)

Response 277: The SWPPP submitted to the Town of Wappinger after completion of the DEIS addressed these issues. The stormwater management system is evaluated through each major phase of construction as required by the New York State Stormwater Management Design Manual.

Comment 278: Details of the proposed rain garden (page 2.14-21) should be provided, including expected contributing flows, overflow, garden sizing, and plants. Is it the same, or different, than the "tree pits" noted on page 2.14-22? (Gray)

Response 278: The SWPPP submitted to the Town of Wappinger after completion of the DEIS addressed these issues. A bioretentoin basin, in lieu of a rain garden, is proposed in the final phase of construction. Design calculations and design drawings were provided in the SWPPP.

PUBLIC HEALTH

Comment 279: The DEIS does not accurately reflect, in toto, the cumulative significant adverse effects this project will have on the public health of the residents of the Town of Newburgh. The combination of decreased air quality (diesel and other fumes, concrete mixing, dust generated from construction), noise (blasting, construction machinery, trucks, etc.), light (floodlights operating throughout the night), and possible reduction in the flow and quality of groundwater makes this project a very significant public health problem for the Town of Newburgh.

Public health consequences will include:

1. higher incidences of asthma and other respiratory diseases, especially for the vulnerable young and very old. These respiratory conditions will remain with local residents long after this project is completed 10 years from now.
2. lack of quantity and quality of sleep due to nighttime noise and lights (which will suppress resident immune systems) and increase irritability.
3. a possible compromise of ground water supplies for local residents.

While the DEIS maintains that these adverse consequences are merely temporary, the adverse health effects on local residents will be lifelong. (Casscles)

Response 279: Sections 2.17, "Public Health" (Project 1) and 4.2 "Probable Impacts of Physical Construction" (Project 2B) provided evaluations of the potential impacts on public health from proposed program construction. As noted in other responses to comments, DEP would undertake an aggressive approach to monitoring and protecting groundwater supplies of residents during the entire construction period.

MITIGATION

Comment 280: Section ES-5.1 should be clarified. Work or scheduling of work in accordance with established permit requirements or agency regulations is not project mitigation. The decision regarding tree clearing times is not project mitigation. It is a federal requirement per regulations implementing the Endangered Species Act. (Gray)

On page 2.1-1 and in the last line of page 2.19-1, the seasonal cutting of trees is not mitigation, but rather is required to implement federal

regulations regarding "taking" species. The FEIS should resolve all instances on all pages regarding this measure. (Gray)

Response 280: In developing the proposed project's construction elements, DEP concurrently considered potential impacts of such work elements and their resulting environmental impact consequences. The DEIS noted work practices that DEP would specify in its contracts more stringent than those directly mandated by law or regulation. In the example of tree cutting, in consultation with state and federal agencies, DEP resolved that the best practice to minimize impacts would be to implement tree cutting scenarios that minimize impacts to threatened and endangered species and migratory birds; however, neither the DEIS or FEIS refers to this practice as "mitigation," rather it is a project component implemented to reduce potential impacts.

Comment 281: This section of the DEIS outlines the summary of mitigation measures that will be implemented to reduce the systemic and widespread adverse effects that this project will have on the residents of the Town of Newburgh. Unfortunately, since the DEIS, in many ways minimizes the significant adverse impacts that will occur because of the project-related impacts to neighborhood character quality, transportation, noise, traffic, lighting, air pollution, and ground water supply and quality, the DEIS suggests mitigation measures that do not adequately address the problems and hardships that will be created by this project. (Casscles)

Response 281: The DEIS undertook extensive evaluations of potential impacts during construction. DEP included measures to reduce such impacts whenever feasible as part of the proposed project's design and construction. However, even with such measures included, the DEIS noted the areas where temporary significant adverse impacts would still be expected during construction of the proposed project.

Comment 282: Probable Impacts of Project 1: Shaft and Bypass Tunnel Construction, Mitigation (page 2.19-2): Should visual impacts of proposed landscape be discussed in community character section? (Arent)

Response 282: The DEIS determination, which was not changed for the FEIS, addressed changes in the visual character of the project site as a result of construction. As discussed in the "Neighborhood Character" section of the DEIS (Section 2.3), the changes to the site's visual character during Project 1, would occur primarily as a result of the tree clearing and grading required for the construction of the new site driveway and shaft on the west connection site. The commercial character of the study area and the site's location along a busy arterial roadway, with relatively high

levels of truck traffic, would diminish the effects of the Project 1 construction activity within the study area. Although the site would transform from a largely wooded and undeveloped parcel with several unoccupied structures into a partially cleared site with landscaping, no significant adverse neighborhood character impacts would occur.

Comment 283: The applicant has provided an analysis with mitigation for three signalized intersections for the morning peak hour and four signalized intersections in the afternoon peak hour. The mitigation includes signal optimization and possible upgrading of traffic signal controllers and detectors. The following are areas of concern where the mitigation should be considered:

1. Route 9D at Old State Route (North Intersection) for Scenario 2—In the weekday afternoon there is an increase in delay of 31.9 seconds for the eastbound left and right movements.
2. Route 9D at Alpine Drive—The v/c ratio for the eastbound left and right turn movements during the weekday afternoon increase from 1.51 to 5.38 during all three scenarios. This is considered a significant adverse impact. (Stolman)

Response 283: The increases in delay are not a result of the proposed project, but are due to conservative projections in traffic growth from the existing to no build conditions. No additional traffic from the proposed project would be added to the Alpine Drive segments noted in the comment.

Comment 284: The mitigation measures for traffic impacts described in Section 2.19-4 primarily consist of shifting a few seconds signal time from one phase to another. We are not convinced that these signal timing adjustments will resolve the expected traffic impacts. The signal timing adjustments should be coordinated with NYSDOT-Region 8 staff. In addition, changes to road geometry may be needed. In particular, we suggest consideration of a southbound right-turn lane or pocket on Route 9D at Chelsea Road. (Dozier)

Section 2.19-4, page 2.19-12. The proposed mitigation measures for the traffic impacts associated with the project at the intersection of NYS Route 9D and CR 92 (Chelsea Road) and CR 34 (Baxtertown Road) consist solely of signal retiming. Discussion of the proposed mitigation should also include an analysis of safety and operational considerations associated with the volumes of truck traffic estimated in connection with the project. If CR 92 is to be used as the sole route for all trucks accessing the east connection site, consideration should be given to construction of a dedicated southbound right turn late at this location to separate slow-

moving right-turning trucks from vehicles continuing south on Route 9D. (Kelley)

Response 284: The proposed mitigation measures were developed in consideration of the numerous transportation impact assessment parameters, including safety and operational considerations with the construction generated traffic from the proposed project. As the FEIS was prepared and continuing afterwards, traffic signal improvements are being actively coordinated with NYSDOT. It is anticipated that a real time (adaptive/progressive) traffic signal system will be installed at all intersections where impacts have been identified. These types of signal systems can adjust signal timings (offsets, cycle lengths, and splits) incrementally based on real-time traffic volume information, which would better optimize signal performance. Subsequent to the issuance of the DEIS, DEP met with NYSDOT representatives to discuss the proposed mitigation measures, such as those presented for the west of Hudson study area. DEP has reached general agreements with NYSDOT on the types of upgrades at the impacted intersections that DEP will fund, and gained concurrence from NYSDOT that these measures will mitigate the temporary significant adverse impacts from Project 1 construction traffic. However, while the intersection of Route 9W and Fostertown Road would benefit from upgraded controllers and detectors funded by DEP, this intersection would still have an unmitigated predicted temporary significant adverse impacts from Project 1 and 2B.The conservative analyses presented in the DEIS did not show a necessity for a southbound right turn or pocket lane from Route 9D at Chelsea Road because the majority of construction vehicles would arrive and depart to the south, and, therefore, this was not suggested at this location.

Comment 285: The Roadway Pavement Monitoring described on page 2.19-14 should be supplemented. We suggest that pavement core samples be taken at several locations, particularly along Chelsea Road, to determine the strength and condition of the existing pavement. Evaluation of the existing pavement should be conducted in accordance with the AASHTO *Guide for Design of Pavement Structures* and the NYSDOT *Comprehensive Pavement Design Manual*. The condition of drainage culverts along Chelsea Road should also be investigated. Based on the findings, upgrades to the pavement and drainage should be implemented before the project to enable the system to better withstand the anticipated construction-related traffic. (Dozier)

Section 2.19-4, page 2.19-14. The roadway pavement monitoring proposed in connection with the project is insufficient to determine the

structural capacity of CR 92 (Chelsea Road) and other roadways proposed for use as the truck route for the east connection site. In addition to the pavement monitoring, an evaluation of the existing pavement on CR 92 should be conducted in accordance with the AASHTO *Guide for Design of Pavement Structures* and the NYSDROT *Comprehensive Pavement Design Manual,* including cores at several locations to determine the thickness and condition of the existing pavement. The condition of any drainage culverts along Chelsea Road should also be investigated. Based on the findings, any structural deficiencies in the pavement or drainage structures should be addressed prior to the start of construction at the east connection site. (Kelley)

Response 285: With or without construction of the proposed project, the section of Chelsea Road discussed in this comment is a local roadway that will continue to accommodate local truck traffic for not only uses such as the Marina and lumberyard in the East of Hudson study area, but also all local truck traffic, such as deliveries and garbage removal associated with the nearby residential communities. DEP is not the entity responsible for maintenance of Chelsea Road under existing conditions. While the analyses undertaken for the DEIS did not reflect the need for additional repairs to the local roadways before, during or after completion of construction of the proposed project, DEP has agreed to roadway pavement monitoring on local roads accessed by trucks for the east connection site. As noted in the DEIS, DEP would require its contractor to video record and assess roadway pavement conditions on both River and Chelsea Roads before Project 1 construction, and would conduct annual meetings after every winter with town and county roadway representatives to determine the need and make necessary pavement repairs as a result of Project 1 traffic.

Comment 286: There is no mitigation plan for adding geometric roadside protection for the proposed heavy vehicles (possibly guiderails). Locations of concern are: Chelsea Road between Thornacres Drive and Liberty Street; and Market Street between Broadway Avenue and Bank Street along the west side of the road. (Stolman)

Response 286: The analyses undertaken for the DEIS did not identify that the local roadways would not be able to accommodate ordinary truck traffic along these roadways. There already are a number of trucks (mostly trucks associated with the lumber yard near the east connection site) that currently travel this route, and the roadways in question accommodate these trucks. In addition, an examination of NYSDOT and Dutchess County data revealed no high accident locations along the route that

indicated the need for geometric roadside protection Grade changes near these locations were further examined in the time period between the DEIS and FEIS, and the need for geometric roadside protection would not be required. However, as noted in section 2.19-4, "Traffic Management Plan," DEP would inform the pertinent stakeholders of the time and dates of any exceptional truck activity (oversized/weight transport of loads) and coordinate with the appropriate entities to ensure safe and efficient traffic operating conditions on the roadways in the area.

Comment 287: When proposing mitigations where a PIL exists, safety must be balanced with operational concerns (capacity, LOS, signal function, etc.). This is particularly applicable at the interchanges of Route 9D/I-84 and Route 9W/I-84 where studies and crash pattern countermeasures have demonstrated such an approach. When developing the signal timing and upgrade mitigations, the crash patterns should be identified and considered. (Sassi)

Response 287: Comment noted.

Comment 288: Consultant inspection of improvements within the state right of way will include inspections/assessments of mitigations with NYSDOT. (Sassi)

Response 288: Comment noted.

Comment 289: It is my hope that controls will be instituted to minimize construction noise at the (west connection) site and for trucks entering and leaving the site. One possible way to mitigate enhanced noise levels is retain as many trees and vegetation near the construction site as possible. Can the access road to the site be lined with evergreen trees? The DEIS is coy about the project sponsor's interest in quickly reforesting and planting of grasses, shrubs, and trees to provide a natural screen to muffle construction noises, diminish light emanating from the site, and as an erosion prevention measure. Trees over 12 inches in diameter, specifically, should be preserved at all costs to maximize the benefit of such vegetation screening, both for the natural environment and for the benefit of residents who live nearby. (Casscles)

Response 289: DEP has worked with the Town of Newburgh Planning Board consultants to develop an interim (Phase 1) landscape plan that would stabilize the manufactured slope and screen the site from views along Route 9W. A significant number of trees and shrubs would be added to the site during the Phase 1: Shaft Preparation, construction period to address the concerns of the Planning Board that landscaping not be limited to a site restoration

phase at the end of construction. Implementation of the suggested measures would not appreciably reduce off-site noise levels during construction.

Comment 290: The DEIS states that "The following additional measures, which go beyond typical construction techniques, would be implemented to the extent feasible as part Project 1:

1. To the extent practical, particularly noisy equipment, such as generators, cranes, trailers, concrete pumps, concrete trucks and dump trucks, would be positioned away and shielded from sensitive receptor locations.

2. Noise barriers would be used to provide shielding (e.g., 16-foot Conex trailer barriers at locations where particularly loud construction activities would occur near sensitive receptors).

3. Noise curtains or equipment enclosures would be used to provide shielding to sensitive receptor locations."

The FEIS should provide more detail regarding the above-mentioned mitigation measures and should explain why additional or different mitigation measures are not practical. Additional mitigation measures might include scheduling changes; the leasing or buying of impacted homes; additional or different noise barriers; the air conditioning of non-air conditioned homes in order to allow windows to be closed year-round, etc. (Stolman)

Response 290: The Conceptual Noise Mitigation Plan included in the FEIS in Appendix 2.19-2 addresses how noise reduction measures would be implemented throughout construction of the proposed project.

Comment 291: The mitigation plan and process:

a. Outline the mitigation plan;

b. Identify the noise elements to be included both in the bid documents, and in the contract to be awarded for construction. The more information that is available in the FEIS regarding noise mitigation the more information that can be included in the bid documents so the fewer surprises there will be for the winning contractor.

c. Clearly explain the process that will implement the Mitigation Plan;

   i. What will the ongoing monitoring requirements?

      - Parameters
      - Locations

- Frequency
- Complaint response
- Who conducts the monitoring?
- Explain how the performance based mitigation will be confirmed by the ongoing monitoring

ii. What will be the reporting requirement to the Mitigation committee and Planning Board

iii. Who will sit on the mitigation committee and how often should it meet?

iv. How will complaints be handled?

- All complaints should be recorded and logged
- Summaries of the logs should be prepared
- The summaries should be reviewed at least monthly to assess issues and mitigation refinement needs

v. Describe the public involvement plan. How and at what times will public notification be handled?

- Email?
- Mail?
- Newspaper articles
- Newsletters?

vi. How will the public have input?

- Public information sessions?
- Just the public hearing on the site plan?

vii. How will the plan be modified

- Potential for quieter equipment as technology changes
- Response to persistent complaints regarding specific activities
- Exceedances of L_{max} or L_{10} limits

viii. What is the process for residents to apply for and get replacement windows and/or air conditioning as appropriate?

- Establish criteria (use Central Artery as a start and modify as appropriate)
- Publish criteria
- Implement the program

ix. The Keyspan Energy project in Staten Island had specified, based on perimeter and off-site monitoring, established noise levels that would generate the need for "warning," "temporary halt," and "stop work" depending on noise levels that were monitored during construction. This process should be explained in the FEIS. (Crossan)

Response 291: The Conceptual Noise Mitigation Plan (see Appendix 2.19-2) provides an outline of the proposed methods for proactive and ongoing controls to reduce noise impacts from construction of the proposed project to the maximum extent feasible.

Comment 292: The (east connection) site now is horrendous. Noise barriers that are flopping in the wind, they have absolutely no impact to the noise off the site. They make what is a very nice, very quiet, river-view home sites look like they're living next to a junkyard. I will ask again that that site be planted so that at least from the road and the neighbors it looks to be well landscaped and well taken care of. There's no reason for us to be looking at those sound barriers along River Road and the construction happening either behind the building or down the hill. I ask for you to be a better neighbor, because right now you're not. (B. Anderson)

Response 292: A revised landscaping plan has been developed for the FEIS to include plantings along River Road, and additional features which will be included in the site plan applications submitted to the Towns of Wappinger and Newburgh after completion of the FEIS.

Comment 293: Regarding the return of the (east connection) site to its previous state, the previous state included no 12- to 15-foot- high fence. It was a beautiful pastoral setting with a grassy hill. Those of us who lived on the south side had views all the way up the northern portion of the Hudson River. That view shed has been cut off. I would urge that it be returned to us as soon as possible. We also urge the DEP to continue to try to be a good neighbor. This would include adequate maintenance of the property. Lawns do get mowed, but when the grass gets to be 18 inches between mowings, it is not the same as the rest of the properties on that street. It looks shabby. There's a space on the property that the DEP owns on our side of the fence that has never been maintained by anybody but us. (C. Smart)

Response 293: A revised landscaping plan has been developed for the FEIS, and the features of such will be included in the site plan applications submitted to the Towns of Wappinger and Newburgh after completion of the FEIS. DEP is committed to maintaining the Shaft 6 site property.

10.0-3.5 PROBABLE IMPACTS OF PROJECT 2A: WATER SUPPLY SYSTEM AUGMENTATION AND IMPROVEMENT

Comment 294: Who are the individuals, contact persons, department or division, and completion dates to assume direction and execution for the 5 major capital projects for the following: (1) Conservation measures, (2) Upper Catskill Aqueduct Operation, (3) Queens County Groundwater Rehabilitation, (4) New Jersey-New York City Interconnection, and (5) Nassau County Interconnection? What are the budgets for the above projects?

I had raised the question that there were no time frames for the completion in the presentation. I raise them again. What and when will there be DEIS presented for the above five items? (Bartosik)

Response 294: DEP will undertake a second EIS or a subsequent environmental review, as appropriate, to assess all potential impacts associated with Project 2A. This assessment is required before construction can begin on these projects, currently anticipated to be issued in 2014, and would include a schedule outlining the proposed project construction dates.

Comment 295: Has any information been collected regarding the effects upon groundwater and the Rondout Valley Aquifer during the last two incidents that the Rondout Reservoir experienced "depletion" due to drought conditions? This separate from "dewatering the tunnel." (Bartosik)

Response 295: DEP has not studied the relationship of Rondout Reservoir drought condition on groundwater levels in the Rondout Valley Aquifer below Rondout Reservoir, and does not believe that droughts are an impact associated with this project. Notably, DEP would not begin the aqueduct shutdown during a drought.

Comment 296: The proposed addition of chlorine at the Ashokan Reservoir to water which will eventually feed the Kensico Reservoir, a Class A protected body of water of New York State, raises concerns for the population of wild trout which inhabit the reservoir. Treated water entering the Kensico Reservoir (chlorination and dechlorination are proposed) must meet limits for all applicable water quality parameters (chlorine residual), turbidity, dissolved oxygen, temperature, etc.) and must not cause any harm to aquatic or benthic organisms. (Ballard)

Response 296: Comment noted. Should DEP advance the proposed addition of chlorine at the Ashokan Reservoir and removal before entering Kensico Reservoir it would be done in consultation with all applicable involved agencies and in

accordance with all applicable regulations in order to avoid potential impacts to fish, shellfish, wildlife, or on recreation in or on the water.

Comment 297: The DEIS limits its discussion of the tunnel shutdown to water supply augmentation for New York City, despite the statement in the introduction that the New York City distribution system provides 85 percent of the water used in Westchester County and 7.5 percent of the water used in Putnam, Orange, and Rockland Counties. The DEIS should specifically identify those customers that will be without water during the shutdown of the Delaware Aqueduct and the net impact the loss of this water supply will have on those customers.

The Town of Newburgh, similarly to New York City, will be severely impacted by the loss of the Delaware Aqueduct supply. Given the allowable shutdown schedule in the town's Water Supply Agreement with New York City, Newburgh has in general managed the short-term shutdowns requested by DEP by utilizing its Chadwick Lake Reservoir supply. At the time of approval for its connection to the aqueduct, NYSDOH required that Newburgh maintain a backup supply capable of meeting its average day demand under the assumption that the loss of the Delaware Aqueduct supply would most likely occur between October and April of any given year. The town has had to ask DEP to postpone one or two shutdowns requested during the summertime peak demands when Chadwick Lake Reservoir could not meet the system demands.

However, given the potential of a 15- or 16-month loss of the Delaware Aqueduct supply, the limitations of the town's backup supply to meet summertime demands will come to the forefront. The Chadwick Lake Reservoir and Water Filtration Plant alone are simply incapable of meeting the town's current summertime peak demand of between 4.5 and 5.0 mgd. With the shutdown projected to occur in 2020, demands in the system will increase with new construction, further exacerbating this problem.

The duration of the Delaware Aqueduct shutdown forces the town to look for additional excess water supplies it would not need under normal circumstances, forcing the Town to incur additional expenses on top of its current expenditure of $21 million for a new water treatment plant on its Delaware Aqueduct supply. The construction of the new bypass tunnel will force the town to expend funds for a 1-in-a-100-year contingency. Because of this, DEP should include augmenting the supply to Newburgh/Marlborough in its study of additional supplies. (Osborne)

Response 297: DEP acknowledges that the Town of Newburgh (and the town's wholesale customer, the Town of Marlborough) are connected to the Delaware Aqueduct and would be affected by the shutdown. As a result, DEP has begun discussions with town officials to determine whether Chadwick Lake can meet demands during the shutdown, what other backup water supply options the town has available, or if the town needs to develop additional back-up supplies for use during the aqueduct shutdown, and what those potential options for back-up may be. The effects to the town's water supply during the shutdown will be evaluated in the second EIS or a subsequent environmental review, as appropriate.

Comment 298: As the borough president for Staten Island, I read with great dismay that one of the options proposed for water supply augmentation during the bypass tunnel repair would be to isolate Staten Island from the New York City water supply system. In section 3.5-2.2 of the DEIS, DEP specifically details two alternative Staten Island scenarios, the second one being "*…to interconnect the New Jersey water supplies to Staten Island and isolating Staten Island from the rest of the city's distribution system…*" The idea that DEP would proposed cutting off one of the boroughs entirely from the city's water system and leaving Staten Island "*solely dependent*" on water supply—or during a drought, the lack of water—from private water companies in New Jersey is totally unacceptable.

If there is a need to augment the city water supply during the bypass tunnel repair project, then, as the first schedule in that section discusses, Staten Island should continue to be connected to the city's water supply at all times, with any additional supply being provided through the New Jersey augmentation pipeline. Completely cutting off Staten Island from the New York City water system for 5 years while the repairs are being conducted is, once again, unacceptable.

As the highest elected representative of almost 500,000 New York City residents and taxpayers, I thus respectfully demand that the second scenario be deleted from all further discussions in the FEIS. (Molinaro)

Response 298: Repairing the Delaware Aqueduct is a top priority and a vital project to ensure the long-term reliability of New York City's world-class drinking water system. It will require temporarily shutting down 50 percent of the city's water supply for between 6 and 15 months starting in 2020. For the duration of that time, the city may need to seek alternative water sources. The city will make full use of its oldest watershed in Putnam and Westchester; upgraded wells in Southeast Queens may come online; and new water sources from Long Island and New Jersey are being explored.

All of these options will meet all federal standards for drinking water quality.

The second EIS or a subsequent environmental review, as appropriate, will be evaluating the two potential water supply scenarios to obtain water from NJ. DEP's preferred option would maintain a continuous connection between Staten Island and Brooklyn water supply systems. If it is determined that there is a need to select the option using chloramination to treat the supply in Staten Island, valves would be need to be closed to separate the Staten Island and Brooklyn supply due to incompatibilities between chloraminated and chlorinated water. At all times DEP would have the ability to open the valve to reconnect the systems should an emergency dictate such a need.

Comment 299: Has DEP looked into the feasibility of reconstructing some parts of the old public artesian well system on the east shore/south shore of Staten Island to provide a supply of water for non human use during the aqueduct repairs? For such uses as fire suppression, landscaping watering via water trucks, and construction uses (e.g., cement mixing)? These are non-potable uses, although the water may still be potable.

The public artesian well system had a lot of capacity, if I recall correctly. I can remember a couple of locations of the wells along Hylan Boulevard.

See: Soren, Julian, Geologic and geohydrologic reconnaissance of Staten Island, New York: USGS Water-Resources Investigations Report 87-4048, 22 p., 4 pls. 1988. (Rooney)

Response 299: The use of groundwater in Staten Island was evaluated during early planning for the project, and was not viewed as a reliable backup system for use as drinking water. While individual wells are capable of providing water for specific locations and non-potable uses, as was done during prior droughts, developing a larger well system to provide a separate supply of strictly non-potable water for the island would likely be prohibitively expensive compared to other alternatives for augmenting the water supply to Staten Island currently being evaluated.

Comment 300: Re: flood effects from fuller or supercharged reservoirs. As noted in the DEIS Project 2B Bypass Tunnel, all diversions from the three New York City Delaware Basin reservoirs of Cannonsville, Pepacton, and Neversink must first pass through the Rondout Reservoir in the Hudson Basin. Therefore, during the 6 to 15 month period when the RWBT is shut down and no drafts for water supply will be made on the Rondout Reservoir in

the Hudson Basin, no drafts for water supply will be made from the Delaware Basin Cannonsville, Pepacton and Neversink reservoirs.

The DEIS, section 4.6-2, "Environmental Effects from Increased Reservoir Releases," states:

> "Unregulated increased discharges from the Delaware watershed reservoirs would have the potential to result in downstream flooding, erosion of stream banks, or other impacts on natural, cultural, or socioeconomic resources in the potentially affected downstream communities. Therefore, all additional reservoir releases would be controlled to remove the necessary flow from the Delaware watershed system, and minimize the potential for increased flooding, scouring, or other impacts on water quality, aquatic, cultural, or socioeconomic resources downstream from the reservoirs. Potential measures may include the construction of siphons at each of the Delaware watershed reservoirs to increase DEP's ability to safely release additional water."

Several lines of evidence point to the increased flooding potential when New York City's reservoirs are full.

- The joint USGS, Delaware River Basin Commission (DRBC) and US Army Corps of Engineers (ACE) Flood Study35 released in early 2010 contains data that indicate New York City's reservoirs exacerbate flooding when full.
- A second USGS study36 contains data that indicate that, when full, the New York City reservoirs increase the likelihood of uncontrolled spills greater than occurred prior to the advent and substantial completion of New York City's universal metering program.

The RWBT shutdown is an extreme circumstance that is far outside any previously considered operating condition and may substantially conflict with the current DRBC Comprehensive Plan since it may raise the level of flood risk beyond any previously modeled. However, the OASIS model that the DRBC now uses does not use accurate New York City system demands, demand patterns, weigh conjunctive use effects, or even consider the Rondout and West Branch reservoirs. The DRBC and the

[35] Goode, D.J., Koerkle, E.H., Hoffman, S.A., Regan, R.S., Hay, L.E., and Markstrom, S.L., 2010, Simulation of runoff and reservoir inflow for use in a flood-analysis model for the Delaware River, Pennsylvania, New Jersey, and New York, 2004-2006: U.S. Geological Survey Open-File Report 2010-1014, 68 p.

[36] Suro, T.P., Firda, G.D., and Szabo, C.O. 2009, Flood of June 26-29, 2006, Mohawk, Delaware, and Susquehanna River Basins, New York: U.S. Geological Survey Open-File Report 2009-1063, 354p.

Decree parties need a model to enable appropriate assessment of the impacts beyond merely jurisdictional boundaries of the EIS Scope of Work. DRBC is the proper forum to present such a model before the bypass work is initiated. DRBC has acted in an objective and deliberative fashion to help provide operating solutions for the often competing uses of the reservoirs, between fisheries and flood, water supply and recreation, wants and needs.

New York City's agreement to develop the current FFMP flood mitigation rules exemplifies the results of a cooperative and collaborative effort, which should be expanded and continued to address adverse impacts of reservoir management and optimize mitigation for flood, drought and all emergency operations and other programs. As noted in the DEIS, New York City has proposed the potential construction of siphons over Delaware System dams of Cannonsville, Pepacton, Neversink and Rondout. The potential for siphons emphasizes again the issue of appropriate hydrologic modeling to ascertain the flood risks with and without siphons and, if proposed, what size is needed. If modeling shows that increased release capacity provided by siphons provides effective flood mitigation during a period when New York City cannot divert any water at all, then permanent siphons or other permanent release facilities might well provide a permanent solution at a reasonable cost benefit. Additionally, if New York City moves forward in adding hydropower to the Delaware reservoirs, there may be a cost-effect opportunity for a permanent improvement of release facilities in tandem with that project. (Sickels)

Response 300: As noted earlier, a detailed evaluation of the effects related to the shutdown of the Delaware Aqueduct will be undertaken in the second EIS or a subsequent environmental review, as appropriate. The current EIS provides only a preliminary assessment of DEP's current understanding of these effects. In addition, as noted above, DEP expects to consult extensively with resource managers in New Jersey and with the DRBC as we develop appropriate models to evaluate and address the potential effects in other states of the RWBT shutdown and any augmentation projects – effects that are beyond the scope of the SEQRA/CEQR process. These effects will be reviewed both prior to and in the course of DEP's compliance with New Jersey's regulatory process for projects. The consultation effort will include outreach to DRBC, but DEP does not currently anticipate that the RWBT shutdown will encompass any projects reviewable by the DRBC or require any changes to DRBC's Comprehensive Plan. See Response 44 for additional information.

Comment 301: Re: potential drought risks and water supply system stresses from augmenting New York City water supply with water from New Jersey. Section 3.5-1 of the DEIS describes the need for the New Jersey Interconnection during the 6 to 15 month period that the RWBT will be shut down and presents several means to augment supplies during the RWBT shutdown; however, these augmentation alternatives provide no significant detail. Additional information is needed in order for NJDEP and New Jersey water purveyors to effectively evaluate this request including; total average demand, total peak demand, and the percent of each demand needed from New Jersey sources. Details on the time and duration of the shutdown and anticipated augmentation by New Jersey sources are also needed. NJDEP would like to work in conjunction with DEP to properly evaluate potential impacts to New Jersey infrastructure, firm capacity, and allocation regulations.

It is clear that the volume of water needed by New York City and the timing of this need, will drive New Jersey's response.

Some examples of the complexity of this planning include:

- New Jersey's approval must consider the physical and financial interrelationships between the potential purveyors in the context of their safe yields, firm treatment capacity, interconnection capability, and water quality.
- The contractual mechanism for reimbursement of capital and operating costs has to be established by NJDEP and NJBPU.
- Water delivered to New York City may be supplied by transfers from the allocable portion of the Delaware and Raritan (D&R) Canal. Releasing additional water from New York City's Delaware reservoirs for intake by the D&R Canal may require temporary changes to the FFMP.
- Water from the D&R Canal is used to augment the NJWSA system directly and is used to offset other users via interconnections. This water is also an important part of drought contingency plans. How this transfer affects potential drought actions must be considered.
- The North Jersey District Water Supply Commission's role in water availability during the tunnel shutdown and long-term regional water supply resiliency.
- New Jersey needs to assess the potential costs to New Jersey of additional infrastructure to offset wheeling water. This is important especially given the possibility that such facilities may not be called upon.

- While several possible interconnection parties are cited and a Staten Island to New Jersey route is conjectured, the ability to determine the feasibility of these engineering and institutional alternatives requires more information. The DEIS should document the infrastructure and existing interdependence of yields between New York and New Jersey.
- The water yields of northeast New Jersey watersheds are intertwined with the Delaware and Hudson basin and more specifically the Wanaque, Ramapo and Hackensack headwaters in Rockland and Orange Counties, NY State. In part, the need for more information is required because of the diversity of ownership in New Jersey and the inter-relationships of yields between the NY State facilities, such as Deforest Reservoir, and New Jersey facilities, such as Oradell Reservoir. While New York City owns the source, the treatment and transmission mains, and the distribution system for 8 million people, in New Jersey the water sources, the treatment, transmission and distribution systems of finished water for 5 million people are owned by more than 100 independently owned and operated public and private water supply and wastewater systems.

The DEIS identifies New Jersey water purveyors that could provide water to Staten Island. DEP cited several New Jersey sources including the North Jersey District Water Supply Commission (NJDWSC), which operates the largest water supply system in New Jersey, drawing water from the Passaic River Basin. Also listed are the New Jersey American Water Company (NJAW) and the Middlesex Water Company (MWC), both which obtain water from the Raritan River Basin and both of which receive surface water from the New Jersey Water Supply Authority (NJWSA). Most importantly, the NJWSA is supported by an allocable safe yield of 65 mgd from the Delaware and Raritan Canal (D&R Canal). However, it should be noted that the D&R Canal should with great certainty be usable up to 100 mgd. Also, as noted previously, the entire northeastern New Jersey water supply system is at times augmented by the NJWSA system via various interconnections, which in turn is augmented by the D&R Canal. Given these interdependencies, it is extremely important that NJDEP be involved with the evaluation of potential water sources for New York City during the RWBT shutdown project. (Sickels)

Response 301: As DEP develops its NJ Interconnection program DEP will coordinate closely with NJDEP to develop a mutually beneficial water supply program. DEP recognizes the potential challenges to augmentation using New Jersey sources that have been recited here, but DEP also has

identified significant potential benefits to both New York and New Jersey from the infrastructure improvements and greater interconnection capacity that may result from augmentation projects. Several of the interconnections that might be improved for use in any shutdown have been identified repeatedly in New Jersey water supply planning documents as important elements of improving New Jersey's water supply management, providing additional water supply options for supply-sensitive areas of the state to mitigated drought, infrastructure failure, and domestic security risks.

Comment 302: Re: the potential New Jersey legal and regulatory implications of transferring water out of state. The DEIS notes in section 3.5.1 the agencies likely to be involved in the approval process, but does not indicate that there may be legal issues to the conveyance through pipes and pump stations beyond the New Jersey State borders that potentially need to be addressed as well. The history of interstate transfers and agreements from 1900 to today provide perspective on the rights of both parties to the transfer and the procedures and limitations that may be imposed.

Examples of interstate transfer of water supply that may provide relevant legal and regulatory requirements include:

- The 1905 proposed transfer of water from Hudson County, NJ, to Staten Island and the subsequent New Jersey Supreme Court Decisions, appeal to the U.S. Supreme Court, and the 1907 New Jersey Riparian Commission Findings.
- The 1950s construction of Lake Deforest by the then Hackensack Water Company in New York State and the subsequent agreements and permit conditions on release of water from New York to New Jersey.
- The 1954 U.S. Supreme Court Decree relating to equitable apportionment of water in the Delaware River Basin.
- The 1980s Ramapo River well field just upstream of New Jersey in Rockland County, NY.
- The numerous Delaware River Basin Commission Dockets.
- The 1980s installation of a pipeline over the George Washington Bridge from New York City to the then Hackensack Water Company.

NJDEP can work with DEP to identify and address the legal, institutional and financial issues as well as the physical capacity issues of diverting water from New Jersey to New York City. (Sickels)

Response 302: NYCDEP appreciates NJDEP's offer to work with NYCDEP on the complicated issues involved in interstate water conveyance. NYCDEP intends to maintain an open dialogue with NJDEP and other stakeholders to ensure a cooperative and productive approach to interstate water transfer. As part of that dialogue, NYCDEP is prepared to discuss appropriate contingency measures in the event the planned shutdown coincides with a drought or other water supply emergency. NYCDEP will comply with all applicable laws regarding interstate conveyance of water. NYCDEP will consider the historical application and interpretation of such governing regulations when contemplating any interstate exchange of water. NYCDEP intends to obtain all necessary federal, state or local permits associated with any such conveyance. Also see Response 300, in which NYCDEP states its intent to follow New Jersey's permitting requirements.

Comment 303: Re: summary and recommendations. The increased discharges from the Cannonsville, Pepacton, Neversink, and Rondout Reservoirs have the potential to result in downstream flooding as a result of the RWBT shutdown. The potential for increased releases needs to be assessed for all potential impacts related to the construction of water management infrastructure and increased releases as a result of Project 2B. Further, the provision of augmenting water supplies from New Jersey may be costly for New Jersey both for development of infrastructure and stressing its existing limits of peak capacity, depending on how much New York City needs and for how long. Legal and regulatory matters will need to be resolved before construction can begin. Therefore, the following recommendations are provided:

a) NJDEP Division of Water Supply and Geoscience should be notified in future public notices related to this and similar projects.

b) DEP should provide an accurate up to date model of its system for New Jersey and DRBC that simulates the effects of alternative operations due to the proposed Bypass project as well as normal operations to determine the range of optimal operating alternatives to limit flooding and/or to offset large releases needed to create flood mitigating voids in its reservoirs.

c) DEP should both submit its proposed project to the DRBC for Section 3.8 Project Review and/or Comprehensive Plan approval and avail itself of the DRBC and all the Decree parties' input to equitably mitigate as many operating impacts as possible with optimized planning and engineering.

d) The NJDEP and DEP should work in conjunction to develop an augmentation program from New Jersey that is based on accurate, transparent information, project scheduling, and realistic demands.

e) Legal and regulatory limitations need consideration. (Sickels)

Response 303: DEP will include NJDEP Division of Water Supply and Geoscience on future public notices. DEP intends to evaluate downstream flooding impacts will have to be evaluated, even where those impacts may be beyond the scope of this FEIS or the second EIS or a subsequent environmental review, as appropriate. In the course of that analysis, DEP will work directly with NJDEP with respect to any modeling or assumptions that are used. The consultation effort will include outreach to DRBC, but as noted above, DEP does not currently anticipate that the RWBT shutdown will encompass any projects reviewable by the DRBC or require any changes to DRBC's Comprehensive Plan. DEP is implementing an engineering analysis to determine the operational processes required to effectively manage system changes that may occur during the RWBT shut-down and will include that information in the second EIS or a subsequent environmental review, as appropriate. DEP will coordinate with all applicable water supply entities to develop an augmentation program based on accurate and transparent information and project scheduling.

Comment 304: Section 3.4.2, "Well Rehabilitation," should include the completion of a sanitary survey inspection of all wells and well stations in cooperation with the New York City Department of Health (NYCDOH) or New York State Department of Health (NYSDOH) to evaluate the extent of compliance with the 10 State Recommended Standards for Water Works and the identification of any deficiencies that should be a pmi of the water system improvement program. (King)

Response 304: Comment noted. Construction of the groundwater projects would be undertaken in coordination with and consistent with all applicable agencies and regulations.

Comment 305: Section 3.4-2.2 should also address the condition of all electrical and water supply operation, treatment, monitoring and control systems to assure that they are reliable and satisfactory for full time service. This should include installation/repair and maintenance of chemical feeders and anti-siphon devices as well as chemical treatment safety controls, and installation of upgraded well site building alarms and site surveillance security systems as may be needed. (King)

Response 305: Comment noted. Construction for projects in this section would need to comply with the New York City Building Code.

Comment 306: Section 3.4-2.4, "Anticipated Water Supply Benefit," indicates that an added benefit of the reactivation of the Queens groundwater supply system is that the interconnections (discussed in Section 3.6) could function to allow water pumped from the Queens' groundwater system to enter the neighboring Nassau County water districts (systems) during periods of drought or well rehabilitation. The use of the New York City water supply system for these purposes would not be acceptable because fluoridation is not an approved water supply treatment in Nassau County. In addition, Nassau County water systems are generally not affected by drought conditions that may have a significant impact on surface water systems. These systems schedule well rehabilitation projects for non-peak water demand periods and generally have sufficient capacity to meet water supply demands when unexpected well failures occur. Should the need ever arise, however, the availability of the New York City water supply system to help meet a short-term emergency water supply condition in a neighboring Nassau County water system would be a benefit. (King)

Response 306: Comment noted. It is understood that Nassau County has indicated it will not accept fluoridated water. As project planning for the Nassau Interconnection project moves forward the water supply compatibility will be further investigated to potentially provide benefit to both parties.

Comment 307: Section 3.4-5, "Potential Impacts," should include a DEP evaluation of the potential impact of air stripper VOC emission on ambient air quality in the vicinity of well stations using the NYSDEC DAR-1 Guidelines for the Control of Toxic Ambient Air Contaminants. These guidelines should be used to determine if VOC removal or destruction devices are needed to treat emissions from the air stripping exhaust before release to the atmosphere. (King)

Response 307: Comment noted.

Comment 308: Section 3.4-5: It is essential that the DEIS be revised to describe DEP plans for analyzing the potential for changes in water table elevations, aquifer pressures and the intrusion of salt water into the aquifers that supply both New York City and Nassau County public water supply sources. The potential impact of the reactivation of up to 68 supply wells at 44 well stations in Queens and the increased pumping of existing supply wells in western Nassau County (described in Section 3.6) would be expected to have a dramatic effect on the water table elevation in eastern

Queens and western Nassau and should be evaluated by experts such as the U.S. Geological Survey to determine the anticipated changes in water table elevations, aquifer pressures and the potential for increased salt water intrusion into the aquifers that are used to supply water supply sources in both areas. This analysis should be used to properly manage the proposed supply well pumping so as to minimize or prevent any adverse aquifer or water supply source impacts. The potential drawdown of the water table could have a substantial impact to Nassau County water suppliers and should be thoroughly studied and modeled prior to implementation. The additional pumping from the aquifers could change flow patterns and direction and velocity of VOC plume movement. (King)

Response 308: Comment noted. The potential incremental effect of the applicable proposed Project 2A projects will be evaluated in the second EIS or a subsequent environmental review, as appropriate.

Comment 309: Section 3.4-5.3, "Natural Resources," states that some clearing of trees and shrubs may be necessary to rehabilitate these wells sites that have been dormant for many years. It should be noted that this activity could include the displacement of wildlife (e.g., raccoons which could be infected with raccoon variant rabies) into the surrounding neighborhoods. (King)

Response 309: Comment noted.

Comment 310: Section 3.4-5.6, "Air Quality," indicates that VOCs air emissions ("off gas") from air strippers would be treated before being emitted into the atmosphere through a process called scrubbing. "Scrubbers" are air pollution control devices that use liquid to wash unwanted pollutants from a gas stream or systems that inject a dry reagent or slurry into a dirty exhaust stream to "wash out" acid gases. These devices are normally not used for VOC emission removal unless they are connected to air pollution control devices such as activated carbon beds or thermal afterburners to remove or destroy VOCs emissions. (King)

Response 310: Comment noted.

Comment 311: The Queens Groundwater Reactivation project and the Nassau County Interconnection project will increase pumping from the aquifers of the water supply areas immediately adjacent to the Water Authority of Great Neck North's (WAGNN) sole source water supply aquifer. As indicated in the DEIS, the proposed increased pumping will result in a significant drawdown of the aquifer with the added potential for salt water intrusion

in some locations. Since the drawdown will occur close to WAGNN's wells, there is significant potential for an adverse hydrological impact to the sustainability of WAGNN's water supply. Additionally, the increased pumping could result in an irreversible adverse impact to the water quality of WANN's wells by drawing in contamination plumes. The results of the proposed pumping plan could be catastrophic and irreversible to the health, safety, and welfare of the residents and businesses of and visitors to the Great Neck peninsula. WAGNN is concerned with the potential for pumping to increase salt water intrusion and migration of contaminant plumes. (Graziano)

Response 311: Comment noted. Please note that WAGNN misconstrued the contents of the DEIS. The DEIS states that the use of groundwater could have a potential effect and would be evaluated as detail becomes available. The potential incremental effect to groundwater resulting from the possible use of Queens and Western Nassau groundwater would be evaluated in a second EIS or a subsequent environmental review, as necessary, as dictated by its need to augment New York City's water supply.

Comment 312: The failure to include within the DEIS a study of the ramifications of the proposed pumping from the aquifers of the water supply areas immediately adjacent to WAGNN's sole source water supply aquifer is an illegal segmentation of the environmental review, treating the various activities and stages of the project as though they were independent, unrelated activities, when, in fact, pumping appears to be an integral part of the Queens Groundwater Reactivation project and the Nassau County Interconnection project. (Graziano)

Response 312: Comment noted. The necessary augmentation of New York City's water supply is undetermined at this time. Therefore, any potential for environmental impacts related to these potential future actions would be analyzed under the second EIS or a subsequent environmental review, as appropriate. See Response 42 regarding segmentation.

Comment 313: A Supplemental EIS (SEIS) should be prepared to address the impacts of the proposed pumping from the aquifers of the water supply areas immediately adjacent to WAGNN's sole source water supply. It should include a groundwater model to project both the hydrological and the water quality impacts to the water feeding the WAGNN wells. (Graziano)

Response 313: Comment noted. The potential incremental effect of the applicable proposed Project 2A projects will be evaluated in the second EIS or a subsequent environmental review, as appropriate.

Comment 314: Section 3.6-2.1, "Nassau County Water Supply": It should be noted that while the DEIS indicates the number of "customers" in each Nassau County water system that may be used for supply [Long Island American Water and the Water Authority of Western Nassau] it fails to recognize that the combined population of these water systems is approximately 340,000 people. (King)

Response 314: Comment noted.

Comment 315: Section 3.6-2.3, "Key Components," indicates that if the negotiation of acceptable water supply agreements and regulatory approvals can be secured that the project would require evaluation and possible repair or replacement of existing interconnections, selection and construction of new interconnections, and the possible installation of treatment facilities or the addition of pumping capacity depending on the treatment provided and water system pressure provided by the Nassau water suppliers. This section should also address physical modifications that may be needed to monitor and prevent reversals of flow from the New York City Queens distribution system into Nassau County water supply systems. (King)

Response 315: Comment noted.

Comment 316: Section 3.6-2.3 describes various potential water quality impacts that may result from the interconnection of the Nassau County water system including a concern of the migration of volatile organic compounds into supply wells in Nassau County resulting from the activation of supply wells in Queens and the increased pumping of supply wells in Nassau County public water systems, as well as, the concern of salt water intrusion into shallow wells located in the upper glacial aquifer produced by over-pumping of a well (or wells) resulting in salt water movement into the fresh water portion of the aquifer. Comments and recommendations have been provided under Section 3.4, "Queens Groundwater Reactivation," above regarding the need for an evaluation of the concern for migration of volatile organic compounds and potential for salt water intrusion that is presented by the reactivation of the Queens supply wells and increased pumping of Nassau County supply wells. (King)

Response 316: Comment noted. The potential incremental effect of the applicable proposed Project 2A projects will be evaluated in the second EIS or a subsequent environmental review, as appropriate.

Comment 317: Section 3.6-2.3 should address the potential for the creation of "rusty" or discolored water problems that may be produced by the changes in the

velocity and direction of flow in the distribution system water mains that will transport water from Nassau County supply wells and in the water mains that will transport drinking water within the Queens distribution system. (King)

Response 317: Comment noted. The potential incremental effect of the applicable proposed Project 2A projects will be evaluated in the second EIS or a subsequent environmental review, as appropriate.

Comment 318: Table 3.6-1 should specifically identify the Nassau County Department of Health as one of the agencies that would be required to issue approvals (approval of plans for the construction of interconnections and transmission mains as may be needed in Nassau County) for the Nassau County Interconnection project. (King)

Response 318: Comment noted, and the Nassau County Department of Health has been included on the FEIS distribution.

10.0-3.6 PROBABLE IMPACTS OF PROJECT 2B: BYPASS TUNNEL CONNECTION AND RWBT INSPECTION AND REPAIR, INCLUDING WAWARSING

Comment 319: Section 4.2-2.3: Potential Impacts from Construction of Project 2B, Visual Character (page 4.2-5): Should proposed mitigation measures for visual impacts that will be implemented in Project 1 be discussed as mitigation measures for this phase (i.e., Project 2B)? (Arent)

Response 319: Mitigation measures for Project 1 would continue to be implemented as appropriate for Project 2B. However, the second EIS or a subsequent environmental review, as appropriate, will reiterate and disclose any potential changes to these measures.

Comment 320: At the conclusion of Project 2B, the DEIS proposes to restore the west connection site "with a combination of planting meadow habitat with shrubs and some trees," claiming that the permanent loss of the central wetland "would not result in significant adverse impacts to wetland resources in the region or regional populations of the fauna it supports." This is a claim advanced by developers routinely who propose to fill wetlands confined to their project sites within a region, but it ignores the cumulative impacts of gradual attrition of regional wetland resources. (Wegner)

Response 320: The potential impacts on wetlands on the west connection site were identified in the DEIS. As presented in Section 2.8 of the DEIS, the loss of

the approximately 0.09-acre central wetland is unavoidable. As improvement for this unavoidable loss, a nuisance plant control program would be implemented to enhance the quality of the western wetland which would not be lost as a result of the project. Additionally, the landscaping plan under development would improve the buffer of remaining vegetation between this wetland and the 19-acre area of disturbance to enhance the vegetative screening.

Comment 321: The reduction of leakage that will result from the proposed replacement of the RWBT could potentially impact fish and macroinvertebrate habitat in the Roseton stream, as well as associated wetland habitat. Among the potential impacts are a change in fish species due to water temperature increases and a decline in the extent of wetland habitat due to increased inflow. DEP proposed to address these potential impacts in a subsequent EIS that addresses Project 2B, which consists of the repair of the Wawarsing crossing and the connection of the bypass tunnel to the existing tunnel. DEP has outlined an approach (Section 4.3-2.2) to determine the extent and significance of these impacts and to develop appropriate mitigation measures where needed. The USFWS concurs with this approach and will provide comments on those potential impacts and any necessary mitigation after the second EIS is completed. (Stilwell)

Response 321: Comment noted.

Comment 322: As the DEIS indicates that there are no proposed limits on truck support activities from 11 PM to 7 AM daily at the east connection site during the connection phase (as indicated on page 4.2-4), it is recommended that additional engineering controls be evaluated. For instance, infrared (or other) back-up alarms could be used on trucks and other equipment rather than conventional beepers, especially during evening hours in this residential area. (Ballard)

Response 322: Appendix 2.19-2 presents a Conceptual Noise Mitigation Plan that would address these issues during construction. One component includes the use of modified back-up alarms. However, it is critical to connect the bypass tunnel as quickly as possible; other mitigation (reduced work hours, etc.) are not possible during this phase.

Comment 323: We understand that Project 2B will entail pumping water from the Hudson River and discharging water to the Hudson. We encourage a thorough analysis of the potential impacts of these activities in the second DEIS. (Dozier)

Response 323: Comment noted. These details will be addressed in the second EIS or a subsequent environmental review, as appropriate.

Comment 324: I am told that the water in the old tunnel will have to be drained at some point, and since this area was surveyed last year in prep for that, I must call attention that if it is drained, we maybe impacted quite a bit, especially if any storms come during the drainage because the brook flows by our home and the majority of this clean water comes from the leak. When the tunnel was shut down, the brook water height dropped considerably. But the brook does overflow onto the public road and has flooded our lawn driveway and cellar during heavy rains. DEP has a water height measuring device in the brook in front of our house. We also get much clear water coming into our cellar through the sump pump basin and much overflow of water out the top of our shallow well for days after a rain. Much clay has built up in this brook and has narrowed portions of it. Some of this should be cleared to allow better flow as not to bottle neck. (Venuti)

Response 324: As described on pages 4.4-1 and 4.4-2 of the DEIS, two general scenarios for un-watering (i.e., with and without the need for an inundation plug) were considered in the assessment of probable impacts of Project 2B, Bypass Tunnel Connection and RWBT Inspection and Repair. Under both scenarios, the initial un-watering of the RWBT would occur at the Shaft 6 facility through the existing DEP Hudson River outfall. For the scenario in which inundation plugs would be required, after the initial un-watering at Shaft 6, and the inundation plugs are constructed, un-watering would be required at the west and east connection sites. At the west connection site, the water removed from the RWBT during un-watering and then as a result of dewatering the tunnel during the connection phase, would be conveyed to the Hudson River through the dewatering pipeline that would be constructed as part of Project 1. The outfall for the dewatering pipeline would be located within the tidal portion of the stream within the Roseton stream study site, near the confluence with the Hudson River, and would not have the potential to affect stream flow within the nontidal portion of the stream in the vicinity of the weir installed by DEP to monitor water elevation.

Comment 325: At page 4.2-29, the DEIS speaks about using the Hudson River Pumping Station Intake to provide non-potable water for construction purposes. This section states that the analysis will be deferred to the later EIS for Project 2B. This analysis must be included in the FEIS so that the Town will be in a position to act to extend a Town water line to provide water

for construction purposes if there is a determination to do so. The analysis needs to include the amount of water that is projected to be used for construction purposes. (Horan)

Response 325: Use of the Hudson River Pumping Station to provide water for construction at the east connection site is still in the preliminary phase of development, as it would only be activated during Project 2B when the Delaware Aqueduct is out of service. Therefore, the second EIS or a subsequent environmental review, as appropriate, will assess all potential impacts associated with activating this intake. The current FEIS specifically discusses the amount of water required for construction in Section 2.14, "Infrastructure." In addition, the FEIS includes additional information related to a potential connection to the Town of Wappinger for water supply during construction as an alternate means to provide water during Project 2B.

Comment 326: Page 4.2-6 indicates that an intake within the Hudson River for a supply of non-potable water will be constructed. Additional permits (Ex/Fill, Stream Disturbance, Water Quality Certification) may be required for construction of this intake. In addition, measures should be proposed to prevent entrainment of fish into the intake structure (screens or other impingement barriers). Provide a discussion of proposed measures and potential impacts from construction of the intake. (Ballard)

Response 326: Subsequent to the issuance of the DEIS DEP determined that non-potable water could be supplied to the west connection site during the tunnel connection phase (i.e., Project 2B) without construction of an intake on the Hudson River discussed on Page 4.2-3 of the DEIS. Therefore, the need for construction of an intake and additional analyses of such was not considered in the FEIS as part of Project 2B.

Comment 327: Page 4.3-11 indicates that there will be certain impacts to a Class C stream and wetland at the Roseton site (west side) from repairing the leak and stopping the flow from the existing (leaking) RWBT. The existing leak from the RWBT apparently supports the wetland and its associated habitats, and NYSDEC believes that there may be impacts to the brown trout, which is known to occur in this stream. The FEIS should discuss potential impacts to this fish species, as well as any proposed mitigation measures. (Ballard)

Response 327: Page 4.3-5 of the DEIS provides an assessment of potential impacts to wetlands within stream segments currently receiving leakage from the RWBT, Segments 3 and 4, due to the reduction of the leak. Page 4.3-6 of the DEIS provides an assessment of the potential impacts to the aquatic

community within Segments 3 and 4 due to the reduction of the leak from RWBT, and identifying that the reduction of the leak would have a potential to affect the water quality and aquatic resources within Segments 3 and 4 due to decreased stream flow and physiochemical changes (e.g., increased water temperature). Elimination of the cold water fishery and replacement with a more temperate fish and benthic community characteristic of the Hudson River tributaries within the portion of New York is identified as a potential effect of leakage reduction that would occur under Project 2B. The second FEIS will present a detailed evaluation of the potential impact to aquatic resources of the stream within the Roseton stream study site and proposed mitigation measures.

Comment 328: At the conclusion of Project 2B, the DEIS proposes to restore the proposed west connection site "with a combination of planting meadow habitat, with shrubs and some trees,"[37] claiming that the permanent loss of the central wetland" would not result in significant adverse impacts to wetland resources in the region or regional populations of the fauna it supports."[38] DEP further specifies that: "While adverse at the individual level, this would not be expected to result in significant adverse impacts to regional populations of wood frogs and other amphibian species potentially breeding within this vernal pool."[39]

Private developers routinely advance such a claim when they propose to fill wetlands confined to their project sites within the region, which ignores the cumulative impacts of gradual attrition of regional wetland resources. The DEIS provides no discussion of the functions and values of the on-site wetlands, but merely presents a survey of existing wetland vegetation.[40] Replacing even a small headwater wetland—the functions and value of which are unknown—with upland shrubs and trees is not an accepted practice to mitigate wetland losses. In fact, although the DEIS alludes to the potential development of wetland mitigation strategies in the second EIS for impacts to wetlands at the Roseton stream study site,[41] no such strategies are provided for wetland mitigation on the west connection site in the current DEIS.

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[37] DEIS, at ES-16.

[38] *See id.*, at 2.8-59.

[39] *See id.*, at 2.8-63.

[40] *See id.*, at 2.8-16.

[41] *See id.*, at 4.3-10.

At a minimum, the FEIS should provide an analysis of the functions and values of existing wetlands on the west connection site, a compensatory wetland mitigation plan for the central wetland, and a revised site plan that eliminates disturbance of the eastern and western wetlands and their buffers. Chapter 83 of the Town of Newburgh Town Code defines wetland to include "areas of aquatic or semi-aquatic vegetation" and requires a permit prior to conducting "[s]ite preparation within wetlands or within a one-hundred-foot buffer strip of a wetland."[42] Because DEP proposes to disturb Town Code on-site wetlands, it should propose compensatory mitigation to the Town to offset wetland losses. (Hudson/Wegner)

Response 328: Town of Newburgh Code Chapter 83 – Clearing and Grading, defines a wetland as "Areas of aquatic or semiaquatic vegetation or any areas which have been mapped as such by the County Soil and Water Conservation District or the New York State Department of Environmental Conservation under the Freshwater Wetlands Act. Editor's Note: See Environmental Conservation Law § 24-0101 et seq." Watercourse is defined as "Any natural or artificial stream, river, creek, channel, canal, conduit, culvert, drainageway, gully, ravine or wash in which water flows in a definite direction or course, either continuously or intermittently, and which has a definite channel, bed and banks." None of the wetlands within the west connection site would appear to meet this definition. See Response 148 for a discussion of the likely functions being performed by the central and western wetland, and activities within the buffer for the eastern wetland, the riparian wetland bordering the Class C stream within the west connection site. The USACE determined that the eastern wetland, located as a narrow fringe on either side of the Class C stream at the southeastern section of the west connection site, meets the criteria of waters of the United States under Section 404 of the Clean Water Act. As waters of the United States, the USACE regulates activities within the delineated wetland area under Section 404 of the Clean Water Act but does not regulate a wetland buffer area. DEP has developed the site plan to minimize the area of disturbance needed for the project activities that would take place at the site while at the same time providing a buffer area for both the western and eastern wetland to the greatest extent possible. As discussed in Response 148 because of site constraints some portion of the buffer DEP established around the eastern wetland must be used for project elements. DEP has submitted to NYSDEC and the Town of Newburgh a stormwater pollution prevention plan with erosion and

[42] *See id.*, at 2.8-10.

sediment controls, stormwater management measures, and vegetative stabilization measures to minimize impacts to the eastern and western wetland due to land disturbing activities. DEP submitted site plans to the Town of Newburgh for approval in December 2011.

Comment 329: Page 4.5-1 indicates that bypass tunnel construction, and associated reliance on the Catskill and Croton watershed systems, could cause significant drawdowns of reservoirs in those two watersheds. Note that any proposed drawdown of reservoirs owned by New York City, and which are protected bodies of water of New York State, must not cause a fish kill within the reservoir(s) or downstream waterbodies. (Ballard)

Response 329: Comment noted.

Comment 330: Delaware County's primary concern with the tunnel repairs involves the management of reservoir releases from the Cannonsville and Pepacton impoundments during the shut-down period for tunnel repair. Section 4.5-1 states that DEP intends to conduct a second EIS which will entail much more detail with regard to the releases from these impoundments at some future point. We support that effort. (Frazier)

Response 330: Comment noted. The second EIS or a subsequent environmental review, as appropriate, will provide a detailed analysis of Delaware Reservoir releases.

Comment 331: Section 4.6.1 briefly addresses some of our concerns. Our primary concern with regard to releases is for the flood prevention immediately downstream to protect life and property. During the tunnel repair project New York City water consumers will be supplied via other sources, hence the ability to provide a larger void during this time period comes at no risk to consumer supply. We acknowledge the challenges associated with managing these reservoirs and that weather conditions may create reservoir levels unfavorable to preventing spills. Nevertheless, we maintain that a more aggressive management regime for releases prior and during the tunnel repair time phase is reasonable. In our view, there is not a logical reason why flood prevention during this time frame should not be the priority. Our view is that a more aggressive release program, providing more flow for fisheries, recreational activities and maintaining the balance of salt and freshwater in the lower Delaware comes with no risk to anyone.

We support the use of siphons to reduce reservoir levels and that siphons should be added to both the Pepacton and Cannonsville dams on a permanent basis to improve the city’s capability to reduce reservoir levels

in the anticipation of storm events, especially when near full. We also recommend that the city put in place a protocol to minimize damage from combined releases of existing structures and siphons. As part of that, we propose that the city install sirens permanently to notify those below the impoundments to warn when a potential evacuation is forthcoming and when an evacuation is required. They should be in place before the tunnel repair. (Frazier)

Response 331: Comment noted. The second EIS or a subsequent environmental review, as appropriate, will provide a detailed analysis of Delaware Reservoir releases.

Comment 332: Once you actually get to the part in Wawarsing where you're going to be reinforcing the lining with an inner lining and power grouting with the concrete cement mixture, what's the guarantee that you're giving us, those that are still going to be in their homes in this area and that are not affected by floods now but are near the impact site, that this caustic chemical is not going to make it into the aquifer and destroy the drinking water supply for the residents? (L. Smith)

Response 332: Comment noted. The evaluation of the effects related to Project 2B will be included in the second EIS or a subsequent environmental review, as appropriate.

Comment 333: "It is anticipated that up to 15 months would be need to complete the bypass connection and to undertake the inspection and repair of the RWBT, expected to be sometime in 2021." (NYCDEP document dated Dec. 20, 2011, p.3)

Basic data statements:

- Since Hurricane Irene and Tropical Storm Lee, it took until October 27, 2011, for Neversink to cease spilling.
- Neversink on November 22, 2011, reached 91 percent and has not come close to it since.
- Neversink was spilling from December 8, 2011, until February 10, 2012.
- Since Irene/Lee, Neversink has only had 15 days of diversions to the city.
- Pepacton has not had a reading below 90 percent since March 14, 2011, until February 14, 2012, almost a year!
- Pepacton rose 9 feet between August 27 and August 29, 2011.

- Pepacton and Neversink have small discharge chambers.
- Cannonville has reached below 90 percent several times this winter season, but this was achieved by using maximum releases through L1b and L1c of FFMP.
- Cannonsville had a crest flow of 8,123 mgd for Lee and Pepacton had a crest flow of 8,125 mgd, but Cannonsville has a discharge capacity four times that of Pepacton.

In section 4.62 of the DEIS the word "siphons" is used to describe possible actions at the Delaware reservoirs. Pepacton is at flood stage with 1 foot over the spillway. How will siphons solve this problem? How will you figure out the level that the three Delaware reservoirs will have to drawn down to just start the closing? If the 90 percent promised has not been achieved, except in Cannonsville as of this typing, for 2011-2012 winter season, how are you going to maintain levels during the 15-month closure? Recharging occurs rapidly for each reservoir. How will this be factored in? (Homovich)

Response 333: As noted in the DEIS and in Response 42, the environmental review of this project is being undertaken in two parts due to the need to start construction of the bypass tunnel and preliminary nature of information currently available regarding DEP's augmentation projects and the effects of the Delaware Aqueduct shutdown. The effects related to the shutdown of the Aqueduct are evaluated at a preliminary level in this FEIS but will be evaluated in detail in a second EIS currently scheduled for release in draft in 2014 or a subsequent environmental review, as appropriate, once more information is available concerning the both the shutdown and the augmentation projects that may be necessary or appropriate. In evaluating the impacts of those shutdown and augmentation in the second EIS or a subsequent environmental review, as appropriate, DEP intends to model the expected levels of the Delaware System reservoirs relying on historical inflow data (which would include historic reservoir levels as suggested here), determine if existing facilities are adequate, identify different operating procedures, and identify whether additional release capacity (including infrastructure improvements, such as siphons) will be needed to ensure DEP has the ability to adequately manage reservoir levels and mitigate flooding risk during the shutdown.

Comment 334: There are minor typographical errors in the last two paragraphs of page 4.1-2. (Dozier)

Response 334: Comment noted. Typographical errors on page 4.1-2 have been corrected in the FEIS.

10.0-3.7 BYPASS TUNNEL OPERATION

Comment 335: Section 5.1-2: Methodology and Screening Assessments, Post-Construction Conditions (page 5.1-2): This section should discuss the various areas of the (west connection) site and the proposed restoration of each area. It should also include a schematic landscape plan that illustrates the sizes of proposed plant communities. For example, the meadow with trees and shrubs, the wetland area, the steep slope and restoration proposed for the slope, and the proposed landscape for the top of the site should be included on the general landscape plan. This will graphically show the size of proposed restoration areas which can be compared to existing conditions. The few trees that are proposed will not restore the forest cover originally on the site. The graphic analysis of proposed plant communities will allow visual comparison of the proposed landscape with the existing landscape, Figure 2.8 -10, page 2.8-21. (Arent)

Response 335: A revised landscaping plan has been developed for the FEIS, and the features of such will be included in the site plan applications submitted to the Towns of New burgh and Wappinger after completion of the FEIS.

Comment 336: Section 5.1-2: Methodology and Screening Assessments, Post-Construction Conditions (page 5.1-2): The last paragraph on this page discusses the removal of parking areas, stating that they will be regraded and replanted. This paragraph should discuss the installation of 2 feet of topsoil or proposed soil mixture to make sure plant communities that once grew on the site can grow on the site again, if landscape restoration is the goal. (Arent)

Response 336: A minimum of 6 to 12 inches of topsoil would be provided throughout the site to support the project landscaping plan.

Comment 337: Section 5.3-3.1: West Connection Site (page 5.3-1) should discuss how the site will blend with the existing forested community and how the landscape can be planted so that it will not look like a landfill. (Arent)

Response 337: A revised landscaping plan has been developed for the FEIS, and the features of such will be included in the site plan applications submitted to the Towns of Newburgh and Wappinger after completion of the FEIS.

Comment 338: Section 5.3-3.2 Study Area: This section only notes the commercial areas along Route 9W and not the largely forested area along Route 9W to the north of the site. (Arent)

Response 338: The following additional text has been added to the FEIS in Section 2.4-3:

In general, there are no notable visually sensitive locations in the study area and no noteworthy scenic vistas or resources that allow for exceptional or scenic views. While an apple orchard with scenic views is located west of the west connection site beyond the Route 9W corridor , this area is visually separated from the west connection site by dense vegetation and steep changes in grade and is not visually connected to the west connection site.

Along the Route 9W corridor, commercial uses line the roadway to the east and west with a few residential uses interspersed. On the east side of Route 9W, beyond the commercial corridor, portions of the study area are densely forested. Beyond the commercial corridor that lines the west side of Route 9W, the study area is largely forested and slopes steeply upward. A small number of residential properties are located on the hillside beyond the commercial strip, but most are not are not visible or only partially visible from Route 9W due to the dense vegetation and steep change in elevation. Immediately north of the west connection site along the west side of Route 9W the study area is densely forested.

Comment 339: Section 5.3-5.1, Conclusions for West of Hudson (page 5.3-5): This section concludes that the landscaping plan and site restoration plans would largely obscure views of the storm water facilities and the site from Route 9W. The trees must mature, so time must be accounted for in this section. Upon completion of landscaping, the trees will not obscure views of the site from Route 9W. Even after successful tree growth, the steep slope will be visible from Route 9W for many years. (Arent)

Response 339: Time is accounted for in this section after completion of construction. Comment noted that the slope will be visible from Route 9W after completion.

Comment 340: Section 5.5-3.1, Evaluation of Impacts West of Hudson (page 5.5-3): This section should include a maintenance plan for the entire site, including replanting where necessary, deer control, invasive plant removal, etc. The site should be monitored and maintained to make sure it is not taken over by invasive plants and healthy plant communities are established and allowed to thrive. (Arent)

Response 340: The DEIS provides for inspection and maintenance for both the on-site stormwater management system and the entire west connection site. The inspection and maintenance includes surveying for erosion, debris and litter, and vegetation loss. Appropriate remedial actions will be taken as necessary to correct problems identified during site inspections. The site will also have a two-step planting and landscape restoration process. First,

native species will be planted during the construction phase landscaping to preclude the establishment of invasive species. Second, post-construction final restoration plantings will also use native species. Both of these restoration efforts will be maintained for a minimum of two years after each planting to ensure survivability of the vegetation. Any plants lost during those periods will be replanted. Invasive species control and management will also be a part of the maintenance program for the stormwater management system. By using native species, the design of the site will build in a strong resistance to deer browse to ensure a sustainable and robust replanting.

10.0-3.8 CUMULATIVE EFFECTS

Comment 341: The discussion of cumulative impacts in the DEIS needs to be supplemented. Chapter 6 states that the potential cumulative traffic, air, and noise impacts that could occur from construction on both connection sites are considered in the respective impact evaluations. However, there's no mention of cumulative impacts in the traffic and noise discussions, and the discussion of air impacts only lists cumulative concentrations of airborne pollutants, with no reference to potential cumulative impacts to the environment or human health.

A more complex discussion of cumulative impacts is necessary to comply with NYSDEC's requirement that an EIS stress all significant environmental impacts that can be reasonably anticipated, including direct and secondary, as well as short- and long-term effect. (Wegner)

Cumulative significant adverse environmental effects of the project were minimized in the DEIS, and the DEIS should do a better job outlining how they can be reduced. The DEIS systematically minimizes the scale of this project, the 10-year period that the project will last, and that construction activities will run for much of this period 24 hours a day, 7 days a week. The DEIS does not give a very accurate picture of the cumulative effects to the Upper Middle Hope area and to the Town of Newburgh in general as it relates to very loud noise due to construction, air pollution and dust, large volumes of traffic from trucks and construction workers, and light pollution from construction site flood lights.

Particularly for the young, elderly, and families with small children, the total cumulative effects will have a lasting effect on their health, sleep habits, ability to be outside for recreation, and overall well-being. While the DEIS suggests the effects are only "temporary," for a senior citizen a project of 10 years is really permanent, and for a child those 10 years will consume most of his or her childhood.

Throughout the DEIS, the document minimizes that construction activity will mostly occur 24 hours a day 5 to 6 days per week, and sometimes 7 days a week. The significant adverse environmental effects, for all intents and purposes for retired persons or those raising a family in the area will be permanent. This is a very large project that will have permanent adverse affects on local resident health as it will be more difficult to sleep at night, and such persons will not be able to go out of doors due to high noise and dust levels. (Casscles)

Response 341: The DEIS fully disclosed all potential significant adverse impacts from direct and secondary as well as short- and long-term effects. The cumulative chapter referred to appropriate individual sections, because the cumulative duration of impacts were a component in the determination of the significance of predicted adverse impacts. With Project 1, the maximum predicted total cumulative concentrations of carbon monoxide, sulfur dioxide, nitrogen dioxide, PM_{10}, and $PM_{2.5}$ would be below the applicable ambient air quality standards at both the west and east connection sites, including potential cumulative concentrations. Based on the modeling performed for the DEIS, when combined with the noise on the near side of the river, cumulative noise on the far side of the river would not have any cumulative effect on the construction-generated noise levels, therefore, there is no potential for cumulative impacts from noise. For traffic, the east and west side were analyzed separately since each study area on each side of the Hudson River would have its own separate trip generation volumes and assignments for construction activity. I-84 is the only roadway that connects the east and west side via the Newburgh Beacon Bridge and is the only channel for vehicular travel between the two study areas. By analyzing the I-84 ramps at both Route 9W and NYS Route 9D, the analysis accounts for any traffic arriving to/departing from the project sites via I-84; therefore, there is no potential for additional significant cumulative adverse impacts from traffic.

10.0-3.9 ALTERNATIVES

Comment 342: I'd like an update of what the actual description of the alternate is for burying the tunnel boring machine, because what you're telling us tonight is not what's reflected in your report. (B. Anderson)

I would like to again revisit this point of the alternative plan to have no shaft on the east side (of the Hudson). If indeed it is an error in the current EIS, that needs to be addressed. Certainly that would severely reduce the negative nature of the impacts on our side of the river. (C. Smart)

It seems to me that all of this would be so much better for us residents of Wappingers if we did not have to have this shaft built on the east side of the river. I would really like to see a very detailed analysis of the cost and schedule impacts and issues associated with the approach of not doing the shaft on the east side as compared to the plan that you have today.

This is the fundamental root of all of the issues that we have or the most major issues that we have. And it's really not adequately addressed or explained or understood. When you talk about a couple of weeks on a 15-month schedule on a 10-year overall plan, that makes no sense. How much longer was it going to take? (W. Smart)

Response 342: A bypass tunnel was selected over a traditional repair to minimize to the greatest extent possible the amount of time the Delaware Aqueduct would be out of service. To that end, the east connection site shaft (Shaft 6B) would have multiple functions beyond retrieving the TBM. Namely, it would provide critical access and material delivery for the final, 6- to 15-month connection at the east connection site. Without this shaft, traveling two miles from the west connection site shaft (Shaft 5B) to complete the tunnel connection would add additional time to the shutdown and pose extreme logistical difficulties—such as transporting large-sized construction equipment and heavy steel beams for permanent bulkhead construction through a finished and lined aqueduct. Should any damage occur to the finished tunnel, additional repairs would add even more time to the aqueduct shutdown. Furthermore, Shaft 6B also provides crucial safety for workers by enabling a fast evacuation of the crew during construction, and dewatering for the construction of the east site connection. In addition, it would provide capacity to bring in equipment if tunnel repairs are required in the future. Therefore, the proposed alternative in which no shaft is built at the east connection site is not a safe or feasible option during the connection phase or to ensure a continued, safe water supply to New York City.

Comment 343: 7.0-1.2, page 7.0-3: Alternatives for removing muck via rail or barge were evaluated at the east connection site. Is removing muck from the west connection site via truck to barge or rail sidings at Danskammer a viable alternative to consider? (Wersted)

Response 343: The removal of excavated material from the west connection site via barge or rail was not considered as a viable option. With this alternative, trucks would still be required to travel through local communities, and there would be significant additional impacts to the local residents as well as additional costs associated with barging and the extra handling of excavated materials.

Comment 344: The City of New York must purchase property on the west side of the river to build a staging area for this humongous 10-year project. However, the city already has sufficient land on the east side of the river at Chelsea to construct a staging area on the river and adjacent to a rail line. This is a feasible and reasonable alternative.

The DEIS does not give a sufficient "good hard look" as there are other sites for this staging area to remove material. Why was the use of barges and rail not more closely considered to remove this material from the Chelsea site, which directly borders the Hudson River? Such an approach would remove the need to transport this heavy, dusty, muddy, and sloppy material on roads at all from both Middle Hope and Chelsea. This would remove thousands of diesel trucks off the road on both sides of the river and reduce noise and traffic congestion. This is a glaring deficiency in the DEIS and should be addressed.

The use of barges or rail at Chelsea would remove thousands of diesel trucks off the road on both sides of the river, reduce dust and air pollution, reduce wear and tear on roads, reduce noise, and traffic congestion. Further, this method of removing material by barge or rail is commonly done now by river. I do not understand why the DEIS devotes over 500 pages to an approach involving the transport of many, many, many tons of material over congested roads in congested towns, but devotes less than 12 pages to this approach of using barges or rail transport along with other hypothetical alternatives.

The DEIS did not conduct an adequate survey of alternative approaches to the one settled upon as the way to proceed with this project. The proposed project is to remove many, many, many tons of soil, rock (after crushing), and muck over a 10-year period of time from the west side of the Hudson River at Middle Hope, and then to transport this dusty, dirty, and heavy material, that often will be wet or muck, over the entire length of one of the busiest roads in one of the biggest towns in the fastest growing part of the state to 1-84 where it will be transported elsewhere. Route 9W is already overburdened with traffic. Further, this project will slow down most of the north south traffic for most of the town.

If I can clarify on the barge thing, I know that Chelsea, the City of New York, they're right on the river there, so it can go directly from the hole to a barge, so you don't need trucks at all. Or you have a rail line there that goes right from the hole into a train as opposed to neither in Chelsea nor in Newburgh having to take all this material out. It's going to be a real lot of material. (Casscles)

Response 344: As discussed in section 7.0-3.1, the Shaft 6 property owned by DEP is not sufficiently large to accommodate the construction activities associated with launching the TBM at the east connection site, and additional parcels contiguous to the Shaft 6 property would have to be acquired.

A detailed analysis of the advantages and disadvantages associated with the removal of shaft muck by barge or rail from the east connection site was included in section 7.0-3.2; similar advantages and disadvantages would result from the removal of tunnel muck from the west connection site.

With respect to truck trips, as discussed in section 7.0-3.2, all of the muck-related truck trips that would be eliminated through removal of muck by barge or rail would reappear at some other location, i.e., where the barges or rail cars would unload the muck onto trucks for transport to the final disposal destination. In addition, construction of a rail siding would require the removal of significant amounts of soil, generating truck trips similar in number to those described for shaft muck removal; in effect, a net increase in trucks would result from the rail option. Traffic, noise, and other impacts associated with these truck trips would therefore also occur at that other location.

Comment 345: And I would just like to say something else to what Steve (Casscles) said about stuff going by barge rather than by trucks going long distance. And there is a quarry on the river. But maybe there's a possibility that you can off load some stuff in a barge. It’s a small quarry they keep open so they can have rights to one day quarry that again. I don't know the dynamics of how you get trucks down there, but it’s not that far from the site, it’s north of your site.

But maybe if this happened you could direct some traffic north and some traffic south and that would ease up the truck traffic situation and put some of it maybe on the river on barges rather than on trucks. So you might want to look into it if that's a feasible option. (T. Hughes)

I don’t know where the dock is for this barge, but I’m opposed to that material going down Old Post and River Road because that would indicate that everything coming out of there, which is an awful lot of material, is all going to go down Old Post and River Road. And I’m stating my opposition to that now. I don't know where that dock is or what the route is, but I’m opposed to River Road. (Beretta)

I was wondering about the possibility that the boring material could be removed by barge, rather than by trucking, since that has such a huge impact on the community. I mean we have barges coming every day from

Trap Rock right up the river. And it seems to me material could be easily offloaded with the proper equipment onto barges. Somebody can use that fill somewhere maybe. (Pratt)

Response 345: Truck transport of muck from the west connection site to a barge on the western shore of the Hudson River north of the site would not eliminate the traffic impacts discussed in section 2.10-3.3, and may result in new impacts on Route 9W, and on the local roads between Route 9W and the Hudson River, such as Old Post Road and River Road. Also, as mentioned above, removal of muck by barge or rail would generate truck trips at the location where the barges or rail cars would unload the muck onto trucks for transport to the final disposal destination.

Comment 346: The discussion of the muck removal by barge alternative in Section 7.0-3.2 states that barge use would be restricted for 4 months in the winter due to ice. However, it would be possible to keep a barge at the dock and continue to load muck onto it, even if the river were frozen. The much could then be transported by barge once the river was navigable. (Dozier)

Section 7.0-3.2. The discussion of the much removal by barge alternative states that barge use would be restricted for four months in the winter due to ice. Consideration should be given to storing muck on a barge at the dock during periods when ice on the Hudson River would prohibit transport, if possible. The muck could then be transported by barge once the river was navigable. (Kelley)

Response 346: As part of the preliminary planning for the proposed project, initial evaluations were undertaken to ascertain how much excavated material could be stored temporarily on the east connection site. Based on the estimated processing rates of excavation, the results of these analyses indicated that a few days of muck storage could possibly be accommodated on-site. Over the course of four months when the wharf would not likely be operational, the generated muck would be significantly greater that what two or three barges would be able to store in the Hudson River, presuming such barges could be safely harbored adjacent to the connection site during the winter period.

Comment 347: The discussion of the muck removal by rail alternative in Section 7.0-3.2 states that there would be no net reduction in truck trips under this alternative, because construction of retaining walls would generation a similar number of truck trips as required for muck removal in Project 1—namely, 11,000 truck trips (per page 7.0-19). However, no evidence is provided for this claim. Additionally, on-site trucks could be used to transport muck to the rail cars. Estimates of the truck trips under this

alternative should be provided, and should differentiate between on-site and off-site trips, as impacts from on-site trips are much less than those for off-site trips. (Dozier)

Section 7.0-32. The discussion of the muck removal by rail alternative states that there would be no net reduction in truck trips under this alternative, because construction of retaining walls would generate a similar number of truck trips as required for muck removal in Project 1. Calculations should be provided to support this statement, including estimates of off-site truck trips required in connection with this alternative. (Kelley)

Response 347: Several preliminary design concepts were prepared for implementation of rail sidings at the east connection site. Truck trip estimates associated with construction of the rail sidings were prepared based on these concepts. These were all off-site truck trips during construction of the sidings, not on-site truck trips associated with filling rail cars after sidings were operational. The large volume of trucks associated with constructing rail sidings arises from the topography of the site, which would require extensive earthwork to create space for sidings and associated loading facilities. Due to the limited areas for truck movements internal to the site, and the likely constructability requirements for the contractor to fill the rail cars with excavated material, it was assumed that the excavated material under this alternative would be transferred internal within the site to rail by conveyors. Limited additional truck trips within the site would be expected for filling rail cars with excavated material under this alternative.

Comment 348: My primary concern regards the impact of the east side portion of the project and in particular the method of transporting the excavated materials from the east side site. I feel that the rail alternative described in section 7.0-3.2 – “Shaft Muck Removal by Rail” is not sufficiently documented and explored to arrive at the conclusion stated or implied.

From section 2.15-4.1 the estimated volume of material is 99,000 cubic yards, but no mention is made as to how many rail car loads this would amount to. More importantly would be the peak number of rail cars loaded in a work day as that would be a factor in determining the siding length. Table 2.10-13 states the average truck trips per day at 48 or 24 loads. While I was unable to determine the truck capacity for this analysis, it would be reasonable to assume a rail car (96 cu yds capacity) could contain five truck loads, and thus five rail cars would be needed on average for a day.

An existing and in use rail siding is present just south of the work site to service the firm of Chelsea Forest Products. CSX (freight rail carrier) is aptly able to coordinate rail car deliveries with Metro-North to service their customers along the Upper Hudson Line. Use of rail by this project would amount to CSX adding a new customer. With excavation work taking place for a max of 16 hours/day the full cars could be removed and empties delivered during the off hours if required.

It is difficult to believe that 99,000 cubic yards of earth would need to be removed to provide accommodation for an extension of the existing siding as implied by the statement that an equivalent number of truck trips would be required to construct a siding. Especially if a temporary easement could be acquired from the property owner that is between the work site and Chelsea Forest Products. Also as this material is above the water table it would not be "muck" and thus easier to handle.

The aqueduct and this project do not, from what I can ascertain, provide any direct benefit to east side community in which the work is being performed. Priority should be given to minimizing the total community impact over that of lowering costs. I believe that a more though evaluation of the removal of the excavated material is warranted and should be publicly disclosed and vetted before making a final decision.

It should also be noted that the larger community does have experience with trucking of rock material mined at Tilcon Corporation's Clinton Point Quarry on Sheafe Road in the Town of Poughkeepsie. (Roe)

Response 348: The use of the existing rail siding at Chelsea Forest Products was considered, and it was found to be undersized. Purchase of the property to allow for expansion of the siding was also considered, but this would require displacement of an existing business and also present additional challenges in transporting muck from the east connection site to the sidings.

Construction of sidings on the DEP property was also considered. Due to the site topography, this would require extensive earthwork and retaining wall construction, generating large volumes of truck traffic during construction of the sidings, roughly equivalent to the number of trucks associated with muck removal itself.

Rail was considered to be a more viable muck transportation option for the alternative tunnel drive direction, in which the TBM would be launched, and all tunnel muck would be removed, from the east connection site. In that case, the rail option would eliminate substantially more truck trips than it would add. However, this would also create far more activity at the east connection site, with years of 24-hour construction and far greater

noise, transportation, and neighborhood character impacts to the community. With the east connection site used as a TBM reception site instead of the launch site, the net benefit of rail was essentially negated by the truck traffic required for construction of sidings.

Comment 349: It does not seem that enough effort was devoted in the DEIS to repairing the old tunnel. Are there not reinforced rubber products or cement products that could coat the existing tunnel to stop leaks? (Casscles)

Response 349: DEP has spent years of study to determine that the proposed program is the most suitable for the long-term safety and maintenance of this part of the city's water supply system. In Chapter 1.2, "Background and Planning Context," the DEIS detailed the multitude of planning and design efforts DEP has undertaken in preparation for the repair of the RWBT as part of both its emergency and long-term planning, and explained why simple solutions like those raised in the comment are not practical. As part of DEP's efforts described in the DEIS, a number of improvements to the RWBT were identified that would facilitate emergency or planned repair work. Some of these improvements have already been constructed or are under construction, others are planned, and others are being evaluated. Some of these improvements would occur along the length of the RWBT, and others would occur at various locations within the water supply system.

10.0-3.10 UNAVOIDABLE ADVERSE IMPACTS

Comment 350: At Section 8.0-1 the DEIS states the following:

Unavoidable significant adverse impacts are defined as those that meet the following two criteria:

- There are no reasonably practicable mitigation measures to eliminate the impacts; and
- There are no reasonable alternatives that would meet the purpose and need of the action, eliminate the impact, and not cause other or similar significant adverse impacts.

The standard for the incorporation of mitigation is not "reasonably practicable" it is "to the maximum extent practicable." The standard under CEQR and SEQR is identical. It is submitted that to the maximum extent practicable is a higher standard than reasonably practicable. The discussion of mitigation in the document does not speak about noise mitigation "to the maximum extent practicable."

The Chapter 1 of the *CEQR Technical Manual* requires the DEIS to address mitigation:

243.5. Mitigation

CEQR requires that any significant adverse impacts identified in the EIS be minimized or avoided to the greatest extent practicable. Mitigation measures must be identified in the EIS. A range of mitigation measures may be presented and assessed in the DEIS for public review and discussion, without the lead agency selecting one for implementation. Where no mitigation is available or practicable, the EIS must disclose the potential for unmitigatible significant adverse impacts.

Chapter 1 of the *CEQR Technical Manual* requires the FEIS to address mitigation:

252. Mitigation

Measures that minimize identified significant adverse impacts to the maximum extent practicable must be identified in the FEIS. If a range of possible mitigation measures for a given significant impact was presented in the DEIS, selected mitigation and its method of implementation must be disclosed in the FEIS. Certain mitigation measures that require implementation by, or approval from, city agencies (such as changes to traffic signal timing, which would be implemented by DOT) should be agreed to in writing by the implementing agency before such mitigation is included in the FEIS. In addition, in the absence of a commitment to mitigation or when no feasible mitigation measures can be identified, a reasoned elaboration as to why mitigation is not practicable must be put forth, and the potential for unmitigated or unmitigatible significant adverse impacts must be disclosed.

In the DEIS, DEP does not adequately set out a range of mitigation measures nor does it elaborate why the mitigation proposed is not practicable. For instance, relocation of the shaft back off the property line would mitigate the noise. Eliminate overnight working hours would avoid overnight noise. (Horan and Horan/Roberts)

The FEIS should set out a range of feasible mitigation measures that are proposed. Mitigation measures that would mitigate the adverse noise impacts that were determined to not be feasible should be discussed and a "reasoned elaboration" should be set forth as to why those measures were not selected. (Horan/Roberts)

Response 350: See other responses to comments related to the requirement of the shaft site locations on the east connection site, DEP's process to reduce impacts from hours of operation, and noise control measures. At the time the DEIS

and FEIS were prepared, DEP did not have a contractor for the construction of the proposed project. Thus, the DEIS and FEIS undertook hard-look evaluations of the issues of concern, and, as noted in Section 8.1, unavoidable significant adverse impacts—to the extent they can be identified at this time—were summarized in Chapter 8 for Project 1, Shaft and Bypass Tunnel Construction, Project 2B, Bypass Tunnel Connection and RWBT Inspection and Repair, including Wawarsing, and future operation of the tunnel after repairs are completed. Unavoidable temporary significant adverse impacts were identified for neighborhood character (in the east of Hudson study area), transportation (east and west of Hudson study areas) and noise (east and west of Hudson study areas). With respect to the noise mitigation measures, DEP has developed and included in the FEIS a Conceptual Noise Mitigation Plan (see Appendix 2.19-2), which presents the maximum mitigation that can be developed at this time.

Comment 351: Re: tracking mitigation. The Mayor's Office of Environmental Coordination (MOEC) is responsible for working with the appropriate city agencies to develop and implement a tracking system to ensure that mitigation measures are implemented in a timely manner and to evaluate and report on the effectiveness of mitigation measures. (Horan)

The *CEQR Technical Manual* states that the MOEC is responsible for working with the appropriate city agencies to develop and implement a tracking system to ensure that mitigation measures are implemented in a timely manner and to evaluate and report on the effectiveness of mitigation measures. The FEIS should address how this will be accomplished. (Horan/Roberts)

Response 351: The references extracted from the *CEQR Technical Manual* relate to projects subject to CEQR to ensure that mitigation measures, which may not be in the control of the lead agency, are implemented appropriately. For projects outside New York City, MOEC is not involved. DEP would be responsible for tracking mitigation directly under its control and for coordinating with other agencies responsible for implementing measures not under DEP direct control.

Comment 352: Section 8.0-1 (page 8.0-1) Should this section include neighborhood community character impacts due to the proposed landscape plan that creates a landscape that appears as if it is a landfill? (Arent)

Response 352: In the period between the issuance of the DEIS and FEIS, DEP further refined the landscaping plans for the connection sites during and after construction. The DEIS noted that no significant adverse impacts on visual

and neighborhood character are expected at the west connection site, and this conclusion is still applicable for the FEIS.

Comment 353: Chapter 8 essentially states that there are unavoidable significant adverse impacts with respect neighborhood character, transportation, and noise. Chapter 8 is conclusory, and does not explain why these significant adverse impacts are unavoidable, and why additional mitigation is not practical. The DEIS does not appear to acknowledge that although impacts may technically be "temporary," they are certainly long term. Lastly, the general tenor of the DEIS does not give the reader the correct impression as to the magnitude of the adverse impacts. (Stolman)

Response 353: In each section of the DEIS, a detailed, conservative presentation of the potential adverse impacts that would result from Project 1 construction was undertaken. In addition, for several areas of technical study, such as traffic and noise, the potential impacts from construction of Project 2B in relation to connection of the tunnel were also included in the DEIS. Where potential adverse impacts were identified for the respective worst-case scenarios, following the approach suggested under SEQRA, the *CEQR Technical Manual*, and as noted in the Final Scope of Work, the determination of the significance of impacts from construction activities was based on an assessment of the predicted intensity, duration, and the geographic extent of the impacts. The word "temporary" was used for construction because phases of construction would vary, and, ultimately, construction would be complete and the impacts during construction would no longer occur. While many areas where impacts were identified would no longer occur after construction is complete, the DEIS recognized that due to the criteria listed above, predicted significant adverse impacts would be expected in many cases due to the duration of construction.

Comment 354: While the Town (of Wappinger) recognizes the DEP mandate as stated, the town does not have to agree to the implied conclusion that it must accept the full brunt of the acknowledged "unmitigated significant adverse impacts." DEP must make a greater effort to mitigate the impacts that will occur during the construction period that will run 7½ years from 2013 to 2020 (per page ES-1). (Gray)

Response 354: In the period between the issuance of the DEIS and FEIS, DEP had numerous meetings with Town of Wappinger representatives to review the DEIS materials and conclusions. As a result of these important and useful sessions, DEP has made additional changes in the proposed program and developed additional measures, such as the Conceptual Noise Mitigation Plan (see Appendix 2.19-2), that would be implemented by DEP

throughout construction to mitigate significant adverse impacts to the extent that they can.

10.0-3.11 MISCELLANEOUS COMMENTS ON THE DEIS

Comment 355: The hard copy of the DEIS which NYSDEC received did not contain the numerous appendices which accompany the document; however, the CD of the DEIS did contain all appendices. The absence of the appendices from the hard copy DEIS is unnecessarily confusing and should be corrected in the FEIS. (Ballard)

Response 355: A hard copy of the appendices will be submitted to NYSDEC as part of the FEIS. For all other entities, a CD containing the appendices was included with the FEIS in an effort to reduce paper.

Comment 356: The Table of Contents of the hard copy of the DEIS which NYSDEC reviewed did not contain references to the numerous appendices which (should) accompany the document. The FEIS should incorporate and clearly list all appendices which are part of the document, especially as the appendices contain the bulk of the scientific data which support the DEIS. This omission should be corrected in the FEIS. (Ballard)

Response 356: The Table of Contents has been updated to include all appendices.

Comment 357: The Table of Contents contained many pagination errors. The entire DEIS should be revised so that page referenced are consistent throughout the document. (Ballard)

Response 357: The pagination in the Table of Contents has been revised for the FEIS. ✷