STATE OF NEW YORK
OFFICE OF THE ATTORNEY GENERAL

BARBARA D. UNDERWOOD
ATTORNEY GENERAL

DIVISION OF SOCIAL JUSTICE
ENVIRONMENTAL PROTECTION BUREAU

August 23, 2018

By Email and USPS First Class Mail

Ms. Victoria Desidero
Administrative Assistant
Town of Southeast Planning Board
1 Main Street
Brewster, NY 10509

Re: Northeast Interstate Logistics Center DEIS
Watershed Inspector General Comments

Dear Town Board Members:

The Office of Watershed Inspector General (WIG or WIG Office) respectfully submits the following comments on the draft environmental impact statement (DEIS) for the proposed Northeast Interstate Logistics Center development (the Project). The WIG Office appreciates this opportunity to comment on the Project and looks forward to working with the Town, Watershed regulators, the Project sponsor, and other stakeholders as environmental review of the Project proceeds.

Respectfully Submitted,

Philip Bein
Watershed Inspector General
New York State Attorney General's Office
The Capitol
Albany, New York 12224
(518) 776-2413

Charles Silver, Ph.D.
Watershed Inspector General Scientist
NYS Office of the Attorney General
The Capitol
Albany, New York 12224
(518) 667-2395

cc by email: Cynthia Garcia DEP
Matt Giannetta DEP
Tom Snow DEC

Comments of the Office of the
Watershed Inspector General
August 23, 2018

Draft Environmental Impact Statement
Northeast Interstate Logistics Center
Town of Southeast
Putnam County, New York

The Office of the Watershed Inspector General ("WIG" or "WIG Office")[1] respectfully submits these comments on the draft environmental impact statement ("DEIS") concerning the proposed Northeast Interstate Logistics Center project ("the Project"). The proposed distribution center will receive, consolidate, repackage, assemble, refrigerate, store, label, and ship nonhazardous goods and materials. The project would discharge into the watershed of New York City's Middle Branch Reservoir, part of the City's Croton system, which has historically provided drinking water to almost one million New Yorkers each day.

I. Summary

The project site is 328 acres in size and located on either side of Pugsley and Fields Corner Roads, to the northwest of the Interstate 84 and Route 312 interchange. The project site is less than a mile from the Middle Branch Reservoir. Construction of four, extraordinarily large "warehouse-like" structures, with associated parking spaces is being proposed. Existing on-site wells will provide water to the Project and the construction of four subsurface sewage disposal systems is being proposed, one for each building.

The Project would disturb 133 acres of land or approximately 40% of the site, including 0.05 acres of wetlands, and 7.8 acres of wetland buffers. It would create 57.2 acres impervious surface, including 1.125 million square feet of building space, 756 parking spaces for cars, 404 truck trailer spaces for trucks, and roads.

Six freshwater wetlands are present on site. Three of the wetlands (#2, #4, and #5) are part of the DEC Class I Wetland LC-18. Wetland #6 is part of the DEC Class II Wetland LC-28. The remaining wetlands (#1 and #3) are locally regulated. According to page III.D-15 of the DEIS, 2.44 acres of buffer located adjacent to

[1] The position of WIG was established by Executive Order No. 86 on August 19, 1998, and continued in accordance with Executive Order No. 5 on January 1, 2007. See 9 NYCRR §§ 5.86, 6.5. Pursuant to these Executive Orders, the WIG's purpose is "to enhance current efforts to protect the New York City drinking water supply from activities that have the potential to adversely affect the New York City Watershed reservoirs and tributaries." See id., § 5.86. The WIG is a joint appointee of the Governor and Attorney General within the employ of the Attorney General.

NYSDEC designated wetlands are proposed for disturbance, as are 5.37 acres of Town-only regulated wetland buffers.

The site drains to Beaver Brook and two unnamed perennial streams before flowing into the Middle Branch Reservoir. Beaver Brook is a NYSDEC Class C trout spawning (TS) stream.

The WIG Office submits these comments because it is concerned about the water pollution impacts the Northeast Interstate Logistics Center project, in its current form, would have on the Middle Branch Reservoir and its watershed. The WIG Office does not oppose Northeast Interstate Logistics Center. Rather, by these comments WIG seeks reasonable and feasible modifications to the Project to eliminate its discharges of phosphorus and other pollutants in stormwater runoff, ensure that wastewater effluent is properly disposed of, and ensure compliance with the federal Clean Water Act and New York's water pollution control law.

As discussed in section IV, below and in the attached Technical Appendix, the Project's current design and plans for addressing water pollution are in need of great improvement. The Project as currently proposed would likely exacerbate existing pollution problems in the Middle Branch Reservoir's watershed by causing a substantial increase of phosphorus and other pollutants in stormwater runoff leaving the site.

Because the Project, as currently proposed, falls so far short of protecting water quality, the WIG Office recommends that the Planning Board reject the DEIS as not adequate and require the Sponsor to submit a revised or supplemental DEIS that will be subject to further public comment.

II. The Middle Branch Reservoir and Phosphorus Pollution from Construction and Development

The proposed Project is located entirely within the watershed of the Middle Branch Reservoir; accordingly stormwater runoff from the Project site will drain to that Reservoir. The Middle Branch Reservoir is part of the Croton system of the New York City Watershed, which can supply as much as thirty percent of the water relied on by New York City and other communities each day. *Friends of Van Cortlandt Park v. City of N.Y.*, 95 N.Y. 623, 626 (2001). Water from the Middle Branch flows to the Croton Falls Reservoir, then to the Muscoot Reservoir, before entering the New Croton Reservoir. It is filtered in Van Cortland Park in the Bronx, prior to chlorination and distribution to consumers.

Pursuant to ECL § 17-0301, DEC has promulgated water quality standards for the Middle Branch Reservoir, designating it a Class A water body. 6 N.Y.C.R.R.

§ 864.6. Class A waters are intended to be used as "a source of water supply for drinking, culinary or food processing purposes; primary and secondary contact recreation; and fishing." 6 N.Y.C.R.R. § 701.6(a). DEC water-quality standards prohibit discharges of pollutants into the Middle Branch Reservoir "in amounts that will result in growths of algae, weeds and slimes that will impair the waters for their best usages." 6 N.Y.C.R.R. § 703.2. These standards also prohibit discharges into the reservoir of "[t]aste-, color-, and odor-producing, toxic and other deleterious substances . . . in amounts that will adversely affect the taste, color or odor thereof, or impair the waters for their best usages." *Id.*

The Middle Branch, like many other reservoirs within the New York City Watershed, is "eutrophic," having excessive algae growth in the growing season because of discharges of the pollutant phosphorus into the reservoir.[2] Excessive algae growth impairs the taste and odor of reservoir water and depletes levels of dissolved oxygen in the reservoir's bottom waters, impairing aquatic life and releasing metals and phosphorus into the water.[3]

As a result of the phosphorus pollution in the Middle Branch, the reservoir fails to comply with water quality guidelines and standards established by DEC pursuant to State law and the federal Clean Water Act, 33 U.S.C. § 1251 *et seq.* The Middle Branch's drainage basin is a "phosphorus restricted basin" because phosphorus concentrations exceed DEC guidelines. *See* 10 NYCRR §§ 128-1.6(a)(80), 4.1(c)). The sources of the phosphorus pollution include upstream wastewater treatment plants, other point sources (including stormwater runoff discharged from municipal storm sewer pipes) and non-point sources, such as non-channelized stormwater runoff.[4]

The key regulatory program for restoring water quality to the Middle Branch Reservoir — the Total Maximum Daily Load ("TMDL") process — began in 1994 when DEC submitted (and EPA accepted) a list of water-quality-limited water segments within the New York City Watershed, including the Middle Branch Reservoir. In 1997, DEC developed Phase I TMDLs for the Middle Branch Reservoir based on samples of water taken in the Middle Branch between 1990 and 1994.[5] In 2000, DEC submitted, and EPA accepted, Phase II TMDLs for the Middle

---

[2] New York City Department of Environmental Protection, "Proposed Phase II Phosphorus TMDL Calculations for Middle Branch Reservoir," March 1999 (DEP Middle Branch Report), at 2-3, 14.

[3] DEP Middle Branch Report, at 2; *see* Nat'l Research Council, *Watershed Management for Potable Water Supply: Assessing the New York City Strategy*, at 106-07 (2000) (hereinafter NRC Study).

[4] *See* DEP Middle Branch Report, at 22.

[5] *See* NRC Study, *supra*, at 2, 5-6, 102-05, 109. The Phase I TMDLs can be found at: http://www.epa.gov/waters/tmdldocs/NY-1997-Phosphorus-Phase%201%20NYC%20Watershed.pdf

Branch Reservoir and other City reservoirs.[6] Based on sampling of water taken from the Middle Branch between 1992 and 1996, DEC found increased phosphorus pollution of that water body and required further reductions in phosphorus loadings to the Middle Branch in the Phase II TMDLs.[7]

The construction and development of land is a major source of phosphorus and other pollutants that discharge into the Middle Branch Reservoir in stormwater runoff. "Stormwater pollution is one of the most significant sources of water pollution in the nation." *Environmental Def. Ctr., Inc. v. EPA*, 344 F.3d 832, 840 (9th Cir. 2003). According to EPA, "[u]ncontrolled storm water discharges from areas of urban development and construction activity negatively impact receiving waters by changing the physical, biological, and chemical composition of the water, resulting in an unhealthy environment for aquatic organisms, wildlife and humans," and can "severely compromise" water quality.[8]

Discharges of stormwater from construction sites include sediment, a pollutant which also serves as a carrier of other pollutants, such as nutrients (including phosphorus), metals, organic compounds, and pathogens. "It is generally acknowledged that erosion rates from construction sites are much greater than from almost any other land use."[9] Sediment loads in stormwater discharges from inadequately controlled construction sites can be typically 1,000 to 2,000 times the sediment loads discharged from undeveloped forested land.[10]

Post-construction stormwater discharges from developed areas are also a major source of pollution to the waters of the United States. "Urbanization alters the natural infiltration capability of the land and generates a host of pollutants . . . thus causing an increase in storm water runoff volumes and pollutant loadings."[11] Land development "can result in both short- and long-term adverse impacts to water quality in lakes, rivers and streams within the affected watershed by

---

[6] *See* "Phase II Phosphorus Total Maximum Daily Loads for Reservoirs in the New York City Water Supply Watershed," dated June 2000 (hereinafter, Phase II TMDLs). The Phase II TMDLs can be found at: http://www.dec.ny.gov/docs/water_pdf/nycjune2000.pdf

[7] *Id.*, at 20.

[8] "National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Stormwater Discharges; Final Rule," 64 Fed. Reg. 68722, 68724, 68728. (Dec. 8, 1999) (hereinafter, 1999 Preamble & Rule).

[9] *Id.*

[10] EPA, "Storm Water Phase II Final Rule: Small Construction Program Overview (Fact Sheet 3.0)," EPA 833-F-00-013 (Jan. 2000), available at http://www.epa.gov/npdes/pubs/fact3-0.pdf.

[11] 1999 Preamble & Rule, 64 Fed. Reg. at 68725.

increasing the load of various pollutants in receiving water bodies, including sediments, metals, organic compounds, pathogens, and nutrients."[12] EPA has determined that urban runoff and storm sewer discharges were the second leading source of water quality impairment in estuaries and the third leading source of such impairment in lakes, ponds and reservoirs.[13]

Stormwater pollution from construction and development is of great concern for the Middle Branch Reservoir. Because of the focal role of stormwater pollution, in impairing that drinking water source, DEC determined in its Phase II TMDLs that phosphorus discharges in stormwater runoff to the Middle Branch are much greater than phosphorus discharges from sewage treatment plants, and must be reduced by 204 kilograms per year.[14]

III. Applicable Law

WIG's review of the DEIS implicates the State Environmental Quality Review Act ("SEQRA"), the Clean Water Act, and New York's water pollution control law, codified as Article 17 of the New York Environmental Conservation Law ("ECL").

A. SEQRA

Under SEQRA, the lead agency "having principal responsibility for carrying out or approving" an action regulated by SEQRA must determine if the action "may have a significant effect on the environment." ECL § 8-0111(6). If the lead agency determines that the action may have such effect, the agency issues a "positive declaration" and must prepare a draft environmental impact statement, which is subject to public comment and review before being finalized as a final environmental impact statement ("FEIS"). ECL § 8-0109(5); 6 N.Y.C.R.R. § 617.7(a)(1).

Environmental review under SEQRA must be comprehensive; it must cover all "relevant areas of environmental concern." *Har Enterprises v. Town of Brookhaven*, 74 N.Y.2d 524, 529 (1989). In the context of a development project, such as Northeast Interstate Logistics Center, in a sensitive watershed (such as the Middle Branch drainage basin), SEQRA review must thoroughly address pollution

---

[12] EPA, Draft Proposed Rule for Effluent Limitations Guidelines and New Source Performance Standards for the Construction and Development Category, Docket No. 01644, at 49-50. February 12, 2002.

[13] EPA, "National Water Quality Inventory: 2000 Report at 22 & 30," EPA-841-R-02-001 (Aug. 2002), available at http://www.epa.gov/305b/2000report/chp3.pdf & http://www.epa.gov/305b/2000report/chp4.pdf.

[14] Phase II TMDLs at 20.

impacts that "might adversely affect nearby water supplies." *Inland Vale Farm Co. v. Stergianopoulis*, 65 N.Y.2d 718, 720 (1985).

When an environmental impact statement submitted by a sponsor is inadequate, the lead agency should reject it and require submission of a revised document that will be subject to public comment. *See* 6 NYCRR § 61 7.9(a)(2). *Matter of Jul-Bet Enterprises, LLC v. Town Board of Town of Riverhead*, 48 A.D.3d 567 (2d Dep't 2008) (lead agency can reject DEIS as inadequate more than 45 days after receipt of document); *Matter of Pheasant Meadow Farms, Inc. v. Town of Brookhaven*, 31 A.D.3d 770 (2d Dep't 2006) (delay in completion of DEIS or issuance of negative declaration excused for project which "presents significant environmental concerns with respect to storm water drainage").

"When an agency decides to carry out or approve an action which has been subject to an environmental impact statement," it must issue SEQRA findings showing that SEQRA's requirements have been met and that any environmental effects revealed in the review process will be "minimized or avoided to the maximum extent possible." ECL § 8-0109(8); 6 N.Y.C.R.R. § 617.11.[15] An agency's approval of an action under SEQRA requires "incorporating as conditions to the decision those mitigative measures that were identified as practicable." 6 N.Y.C.R.R. § 617.11(d). Because SEQRA requires mitigation of environmental impacts, it "is not merely a disclosure statute; it imposes far more action-forcing or substantive requirements on state and local decision makers than [the National Environmental Policy Act] imposes on their federal counterparts." *Matter of Jackson v. N.Y. State Urban Dev. Corp.*, 67 N.Y.2d. 400, 415 (1986) (internal quotations omitted).

B. The Clean Water Act and ECL Article 17

Under the Clean Water Act, the "primary means" for achieving water-quality standards is the National Pollutant Discharge Eliminations System ("NPDES") permitting program for discharges of pollutants by "point sources" — discrete conveyances, such as pipes carrying effluent from wastewater treatment plants and storm sewer pipes carrying polluted stormwater runoff. *See Arkansas v. Oklahoma*, 503 U.S. 91, 101 (1992); 33 U.S.C. §§ 1311(a), 1342. These permits contain "effluent limitations" that "restrict the quantities, rates, and concentrations of specified substances which are discharged from point sources." *Arkansas v. Oklahoma*, 503 U.S. at 101; *see* 33 U.S.C. § 1311.

---

[15] Alternatively, the agency can disapprove the action based on adverse environmental effects disclosed during SEQRA review or on other grounds. *See, e.g., Matter of Fawn Builders, Inc. v. Planning Bd.*, 223 A.D.2d 996 (3d Dep't 1996); *Town of Henrietta v. DEC*, 76 A.D.2d 215, 226 (4th Dep't 1980) ("SEQRA is not intended to take away the jurisdiction or authority already granted" to government agencies).

When the effluent limitations on point sources alone are not sufficient to restore the quality of a waterway, the Clean Water Act requires further action. The States must identify water bodies for which the technology-based effluent limitations are insufficient to achieve standards and develop TMDLs to remedy the problem. 33 U.S.C. §§ 1313(d)(1)(A), 1313(d)(1)(C), (2); 40 C.F.R. § 130.2(e)-(i).

However, until water quality standards have been achieved, a "new source" or "new discharger," as here with Northeast Interstate Logistics Center, "from which there is or may be a discharge of pollutants [that] will cause or contribute to the violation of water quality standards," may not receive a NPDES permit authorizing such discharges.[16] 40 C.F.R. § 122.2, §§ 122.4(a), (d), (i); *Friends of Pinto Creek v. EPA*, 504 F.3d 1007, 1011-12 (9th Cir. 2007). Similarly, DEC, which administers the NPDES program in New York (called the State Pollutant Discharge Elimination System or "SPDES") and its own water pollution laws under Article 17 of the Environmental Conservation Law, prohibits discharges of pollutants that would "cause or contribute to" the violation of water quality standards. ECL §17-0811(5); SPDES GP-0-15-002. DEC requires all SPDES permits it issues to include provisions "necessary to insure compliance with water quality standards," and cannot issue permits without such provisions. 6 NYCRR §S 750-1.3(e), (f).

IV. WIG's Concerns Regarding the DEIS for Northeast Interstate Logistics Center

A. Deficiencies in the SWPPP

As discussed in the attached Technical Appendix, the Project's current design and plans for addressing water pollution are deficient and need to be significantly improved. The Project's SWPPP does not demonstrate that proposed stormwater management structures and erosion and sediment controls comply with applicable State standards and will be effective in preventing stormwater pollution of the Middle Branch Reservoir watershed.

Among other problems, the hydrologic calculations for stormwater management at the site must be completely redone with calculations for T_c values based on appropriate flow paths and the correct rainfall distribution. In addition, a significant number of site soil infiltration tests must be performed to determine whether proposed stormwater infiltration practices will be feasible and effective.

---

[16] An exception occurs where all existing dischargers are subject to compliance schedules to achieve water quality standards and the new discharger's pollution would not impede achievement of compliance under those schedules. 40 C.F.R. § 122.4(i). The exception does not apply to Northeast Interstate Logistics Center because existing dischargers in the Middle Branch drainage basin are not bound to compliance schedules.

In the SWPPP, essential details and specifications for proposed erosion and sediment controls are missing. Accordingly, the applicant has come well short of demonstrating compliance with State standards for such controls, which are needed to prevent pollutant discharges during construction.

B. Increases in Phosphorus Pollution in Stormwater Runoff

The Middle Branch Reservoir is already heavily polluted by phosphorus. As shown in the Technical Appendix, the Project as currently proposed would likely exacerbate the problem by causing a substantial increase of phosphorus pollution in stormwater runoff leaving the site. To mitigate this problem, any net increase in phosphorus pollution from the site should be offset by further on-site phosphorus reductions or off-site retrofit projects.

As discussed in Part III above, because the increases in pollution "will cause or contribute" to existing violations of water quality standards in the Middle Branch Reservoir, a permit that would authorize the pollution cannot be issued for the Project in its current form under the Clean Water Act or Article 17 of the New York Environmental Conservation Law without a demonstration that the Project will not cause a net increase in phosphorous discharges. The DEIS and SWPPP do not include such an analysis.

C. Wetland and Wetland Buffers

Wetlands provide flood control, wildlife habitat, and improve drinking water quality by accumulating and retaining nutrients, trapping sediments, removing and transforming human and animal wastes, and degrading certain pollutants. Any disturbance to wetlands or their adjacent areas within the Watershed is highly disfavored. The restoration or re-creation of wetlands that have been disturbed is often far less successful than anticipated. In short, development should be re-directed away from wetlands and their buffer areas.

The importance of wetlands to the protection of drinking water quality and maintenance of site hydrology is well accepted and understood. The proposed project should be redesigned so that wetlands and wetland buffers are left undisturbed.

V. Conclusion

The WIG Office appreciates this opportunity to submit these comments on the Northeast Interstate Logistics Center DEIS.

We request that, in light of the scope and scale of the deficiencies in the DEIS, the Town reject the DEIS as not adequate and require the Sponsor to submit a revised or supplemental DEIS that will be subject to further public comment.

Respectfully submitted,

Philip Bein
Watershed Inspector General
New York State Attorney General's Office
The Capitol
Albany, New York 12224
(518) 776-2413

Charles Silver, Ph.D.
Watershed Inspector General Scientist
NYS Attorney General's Office
The Capitol
Albany, New York 12224
(518) 776-2395

Northeast Interstate Logistics Center

Draft Environmental Impact Statement

Technical Appendix

Northeast Interstate Logistics Center

NY Route 312 & Pugsley Road

Town of Southeast, Putnam County, NY

Review of the Draft Environmental Impact Statement

Prepared by JMC, Inc. dated June 2018

By: Donald W. Lake, Jr. PE

on behalf of the Office of the Watershed Inspector General

August 23, 2018

The following comments are based on my review of the documents listed below:

a. Draft Environmental Impact Statement, June 2018, Volumes I & II; Volume II contains the DEIS Appendices without Appendix D-1.
b. Appendix D-1, Preliminary Stormwater Pollution Prevention Plan (SWPPP), prepared by JMC, Inc., dated November 6, 2017 (1,150 pages); with its own Appendices A through I.
c. DEIS Site Plan Approval Drawings C-000 through C-906, 56 sheets, dated November 6, 2017.

Background

This project proposes to construct 4 "High Cube Warehouses" (HCW) and associated infrastructure on 328 primarily wooded acres. The 4 HCWs total 1,124,575 square feet on 25.82 acres, not including roads or parking areas. Building 1 will occupy 6.0 acres, Building 2 - 3.99 acres, Building 3 - 7.42 acres, and Building 4 - 8.41 acres.

One hundred and thirty-two acres of land, or approximately 40% of the site, will be disturbed. Approximately 57.2 acres, or 17% of the site, will become impervious area. This includes 756 parking spaces for cars and 404 truck parking spaces. Water will be provided by two of the three wells on site. And a sub-surface sewage disposal system (SSDS) is proposed for each of the 4 HCW buildings.

Stormwater runoff from the proposed project will flow into the Middle Branch Reservoir, which is located approximately 3,800 feet to the southwest. According to the DEIS, site runoff will be treated by infiltration basins and detention ponds. The receiving water or Middle Branch Reservoir is already phosphorous impaired and has a total maximum daily load (TMDL).

General Comments

The narrative portions of the DEIS Executive Summary and the preliminary Stormwater Pollution Prevention Plan (SWPPP) should be revised to address the following:

a. A detailed construction phasing plan is not provided in the DEIS and SWPPP. In addition, the associated sequence of operations within each construction phase is missing. These required elements must be addressed.
b. DEIS, page I-29, states that the intent of the grading plan is to balance cuts and fills. However, neither cut nor fill calculations are presented in the DEIS or the SWPPP. This calculation is a required by the NY General Permit for Stormwater Discharges from Construction Activities, GP-0-15-002, for activities that disturb more than 5 acres of land at one time.
c. DEIS, pages I-12 and III.D-15, state that 0.05 acres of NYSDEC wetlands will be disturbed, while page 15 of the SWPPP says that 0.15 acres of wetland will be disturbed. This discrepancy needs to be reconciled.
d. DEIS, page I-12, states that 7.68 acres of DEC and Town wetland buffer will be disturbed, while 7.81 acres appear to be disturbed on pages I-27 and III.D-15, and according to page 15 of the SWPPP, 11.7 acres of wetland buffer will be disturbed. This discrepancy needs to be reconciled.
e. SWPPP, Preliminary Site Plan Approval Drawings, the soil boundaries from the web soil survey data must be placed on all site plan views, including the existing condition plan, proposed grading plan, and the erosion control plan.
f. According to the DEIS and SWPPP, there are approximately 130 total acres of woods and brush to be cleared and grubbed. This will generate a significant amount of vegetative waste (e.g. stumps). However, there is no narrative describing how this vegetative waste material is going to be handled and disposed. In addition, the location for the disposal of this material needs to be shown on the appropriate drawings. The construction phasing plan must show how the waste generated in each phase will be disposed.
g. DEIS, page I-25, Section 4, 1st paragraph, final sentence, following "Chapter 6" add the words "and Chapter 10", which refers to the enhanced

phosphorus removal criteria in the January 2015 NYS Stormwater Management Design Manual.

h. SWPPP, page 7, 2. remove the third bullet statement since this statement is inaccurate and does not appear in the stormwater criteria.
i. DEIS, page I-53, add the Office of the NYS Attorney General, Watershed Inspector General, Environmental Protection Bureau as an interested party.

Erosion & Sediment Control

1. SWPPP, page 38, states that all rock riprap aprons will be 10 feet by 10 feet in size. This sizing does not comply with the 2016 NYS Standards and Specifications for Erosion and Sediment Control (aka 2016 Blue Book). In addition, all rock outlet protection structures (ROP) must meet the criteria shown on page 3.39 of the 2016 Blue Book. Although this design data is shown on drawing C-905 in Detail 77, the title of the detail is missing and needs to be provided.

2. SWPPP, page 39, 7, states that a permanent vegetative cover must consist of 70% perennial vegetation. However, New York State requires that a permanent vegetative cover consist of at least 80% perennial vegetation. This discrepancy needs to be addressed.

3. SWPPP, page 40, Soil Restoration, the table that appears on page 40 should be placed on the site drawings in the Erosion & Sediment Control set.

4. SWPPP, page 42, the 2nd paragraph states that "denuded" surfaces that have been left for a period of 2 months must be seeded. New York State requires that all exposed areas left for over 14 days must be stabilized with seed and mulch. Due to the large exposed areas for this project, greater than 5 acres at a time, and its proximity to the Middle Branch Reservoir, this requirement needs to be tightened to 7 days. This correction needs to be made in the SWPPP and in the notes on the E&S drawings sheets C-401 to C-405.

5. SWPPP, page 44, a narrative must be added to this section recognizing that this project is in a phosphorous impaired watershed. The narrative needs to discuss the application of fertilizers, which are governed by the NY Nutrient Runoff Law. The project also needs to comply with the Fertilizer Application standard on page 4.21 in the 2016 Blue Book.

6. Sheet C-900 and SWPPP page 29, Detail 3 of the drawing shows catch basins equipped with Silt Sack to collect sediment. This practice does not meet NYS standards and must be removed. Catch Basin inserts must meet the standard for Storm Drain Inlet Protection on page 5.57 of the 2016 Blue Book.

7. Sheet C-900, detail 2 shows a riser and anti-vortex device for a sediment basin. This detail needs to be deleted and replaced with a full design for a sediment basin that complies with the Sediment Basin standard on page 5.19 of the 2016 Blue Book. This will also require the hydrologic analysis for the 10-year storm, since all drainage areas will exceed 5 acres. In addition, all basins will require a skimmer dewatering device designed in accordance with that standard on page 5.10 of the 2016 Blue Book.

8. Sheet C-900, change the title of Detail 8 to Stabilized Construction Access and make the width 24 feet instead of 20 feet to agree with the standard on page 2.30 of the 2016 Blue Book.

9. Sheets C-401 to C-405,
    a. Indicate the slope steepness for the cut and fill slopes (e.g. 2:1)
    b. Label and include the soil survey boundaries on all plan views.
    c. Locate all sediment traps and basins on applicable soil plan drawings and show their respective drainage areas, storage volumes, and outlet structures.
    d. Silt fence is shown right at the toe of fill slopes. Silt fencing should be moved 10 feet from the toe of slope to collect sediment and maintain its integrity.
    e. Note 5 needs to establish that a "Qualified Inspector" will be making inspections and filing their reports in accordance with NY General Permit for Stormwater Discharges from Construction Activities (GP-0-015-002). In this case, since more than 5 acres will be open at one time, this requires 2 inspections per week, separated by 2 days.
    f. Proposed stockpile and staging areas need to be designated.
    g. As noted in #5 above, change generic note 7 to delete the 14-day stabilization reference to read only "7" calendar days for this specific site.
    h. A detailed construction phasing plan is needed with appropriate sequencing within each phase. The generic narrative provided is not detailed enough to minimize potential environmental impacts from

large exposed areas. Cut and fill volumes for each phase also need to be provided. See NY General Permit for Stormwater Discharges from Construction Activities (GP-015-002, Part II, C.3.a).

Water Quantity

10. SWPPP, page 10, 12. States that the Soil Conservation Service (SCS) Type III rainfall distribution was used to calculate peak runoff values. The Type III rainfall distribution was replaced in January 2011 by the NY Natural Resources Conservation Service (NRCS), with rainfall distributions calculated from the Northeast Regional Climate Center (NRCC). This allows for a different rainfall distribution for each frequency event by importing the NRCC rainfall table into the hydrologic computer model. NRCS TR20, HydroCAD, and other models can do this. Once the computer model is run, the entire routing set can be re-run for appropriate values.

11. SWPPP, Appendix A. Pond Pack 3.01, for the time of concentration (T_c) calculations, the manning coefficient for sheet flow (SF) was 0.24 for all watersheds but one. Based on the existing wooded areas on site, 0.40 (woods, light, from TR55) is more appropriate. In addition, the shallow concentrated flow (SCF) used in these routings was taken as Unpaved as noted in TR55, where the only choices are Paved or Unpaved. U.S. Department of Agriculture (USDA) NRCS National Engineering Handbook (NEH) Section 4 "Hydrology" offers 6 additional land descriptions for shallow concentrated flow. To compare, the velocity vector for Unpaved is 16.1 feet per second, whereas the velocity vector for SCF in Woodland is 5.0 feet per second. The slower rate leads to a longer T_c, which reduces the existing peak discharges for all frequency events. The current T_c for all events need to be re-calculated, and the routings redone.

12. SWPPP, page 10, Table 1, there is a difference between these peak runoff values and the Pond Pack runoff values for the computed time interval. For example, for existing drainage area 1 (EDA-1), the 100-year peak runoff value is 192.51 cubic feet per second (cfs) in the table but 193.05 cfs on the Pond Pack output for the computed time interval. This discrepancy needs to be resolved.

13. SWPPP, page 1,049, some drainage area boundaries and some T_c flow paths appear to be misdrawn. The drainage area boundaries need to be drawn from the design point to catch all runoff that would flow to that point. The T_c flow

path is that path that is the hydrologically most distant point in the watershed. It cannot cut across contours of the same elevation. The maps supplied have no contour elevations shown. A better drainage area map needs to be provided with contours and more detailed delineated drainage area boundaries for analysis.

14. SWPPP, Appendix A, Pond Pack EDA analysis; I created an independent analysis for EDA-3 to compare how parameter changes affected peak discharges. I created 3 separate HydroCAD files for EDA-3 and compared the results to Table 1 on page 14 of the SWPPP for the following three storms. The results follow:

	SWPPP	H'CAD* 1	H'CAD 2	H'CAD 3
1 Year	24.92	25.21	22.49	20.27
10 Year	89.75	91.29	81.02	71.93
100 Year	225.63	230.51	204.44	176.65

* H'CAD = HydroCAD

H'CAD 1 is the existing EDA-3 with all the SWPPP parameters entered as they appear in the Bentley Pond Pack model. You can see the H'CAD values are slightly higher, but essentially agree with the SWPPP.

H'CAD 2 utilizes a Manning's coefficient of 0.4 for woodland instead of the SWPPP value of 0.24 for dense grass. It also uses the USDA NRCS NEH Section 4 overland flow velocity factor of 5 feet per second for woodland, instead of the TR55 value of 16.1 feet per second for "Unpaved" surfaces. These changes result in a longer T_c, and thus lower peak rates of discharge.

H'CAD 3 uses the changed coefficients in H'CAD 2, but now they are used with the NRCC rainfall distributions for the site instead of the outdated Soil Conservation Service Type III rainfall distribution. You can see there are significant reductions in the peak flow rates across all storms (e.g. approximately 22% for the 100-year storm).

Based on the results of this review, the hydrologic modeling should be rerun, using the appropriate coefficients and rainfall distributions. This is applicable to both the existing and the developed condition, and particular care should be taken when delineating the drainage areas and T_c flow paths.

15. Drawings C-301 to C-305, there are 6 infiltration basin/detention pond systems with approximately 13 outlet control structures (OCS) shown on these sheets. However, the OCS detail on sheet C-905 is generic and does not provide the level of detail required to evaluate each structure. This detail also lacks a number. This information must be provided on the drawings for all structures.

16. Drawing C-906, Detail 81 shows a detail for an underground detention storage facility (Stormtech Chambers MC-3500). Unfortunately, there are no details included on the grading plan (e.g. elevations) which show how this system is to be constructed. These details are needed. Also, on Drawing C-906, another OCS detail, number 82, is also generic and does not provide the level of detail required to evaluate the 13 outlet control structures proposed. This information must be provided on the drawings for all structures.

17. Drawing C-905, Detail 74 shows the rock emergency spillway going over the top of the pond embankment and down a 3:1 slope. These spillways need to be constructed in natural ground and strategically located so that overtopping flow will not erode the downstream slope of the dam. Additional information pertaining to the rock emergency spillway needs to be provided.

18. The SWPPP narrative, beginning on page 18, describes stormwater runoff flow, as it is routed through various basin systems. It describes flows as "moving slowly" over weirs from forebay to infiltration basin to detention ponds. An inspection of infiltration basin 3B-1B for example, shows no details for this weir system on the C-202 Grading Plan, the C-302 Utility Plan, or the C-906 Details. Details, both in the plan view and the cross-section, must be provided for all system components.

19. SWPPP, Appendix B, Proposed Hydrologic Calculations, contains 798 pages of computer printout. Pertinent summaries of key data and information should be provided such as the runoff reduction volume (RRv) and water quality volume (WQv) results for each infiltration basin. Other key data, such as peak flow rates and water surface elevations, needs to be highlighted for recognition.

20. SWPPP, Appendix B, page 10.199 of the computer printout shows an infiltration rate for IB 3B as 1.19 cfs. How was this determined? The

estimated infiltration rate was given at 2 inches per hour on page 20 of the SWPPP. I calculated 2 inches of the hydrologic soil group (HSG) "C" soil for this basin as having an infiltration rate of approximately 0.25 cfs. (Group C soils have a slow infiltration rate). This basin has a footprint of 26,862 square feet at an elevation of 640 feet. The soil depth of 2 inches occupies 4,478 cubic feet, and with a void ratio of 20%, has available storage for 896 cubic feet of water. To fill this void over an hour is to divide 896 by 3600 seconds per hour for a result of 0.25 cubic feet per second, not 1.19 cfs.

Water Quality

21. The SWPPP details the stormwater management system on pages 18 through 24. Six infiltration basins and one underground chamber system are proposed to remove pollutants from the stormwater runoff. However, there is no infiltration test data to support their use. The developer's engineer, JMC, assigns infiltration rates of 1 inch per hour for basins 1B-1, 1B-2, 4B, and the StormTech MC-3500 unit, and 2 inches per hour for basins 3B, 5B, and 5C. These are estimates from a May 3, 2017 field visit.

    The soil survey data presented in the DEIS, Section III, makes note that the Sun, Woodbridge, and Paxton soils have slow to very slow permeability, and can have water tables within 6 inches of the ground surface. Appendix C of the SWPPP, Soil Test Data, from SEIS Consulting Engineers, dated October 1987 supports the soil survey conclusions.

    Therefore, all infiltration basin locations must be validated in accordance with Appendix D of the January 2015 NYS Stormwater Management Design Manual. The testing must be performed at the specific location and at the proposed basin bottom elevation. Infiltration basin testing is often witnessed by NYC Department of Environmental Protection personnel. Confirmatory field testing is required to prove the effectiveness of infiltration basins.

22. I performed a preliminary pollutant load analysis (PLA) using the Simple Method and loading values provided by the East of Hudson (EOH 3/15) Watershed Corporation. The existing condition total phosphorous (TP) load was calculated to be 128.1 pounds. (The major land uses were forest and roadway.) The developed condition TP load was calculated to be 304.6 pounds for land uses of forest, impervious area and commercial open space. This is approximately 2.4 times the original amount or a 138% increase.

Since the final configuration of this project is incomplete, due to a lack of design details, estimates of pollutant removal are difficult to calculate. However, if the proposed stormwater treatment practices (e.g. infiltration basin) pass their feasibility tests, a PLA can be estimated. The East of Hudson Watershed Corporation has assigned a TP removal efficiency of 50% for infiltration basins. And the detention ponds shown on the Utility Drawings are "Dry" ponds, which drain empty after each event. This means there is no permanent pool established to capture pollutants. In fact, dry ponds add to the TP load leaving the site. The 2016 www.bmpdatabase.org website shows a 67% increase in TP for grass swales and a 21% increase in TP for grass strips. This is the land use condition of the bottom of a dry pond. These values average to a 44% increase in TP estimated using a dry pond.

Hypothetically, if all 304.6 pounds were treated by the infiltration basins and 50% was removed, that would leave 152.3 pounds. If this is routed through the dry detention basins and TP was increased by 44%, we would project a TP addition of 67 pounds for a total of 219.3 pounds. This is 1.7 times the existing load and the system would not be very effective at removing TP. Other design configurations should be considered.

23. The infiltration Basin 3B configuration transfers flow from the forebay to the detention pond over weirs at the same bottom elevations. This system will flush through during larger storm events, since these events will easily push pollutant laden water from one basin to another without any detention time for pollutant settling.

    Page 6-33 of the January 2015 NYS Stormwater Management Design Manual shows the configuration for an infiltration basin with the forebay above the design high water. Note that the infiltration basin is also designed for the detention requirements, limiting discharges from the 10-year and 100-year storm. Use of this system will reduce the proposed footprint since two basins will be replaced by one basin. In addition, the outflow from the infiltration basin could be routed through a stormwater wetland which would further reduce the pollutant load prior to its entry to the natural system.

24. The Middle Branch Reservoir is phosphorous impaired (June 2000, New York State Department of Environmental Conservation Phase II Phosphorus Total Maximum Daily Loads for Reservoirs in the New York City Water

Supply Watershed (Delaware, Dutchess, Greene, Putnam, Schoharie, Sullivan, Ulster, and Westchester Counties). Table 2, column 1 on page 17 presents the calculated TMDL for total phosphorus (TP) of 949 Kg/yr. Column 2 in the table presents the available load, which is defined as the calculated TMDL minus a "margin of safety" or MOS value. For the Middle Branch Reservoir, the MOS is 14% of the calculated TMDL or 0.14 x 949 = 133 Kg/yr. Subtracting 133 Kg/year from the calculated TMDL of 949 Kg/yr = 816 Kg/yr. Column 3 presents the current total phosphorus load 1,020 Kg/yr in the Middle Branch Reservoir.

The current TP load exceeds the available load (1,020 Kg/yr – 816 Kg/yr) by 204 Kg/year. Since the current TP load exceeds the available load of the receiving reservoir, it must be reduced, as does the TP load from new construction. To determine the percent reduction needed to meet the water quality objective, the excess load is divided by the current load or 204 Kg/yr /1020 Kg/yr = .20 or 20%. To achieve a 20% reduction, the Project would need to remove an additional 25.6 pounds (128.1 lbs. x 0.2) from the current load in addition to the load created by the development after treatment. This would mean that 244.9 pounds (25.6 lbs. + 219.3 lbs.) of TP would need further reduction onsite and/or offsite in the Middle Branch Reservoir Watershed.

Summary and Conclusions

The Middle Branch Reservoir is phosphorus impaired. The current total phosphorus load already exceeds the available load by 20%. If this project is developed as planned, the post development TP load for the existing 328-acre wooded site would more than double to the reservoir, from 58 Kg/yr. to 138 Kg/yr.

The stormwater pollution prevention plan to remove phosphorus at this site is extremely deficient. As noted above, the proposed plan to use infiltration basins has not been proven feasible, as onsite infiltration testing at the basin locations is not documented in the DEIS. In addition, the hydrology analyses presented in the DEIS must be recalculated because incorrect rainfall distribution data was used to calculate peak runoff values. This information is critical to selecting and sizing stormwater treatment devices. And a detailed construction phasing plan is not provided in the DEIS. Appropriate phasing of the work, proper sequencing of construction activities, and carrying out effective erosion and sediment control practices need to be implemented to demonstrate how the phosphorus load at the site will be managed and reduced.

The proposed project also intends to eliminate between 7.68 to 11.7 acres of wetland buffer, which protect existing wetlands and helps keep TP from leaving the site.

Based on these and other deficiencies described above, the DEIS needs to be rewritten to provide the overall reduction of TP necessary to assure protection of the Middle Branch Reservoir.