



**STATEMENT OF FINDINGS
FOR THE WATER FOR THE FUTURE:
UPSTATE WATER SUPPLY RESILIENCY PROJECT**

CEQR No. 15DEP006U

Vincent Sapienza, P.E.
Commissioner

January 5, 2018

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Deputy Commissioner
Sustainability

59-17 Junction Blvd.
Flushing, New York 11373

In accordance with the requirements of the State Environmental Quality Review Act (SEQRA) (Section 8-0113, Article 8 of the Environmental Conservation Law) as set forth in 6 New York Codes, Rules, and Regulations (NYCRR) Part 617; the City Environmental Quality Review (CEQR) process, as set forth in 62 Rules of the City of New York (RCNY) Chapter 5 and Executive Order 91 of 1977 and its amendments; and the State Environmental Review Process (SERP), as required by the State Revolving Loan Fund Program, the New York City Department of Environmental Protection (DEP), acting as lead agency, issued a Notice of Completion of the Final Environmental Impact Statement (FEIS) for the proposed **Water for the Future: Upstate Water Supply Resiliency (UWSR) Project** on December 15, 2017. In accordance with 6 NYCRR Section 617.4, this project is classified as a Type I Action.

DEP issued a Lead Agency Determination, Notice of Positive Declaration, and Draft Scope of Work on October 10, 2014 and held public scoping hearings on November 13, 2014, at the Town of Newburgh Town Hall, 1496 Route 300, Newburgh, NY; on November 14, 2014, at the State University of New York (SUNY), 112 College Road, Loch Sheldrake, NY; on November 19, 2014, at the Ellenville Government Center, 2 Elting Court, Ellenville, NY; and on November 20, 2014 at the Yorktown Town Hall, 363 Underhill Avenue, Yorktown Heights, NY. Written comments were accepted throughout the public comment period, which closed on December 5, 2014. DEP issued a Final Scope of Work that responded to the public comments on September 16, 2015.

The UWSR Draft EIS (DEIS) was issued on September 19, 2016, and public hearings on the DEIS were held on October 20, 2016 at the Ellenville Government Center, 2 Elting Court, Ellenville, NY; October 24, 2016 at the Yorktown Town Hall, 363 Underhill Avenue, Yorktown Heights, NY; October 25, 2016 at the Town of Newburgh Town Hall, 1496 Route 300, Newburgh, NY; and October 28, 2016 at SUNY Sullivan, 112 College Road, Loch Sheldrake, NY. Written comments were accepted throughout the public comment period, which closed on November 14, 2016.

Subsequent to the publication of the DEIS, DEP identified an additional element of the UWSR Project. The new project element would involve the development of a new temporary transmission water main to supply the

Village and Town of New Paltz (New Paltz). This temporary transmission water main would supply water to New Paltz during those periods when DEP would need to temporarily shut down the Catskill Aqueduct for extended periods, as described in the DEIS for the UWSR Project.

DEP prepared a Supplemental EIS (SEIS) to evaluate this new element of the project. A Draft Scope of Work for the SEIS was issued on May 26, 2017, a public scoping meeting was held on June 29, 2017 at the Town of New Paltz Community Center, 3 Veterans Drive, New Paltz, NY, and written comments were accepted during the public comment period, which closed on July 11, 2017. The Final Scope of Work and Draft SEIS were issued on September 6, 2017, and a public hearing was held on September 27, 2017 at the Town of New Paltz Community Center, 3 Veterans Drive, New Paltz, NY. Written comments were accepted until the close of the public comment period on October 10, 2017.

An FEIS for the UWSR Project was issued on December 15, 2017 that included a response to public comments received on the DEIS and the SEIS.

Description of Action

The Delaware Aqueduct is critical to the nine million people who rely on the New York City water supply, including New York City and upstate residents. Shutting down the Delaware Aqueduct during the bypass tunnel connection and repair of the leak in Wawarsing may require DEP to supplement its water sources and make provisions for changes in the distribution system during the shutdown period.

DEP's Water for the Future (WFF) program was developed to address the leaks in the Rondout-West Branch Tunnel (RWBT) portion of the Delaware Aqueduct. The Delaware Aqueduct has been in operation since the 1940s and transports water a distance of approximately 85 miles from the Delaware water supply system (Delaware System) to Kensico Reservoir. The Delaware System is the source of approximately 50 percent of the City's water supply and provides water supply for two upstate municipalities as their primary source of potable water. WFF consists of two main projects:

1. Project 1: Construction of the Bypass Tunnel and Shaft Sites; and
2. Project 2: Repair of the RWBT, water supply system improvements, and distribution system changes (augmentation projects).

Project 1, referred to as the "RWBT Bypass," was previously evaluated in a FEIS issued on May 18, 2012 (previous EIS).¹ Construction began with construction of the bypass shafts in 2013. Construction of the bypass tunnel began in 2017 and is anticipated to be completed in 2022. It is anticipated that up to 8 months would be needed to complete the bypass connection and to undertake the inspection and repair of the RWBT.

Once ready with all of the necessary provisions for reliable drinking water during the shutdown (Project 2), DEP would undertake the bypass tunnel connection to the existing Delaware Aqueduct. During the connection period, certain inspections and repairs from within the RWBT

¹ The previous EIS is available here:

http://www.nyc.gov/html/dep/html/environmental_reviews/rwb_tunnel_repair_project.shtml

would be made to the remainder of the existing tunnel in areas outside the bypassed section, particularly in those sections located in the Town of Wawarsing, which need repair.

This FEIS was prepared to evaluate the potential environmental impacts that could result from the construction and operation of the augmentation components of UWSR. The FEIS thoroughly evaluated the various potential environmental impacts and addressed all pertinent comments on the DEIS. The FEIS identified measures to avoid or mitigate potential significant and temporary adverse environmental impacts to the maximum extent practicable.

DEP, by its Commissioner Vincent Sapienza, P.E., has considered the UWSR Project and finds that all CEQR/SEQRA requirements have been met, and that the FEIS addressed all pertinent comments on the DEIS. DEP finds that consistent with social, economic, and all other essential considerations of State and City policy, from among all reasonable alternatives available, the proposed program is one that satisfies the needs of the project and minimizes or avoids potential significant adverse environmental impacts to the maximum extent practicable. Furthermore, the temporary significant adverse impacts disclosed would be minimized or eliminated by incorporating mitigation measures detailed in the FEIS.

DEP, by its Commissioner, hereby approves the Findings Statement, thereby authorizing the implementation of the UWSR Project, including the mitigation measures set forth in the FEIS. DEP finds that, consistent with social, economic, and other essential considerations of State and City policy, from among the reasonable alternatives available, the action is one that minimizes or avoids potential significant adverse impacts to the maximum extent practicable. In addition, potential significant adverse environmental impacts disclosed in the FEIS will be minimized or avoided by incorporating as conditions to this decision those mitigative measures that are identified as practicable.

I. Upstate Water Supply Resiliency Is the Most Effective Means to Ensure the Continued Supply of Clean Drinking Water during the RWBT Temporary Shutdown

WFF was developed to respond to the need to repair and improve resiliency in the RWBT. WFF would ensure continued water supply service for current and future generations of DEP customers. Implementation of WFF would allow the City to continue to meet and respond to variable water supply and demand conditions. Cessation of leaks along the RWBT would reduce water losses in the Delaware System, thus contributing to its long-term sustainability.

UWSR is an integral component of DEP's WFF Program. The components of WFF are distinct, but reflect an interrelated planning effort to address the RWBT leaks. DEP has developed UWSR, as part of WFF, to ensure the continued supply of clean drinking water during the temporary shutdown. During the temporary 8-month shutdown of the RWBT, water from the Delaware System west of the Hudson River would be unavailable. Following the bypass tunnel connection, the bypassed section of the RWBT would be decommissioned, and all water in the RWBT would flow through the bypass.

DEP is proposing to repair and rehabilitate the Catskill Aqueduct to restore its historical capacity. This action would provide water supply augmentation during the temporary shutdown of the RWBT. In addition, Catskill Aqueduct repair and rehabilitation would

extend the aqueduct's useful life for many years to come. The Catskill Aqueduct repair and rehabilitation activities would be performed in segments along the approximately 74 miles of the upper Catskill Aqueduct between the Ashokan and Kensico Reservoirs. Catskill Aqueduct repair and rehabilitation requires a phased approach to construction and operation that would span several years. The proposed Catskill Aqueduct repair and rehabilitation would begin in 2018 and is anticipated to be complete in 2022 in advance of the temporary shutdown.

The temporary operational protocol for the City's water supply system, referred to as WFF Shutdown System Operations (WSSO), would allow DEP to alter its typical operation of the surface water supply system prior to, during, and just following the temporary shutdown. Typical operations would be altered by relying more heavily on the Delaware System, then the Catskill and Croton systems, and finally provide for water supply system rebalancing for a short time following bypass tunnel connection. Through implementation of WSSO, DEP substantially reduces the need for additional augmentation projects and, as a result, reduces the need for capital investment funds necessary for WFF. Work necessary to support the Catskill Aqueduct repair and rehabilitation and WSSO would be advanced concurrent with bypass tunnel construction.

Finally, inspection and repair of the RWBT would consist of inspection of the RWBT and internal repair of the RWBT near Wawarsing during connection of the bypass tunnel in Roseton and decommissioning the bypassed section of the RWBT during the temporary shutdown.

The components of UWSR are interdependent and the appropriate sequencing of each for component is critical. For instance, once Catskill Aqueduct repair and rehabilitation is complete, DEP would be ready to implement WSSO. Once WSSO commences and the RWBT is unwatered, DEP would be able to conduct the RWBT inspection and internal repairs near Wawarsing.

II. The Environmental Impact Statement Assesses all Potential Individual and Cumulative Impacts for the Upstate Water Supply Resiliency Project

The first stage of WFF is to construct a bypass tunnel around the leaking areas of the RWBT segment of the Delaware Aqueduct – Project 1. Planning for Project 1 has been completed and construction is currently underway. In order to ensure a continued supply of drinking water during the shutdown of the Delaware Aqueduct, DEP identified needed augmentation projects (known then as Project 2) at the time of the previous FEIS. The scope of these projects and the effects related to the shutdown were predicated on the duration of the connection of the bypass tunnel and repair of the Delaware Aqueduct, which at the time of the previous FEIS was 15 months. Currently, the shutdown is anticipated to take approximately 8 months starting in 2022 or 2023.

The previous FEIS (RWBT Bypass) looked at all potential impacts associated with the proposed project into the foreseeable future at the time of the completion of the FEIS. At this preliminary stage, it was unclear whether reducing leakage from the Delaware Aqueduct as a result of the repair and connection of the Bypass Tunnel would result in potential significant adverse impacts to the environment. In an effort to allow for flexibility

in the future to determine whether the next phase of the environmental review would be an EIS or not, this uncertainty was reflected by clarifying that potential impacts associated with future actions to be undertaken in conjunction with the WFF Program would be assessed in a second EIS or subsequent environmental review, as appropriate. DEP was committed to ensuring that any future environmental review of the Water for the Future program is no less protective of the environment.

Given the need to start the construction work on the bypass tunnel as expeditiously as possible, the previous FEIS contained a site specific environmental review for Project 1. Project 2 was discussed in the previous FEIS to the extent feasible given the current level of project development. DEP committed to conduct a full site specific review of the impacts of Project 2 in the future when Project 2 elements were sufficiently known so that the Project's impacts could be fully analyzed on a site specific basis.

This FEIS assesses the components of Project 2, as they have been further defined since the previous FEIS. These additional components, known collectively as UWSR, are the subject of this FEIS, and include:

- Catskill Aqueduct Repair and Rehabilitation, including a chlorination facility at the Ashokan Screen Chamber and a dechlorination facility at the Pleasantville Alum Plant;
- WSSO, including siphons at Rondout Reservoir; and
- RWBT Inspection and Repair (inspection and repair), including decommissioning of the bypassed section of the RWBT (decommissioning).

This FEIS contains a thorough review of the impacts of UWSR, and discloses that there are no cumulative impacts expected as a result of the proposed project. It should also be noted that the locations and/or timing of impacts for Project 1 and UWSR (Project 2) are separate, such that it is reasonably anticipated that the impacts from UWSR would not exacerbate any of the impacts identified from Project 1. The two environmental reviews therefore consider the full range of environmental impacts associated with the entire proposed WFF Program, including short-term and long-term impacts; and all impacts are being considered "as early as possible in DEP's formulation" of the action, as required by SEQRA under 6 NYCRR § 617.6(a)(1).

This approach satisfies the goals and intent of SEQRA – to incorporate the consideration of environmental factors into agency planning at the earliest possible time, in a transparent, public process. The current review provided for the WFF 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.

III. List of Discretionary Permits and Approvals

UWSR would require discretionary permits, approvals, and consultations from federal, State, and local agencies. Anticipated permits, approvals, and consultations are shown in **Table 1**, and are identified for each UWSR component.

Table 1: Summary of Potential Discretionary Permits, Approvals, and Consultations for Upstate Water Supply Resiliency Components

| Involved Agency | Permit/Approval/ Consultation | Proposed Catskill Aqueduct Repair and Rehabilitation ² | Proposed WFF Shutdown System Operations | Proposed RWBT Inspection and Repair |
|--|---|---|---|-------------------------------------|
| U.S. Army Corps of Engineers | Section 10 | ✓ | ✓ | ✓ |
| | Section 404 | ✓ | ✓ | ✓ |
| U.S. Fish and Wildlife Service | Consultation | ✓ | ✓ | ✓ |
| National Marine Fisheries Service | Consultation | | | ✓ |
| NYS Department of Environmental Conservation | Freshwater Wetlands | ✓ | ✓ | ✓ |
| | Protection of Waters for in/near water construction activities | ✓ | ✓ | - |
| | Section 401 Water Quality Certification | ✓ | ✓ | ✓ |
| | SPDES Permit (General Permit for Stormwater Associated with Construction Activities) | ✓ | - | - |
| | Individual SPDES Permit (Form NY-2C) | ✓ | - | - |
| | Air Emissions (201 Permit/Registration) | ✓ | - | - |
| | Natural Heritage Program Consultation | ✓ | ✓ | ✓ |
| New York State Department of State | Coastal Zone Consistency Assessment | ✓ | ✓ | - |
| New York State Department of Transportation | Roadway or Right-of-Way Use/Easement | ✓ | - | - |
| New York State Department of Health | Public Water Supply Improvement | ✓ | ✓ | ✓ |
| New York State Office of Parks, Recreation and Historic Preservation | Historic Resources Consultation | ✓ | ✓ | - |
| New York City Department of Health and Mental Hygiene | Water Supply Improvement Approval | ✓ | ✓ | ✓ |
| Public Design Commission | Design Review | ✓ | ✓ | - |
| Various Counties/Towns/Villages | These permits and approvals may include or be related to: Building Permits, Clearing and Grading, Code Variances, Floodplain Development, Highways and Facilities, Public Works, Site Plan Approvals, Stormwater Permits (including Municipal Separate Storm Sewer System [MS4] approvals), Tree Removal, Utility Consultation, Water and Sewer Connections, Water Supply or other Ministerial Permits. | ✓ | ✓ | ✓ |

² Includes the New Paltz temporary transmission water main component.

IV. No Potential for Significant Adverse Impacts

Construction and operation of the components of the UWSR would not result in significant adverse impacts to: land use, zoning and public policy; socioeconomic conditions; community facilities and services; open space and recreation; historic and cultural resources; visual resources (an urban design analysis is not warranted because UWSR is not located in an urban setting); hazardous materials; water and sewer infrastructure; energy; transportation; air quality; noise; public health; and neighborhood character.

Many measures incorporated into the design of the proposed project components would avoid or substantially reduce the potential for significant adverse impacts resulting from the construction or temporary operation of UWSR.

Catskill Aqueduct Repair and Rehabilitation

During Catskill Aqueduct repair and rehabilitation, protective measures would be put in place at all locations that involve proposed in-stream work or work in close proximity to coldwater fisheries. Likewise, partial stream diversions would provide adequate area for both flood flow and fish passage, and would not result in significant adverse impacts to fish. These measures, in conjunction with the flexibility to potentially conduct work during the coldwater fisheries window where unavoidable, would allow Catskill Aqueduct repair and rehabilitation construction activities to avoid or minimize potential impacts to these resources and reduce the overall duration of in-water work. In addition, these avoidance and minimization measures have resulted in work plans that would result in relatively minor permanent effects to water resources.

During the period of temporary chlorination, the maximum dose of chlorine dioxide or sodium hypochlorite would be at or below applicable New York State Department of Health (NYSDOH) and New York State Department of Environmental Conservation (NYSDEC) requirements. DEP would implement measures aimed at minimizing potential changes to natural resources and water supplies as a result of temporary chlorination. In addition, Catskill Aqueduct repair and rehabilitation, specifically temporary chlorination, has the potential to affect groundwater quality within two study areas. DEP has proactively developed action plans for private drinking water supply wells within the Lucas Turnpike and Mossybrook Road study areas to minimize potential effects, if effects were to occur.

Based on an analysis of the potential disinfection by-products (DBPs) and chloride that would potentially be released in leak water and discharges from the Catskill Aqueduct associated with chlorination, the levels of DBPs and chloride would be low. Studies show that dechlorination systems would be able to reduce chlorite concentrations. Additionally, studies show that DBP levels would be reduced by volatilization, dilution, and degradation. As a result, there may be only minor and temporary effects to the fringe vegetation of the floodplain forests, shallow emergent marshes, and vegetation along leak flow pathways. There would be no significant adverse impacts to natural resources at the leak sites, Kensico Reservoir or the reservoirs and receiving waterbodies of the Village of New Paltz and City of Newburgh (including Silver Stream), as a result of chlorination. Following completion of the RWBT temporary shutdown, chlorination of the aqueduct would cease, local dechlorination

systems would no longer be needed, and operation of the Catskill Aqueduct would be returned to baseline conditions.

Biofilm sloughing could occur as a result of temporary chlorination at Ashokan Reservoir in advance of biofilm removal as part of the Catskill Aqueduct repair and rehabilitation. Estimates of biofilm sloughing over a short time period (i.e., 1 week) and under low-flow conditions, which would correlate with higher concentrations of resulting turbidity, indicate the anticipated reasonable worst-case scenario turbidity level is around 30 Nephelometric Turbidity Units (NTU). The chances of the sloughing occurring over such a short timeframe however is conservative and would be different from anything reported in the literature or through utility surveys conducted as part of a desktop study. Significant dilution of biofilm that may be associated with sloughing would be anticipated even if it enters the aqueduct water. Potential turbidity levels from biofilm sloughing are anticipated to be more in the range of 3 to 7 NTU at a maximum.

Construction of the New Paltz temporary water main to maintain water supply during the Catskill Aqueduct shutdowns would be short-term, temporary, and proper protective measures would be employed to protect the resources that are most likely to have the potential for a significant impact. Following the removal of the New Paltz temporary water main, any potential areas disturbed during construction would be restored to existing conditions. In addition, operation of the New Paltz temporary water main would not involve significant disturbances to resources within the study area and would be consistent with existing conditions. The New Paltz temporary water main would not result in significant adverse impacts.

Upon completion of the Catskill Aqueduct repair and rehabilitation, temporarily disturbed areas would be restored to baseline conditions. No significant adverse impacts from the Catskill Aqueduct repair and rehabilitation are anticipated.

Water for the Future Shutdown System Operations

While the temporary shutdown of the RWBT is an unprecedented operational modification for DEP, the resulting response within the water supply system with respect to reservoir elevations and flows is not anticipated to vary substantially from what occurs under typical operations. This is due in part to annual hydrologic variations that result in wide fluctuations in reservoir water surface elevations, releases, and spills, but also robust planning of modified conditions to maintain delivery of high quality drinking water to DEP's customers. No significant adverse impacts from WSSO are anticipated.

Rondout-West Branch Tunnel Inspection and Repair

Inspection and repair of the RWBT and decommissioning of the bypassed segment is expected to permanently stop the leaks that contribute to the shallow groundwater and have the potential to affect groundwater levels near Wawarsing and within Roseton and could have the potential to affect ground elevation (i.e., settlement) in Roseton. In response, DEP has proactively developed action plans for private drinking water supply wells and parcels with the potential for settlement. As a result, no significant adverse impacts are anticipated due to the inspection and repair activities, including repair of the leaks from the RWBT near Wawarsing.

Potential significant adverse impacts to wetlands could occur once the RWBT is decommissioned in Roseton. Decommissioning is expected to permanently stop the leaks that contribute to the wetland resources in Roseton. The predicted change to shallow groundwater hydrology has the potential to impact both the wetland extent and vegetation composition. Lowering of groundwater levels as a result of the leak repairs in Roseton could potentially result in the loss of an estimated 1.2 acres of non-regulated wetlands. These wetlands are not regulated by USACE or NYSDEC. In general, the reduction in shallow groundwater levels has the potential to result in changes to wetland vegetation and possibly localized soil conditions. The estimated change to the wetland hydrologic regime would alter the presence or duration of anaerobic conditions within the root zone and may also affect soil quality that could influence plant species composition. These changes to wetlands would occur on a scale of months to years after decommissioning and following establishment of a new stabilized hydrologic regime. DEP commits to developing a wetland monitoring program that would be implemented prior to, during, and after the RWBT temporary shutdown to assess the impacts to wetlands and riparian areas adjacent to streams. The monitoring program would consist of continuous hydrologic monitoring for up to five years following decommissioning, and biennial vegetation monitoring, wetland delineation, wetland functional assessment, and photographic documentation of fixed monitoring plots during the first, third, and fifth years following decommissioning. The objective of the monitoring program would be to document changes to wetland communities and their size and function, and to compare changes to local reference wetlands to determine if significant adverse impacts have occurred as a result of decommissioning. The monitoring of reference wetlands would allow for comparison to determine if any change at the potentially impacted wetland is a result of decommissioning or other source (e.g., climatological). Should permanent impacts to wetland size and/or function be measured, DEP would perform compensatory mitigation (as detailed below in the Mitigation section).

Cumulative Impacts

While each of the proposed UWSR components would be temporary, they were evaluated to identify proposed activities that would occur simultaneously and determine if the combined or cumulative effects increased their level of significance or changed the potential for impacts.

Together, the previous FEIS and the UWSR FEIS considered the full range of environmental impacts associated with WFF, including short-term and long-term impacts. Construction and operation of the UWSR components would not result in significant adverse impacts to energy, greenhouse gas emissions and climate change, socioeconomics, or public health. Based upon this assessment of UWSR, there would be no cumulative significant adverse impacts.

On behalf of the City, DEP is responsible for ensuring the safe and reliable transmission of drinking water from the watershed to consumers in sufficient quantity to meet all present and future water demands. UWSR would help ensure that this goal and obligation are met. The primary purpose of UWSR is to support the connection of the RWBT bypass tunnel, which would allow DEP to complete repair of this critical piece of infrastructure. At the same time, the Catskill Aqueduct repair and rehabilitation component of UWSR would improve the capacity and functioning of the upper Catskill Aqueduct. Ultimately, the operation of the

bypass tunnel would support public health by enabling DEP to continue to supply clean drinking water to consumers in sufficient quantity to meet future demands. In addition to the Catskill Aqueduct repair and rehabilitation, repair of the RWBT and bypass tunnel connection would support inspections of other tunnel segments, providing greater flexibility to inspect and repair all system components in the future. Therefore, UWSR as a whole would provide a cumulative public health benefit.

V. **Temporary Adverse Impacts and Measures to Minimize or Avoid These Impacts**

DEP has incorporated commitments and protective measures into the UWSR Project components that would avoid or minimize the potential for significant adverse impacts. Through implementation of these commitments and/or protective measures, no significant adverse impacts would result from Catskill Aqueduct repair and rehabilitation and WSSO. In addition, commitments and protective measures are incorporated into the RWBT inspection and repair that would also avoid or minimize the potential for significant adverse impacts. Potential significant adverse impacts that may be associated with inspection and repair that could not be avoided or minimized through incorporation of commitments and protective measures would be mitigated.

Catskill Aqueduct Repair and Rehabilitation

As part of the proposed project, DEP identified and incorporated specific commitments within the Catskill Aqueduct repair and rehabilitation component of UWSR to avoid and/or minimize the potential for significant adverse impacts to the maximum extent practicable. The commitments and protective measures associated with Catskill Aqueduct repair and rehabilitation are summarized below.

Operations

- DEP would only commence aqueduct shutdowns under favorable hydrologic conditions and when the water supply system is entering a period of lower demand.

Natural Resources

- Tree removal would be conducted from November 1 through March 31 to avoid impacts to Indiana bats (*Myotis sodalis*) and northern long-eared bats (*Myotis septentrionalis*).
- DEP would inspect structures that would be repaired prior to commencement of work to verify whether there are signs of roosting bats.
- For federal/State Threatened, Endangered Species, and Candidate Species, State Species of Special Concern, protective measures would include perimeter fencing and other measures. As an example, should any timber rattlesnakes (*Crotalus horridus*) be encountered during construction, DEP would enact an encounter plan. Among other elements, the encounter plan would include having a natural resource specialist relocate the species outside of the work area, as appropriate.
- Use of stream diversions for in-water work would be limited to the maximum extent practicable, particularly within those locations where waterbodies are supportive of

coldwater fisheries (e.g., trout [T] or trout spawning [TS]). Where temporary diversions are required, DEP would employ partial diversions where feasible that would not restrict more than 40 percent of the stream width in order to maintain stream flow and fish passage throughout the duration of construction. For waterbodies where a full stream diversion may be required, this work would be done outside of any work restrictions associated with coldwater fisheries, if possible, and would be limited in scope and duration to the maximum extent practicable. Permanent streambank protection measures would be installed along streams in selected areas to prevent erosion and possible scouring within receiving streams.

- Leaks along the aqueduct would be repaired or have local dechlorination systems installed prior to commencing temporary chlorination to prevent chlorinated water from being released into the environment. DEP would conduct a photographic survey of vegetation in proximity to leak flowpaths prior to initiating chlorination and following Catskill Aqueduct repair and rehabilitation.

Water and Sewer Infrastructure

- Discharges associated with unwatering of the Catskill Aqueduct would be controlled through the use of throttle valves and on-site monitoring to avoid a bankfull event in receiving waterbodies. In addition, for receiving streams that could be inundated during an unwatering event, DEP would avoid discharging at these sites within 24 hours of predicted rain events, during these rain events, and for a period of 48 hours after rain events or after which time streamflow returns to normal.
- DEP would coordinate closely with Outside Community Connections to confirm they have access to adequate water supply independent of the upper Catskill Aqueduct prior to any temporary shutdown of the aqueduct required for the Catskill Aqueduct repair and rehabilitation.
- DEP would add sodium hypochlorite or chlorine dioxide as part of the proposed chlorination at doses that would ensure effectiveness of the Catskill Aqueduct repair and rehabilitation while maintaining sodium hypochlorite and chlorine dioxide residuals and the associated formation of DBPs below their respective maximum residual disinfection or maximum contaminant levels for all Outside Community Connections, as applicable.³

Transportation

- Use of the primary staging areas during the 10-week shutdowns would generate higher vehicle trips than during construction when the aqueduct is in service. During these periods, there would be shuttle trips between the primary staging area and study areas to reduce the volume of construction vehicles on local roads.

³ DBPs formed as a result of sodium hypochlorite addition include trihalomethanes (THM) and haloacetic acids (HAAs). For chlorine dioxide, DBPs are chlorite and chlorate. Chloride is also formed.

- To reduce truck trips during the weekend, biofilm removed from the aqueduct would be stockpiled at the Wallkill Downtake Chamber in the New Paltz-Minnewaska Road Study Area and removed from the site Monday through Friday.

Noise

- DEP would use generators and fans during construction. Generators would not exceed a maximum noise emission of 75 A-weighted decibels (dBA) equivalent average sound level (L_{eq}) at 50 feet from the generators, and may need to be equipped with protective and sound attenuating enclosures to meet this level. Fans would not exceed a maximum noise emission of 51 dBA L_{eq} at 50 feet from the fans.

Public Health

- DEP would not dose chlorine dioxide above 0.8 milligrams per liter (mg/L) or sodium hypochlorite above 1.25 mg/L under the proposed chlorination. This would ensure effectiveness of the Catskill Aqueduct repair and rehabilitation while maintaining residuals of these chemicals and the associated formation of DBPs (chlorite, chlorate, trihalomethanes [THM], and haloacetic acids [HAAs]) below their respective NYSDOH maximum residual disinfection or maximum contaminant standards, as applicable.
- DEP would work with Outside Community Connections to implement measures aimed at monitoring and minimizing any potential changes to water supply characteristics as a result of temporary chlorination. These measures may include operational changes to reduce water age or oxidant use; monitoring of pH, chlorine dioxide, and DBPs; and addition of a corrosion inhibitor, as applicable.
- DEP is committed to developing and working with owners to implement an Action Plan for potentially affected private drinking water supply wells within the Lucas Turnpike and Mossybrook Road study areas, if required.

Water for the Future Shutdown System Operations

As part of the proposed project, DEP identified and incorporated specific commitments within the WSSO component of UWSR to avoid and/or minimize the potential for significant adverse impacts to the maximum extent practicable. Commitments and protective measures that have been incorporated into WSSO are summarized below.

Operations

- DEP would only commence the RWBT temporary shutdown under favorable hydrologic conditions and when the aqueduct system is entering a period of lower demand.
- While DEP would use the existing exception from the Interim Ashokan Release Protocol in accordance with Section 7.c. of the NYSDEC/DEP Interim Ashokan Release Protocol

for the Ashokan Reservoir (September 27, 2013), DEP would continue to maintain community releases from the Ashokan Release Channel.⁴

Natural Resources

- Siphons at Rondout Reservoir would be available for the duration of the temporary shutdown. Siphons would operate continuously while the reservoir water surface elevation is above the minimum operating level. However, to not contribute to downstream flooding, DEP would temporarily cease operation of the siphons when flows at the U.S. Geological Survey Rosendale Gauge reach within 1 foot of the flood action stage. Following a temporary curtailment of flows, the siphons would be reactivated and flow control valves would be used to ramp flows back up slowly over a number of days.

Noise

- DEP would use generators and fans during construction of the siphons at Rondout Reservoir. Generators would not exceed a maximum noise emission of 75 dBA L_{eq} at 50 feet from the generators, and may need to be equipped with protective and sound attenuating enclosures to meet this level. Fans would not exceed a maximum noise emission of 51 dBA L_{eq} at 50 feet from the fans.

Rondout-West Branch Tunnel Inspection and Repair

As part of the proposed project, DEP identified and incorporated specific commitments and protective measures within the RWBT inspection and repair component of UWSR. Commitments and protective measures were incorporated to avoid and/or minimize the potential for significant adverse impacts to the maximum extent practicable. Commitments and protective measures that have been identified are summarized below.

Natural Resources

- For federal/State Threatened, Endangered Species, and Candidate Species, State Species of Special Concern, protective measures would include perimeter fencing and species relocation.

Noise

- Construction associated with the inspection and repair would require operation of fans and generators. Generators would not exceed a maximum noise emission of 75 dBA L_{eq} at 50 feet from the generators, and may need to be equipped with protective and sound attenuating enclosures to meet this level. Fans would not exceed a maximum noise emission of 51 dBA L_{eq} at 50 feet from the fans.

⁴ Section 7 c. of the Interim Ashokan Release Protocol for Ashokan Reservoir states “DEC, or DEP with concurrence by DEC, determines that releases must be changed or interrupted as necessary for inspection, maintenance, testing and repairs (including Delaware Aqueduct repairs).”

Water and Sewer Infrastructure

- DEP would implement a Well Action Plan for potentially affected private drinking water supply wells within the applicable study areas.

Public Health

- As further described in the FEIS, if the water quality results from the Well Action Plan show that quality exceeds the NYSDOH Part 5 drinking water standards, DEP would provide either an alternate supply or treatment to treat or remove contaminants to below the NYSDOH Part 5 drinking water standards.

Geology and Soils

- Decommissioning would result in a change of ground water levels, which could result in areas that could be subject to settlement within the Roseton Study Area. DEP is developing and working with owners to implement preventative Action Plans for structures within this area.

Mitigation

No potential significant adverse impacts are anticipated from the Catskill Aqueduct repair and rehabilitation and WSSO. Therefore, no mitigation is required for these components.

There remains the potential for significant adverse impacts to non-regulated (USACE and NYSDEC) wetlands associated with the RWBT inspection and repair. A total of approximately 1.2 acres of existing delineated non-regulated wetlands within the Roseton Study Area are estimated to be potentially lost as a result of the cessation of leaks from decommissioning on surface water and shallow groundwater levels that are the source of water to these wetlands.

Should permanent impacts to wetland size and/or function be measured, DEP would perform compensatory mitigation. Compensatory mitigation for permanent impacts to wetlands would include wetland creation, restoration, and/or enhancement, with a minimum one to one mitigation ratio (i.e., one acre of wetland creation, restoration, or enhancement for every acre of wetland permanently lost as a result of the project). Once the compensatory mitigation site is established, DEP would monitor the site for a minimum of three years to confirm that the site meets the objective to compensate for the permanent loss of wetlands in the Roseton Study Area.

VI. Project Alternatives

The FEIS evaluated numerous alternatives, including a No Action Alternative (Alternative 1) and two additional alternatives to UWSR: Interconnections to Water Supplies in New Jersey (Alternative 2) and Leak Stabilization (Alternative 3). The alternatives analysis concluded that the No Action and the RWBT Leak Stabilization alternatives would not be feasible because they would not address the overall WFF goals as they would not adequately address the leaks in the RWBT, and would compromise the City's water supply. The Interconnections to Water Supplies in New Jersey

Alternative was determined to be feasible, however, the environmental impacts that would be associated with this alternative would be greater than those of UWSR.

VII. Conclusions and Findings

For UWSR, a potential significant adverse impact to Natural Resources in Roseton was identified. Lowering of groundwater levels as a result of the leak repairs in Roseton could potentially result in the loss of unregulated wetlands and potential impacts to riparian areas adjacent to streams. DEP will implement a monitoring program prior to, during, and after the RWBT temporary shutdown to assess the impacts to these wetlands and should impacts be measured, would mitigate as required. Therefore, UWSR would not result in any unavoidable significant adverse impacts.

Implementation of WFF would allow the City to continue to meet and respond to variable water supply and demand conditions, even after WFF is complete and essential City infrastructure has been repaired. Cessation of leaks along the RWBT would reduce water losses in the Delaware water supply system, thus contributing to its long-term sustainability. The proposed project would result in an overall public health benefit.

Having considered the FEIS and the information and analyses contained therein, the Commissioner, on behalf of DEP, concurs with the findings of the FEIS and certifies that:

- The requirements of Article 8 of the New York State Environmental Conservation Law and its implementing regulations found at 6 NYCRR Part 617 and the requirements of CEQR found at Title 62, Chapter 5 of the Rules of the City of New York and as set forth in Executive Order 91 of 1977, as amended, have been met;
- Consistent with social, economic, and other essential considerations of State and City policy, from among the reasonable alternatives available, the proposed project 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 commitments and mitigative measures that were identified as feasible and practicable.

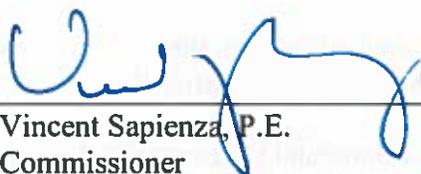
The FEIS and the Notice of Completion of the FEIS constitute the written statement of facts and analysis of the environmental, social, economic, and other factors and standards that form the basis of this decision, pursuant to Section 6.17.11(d) of the SEQRA regulations.

For additional information, please reach out to the contact person listed below:

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Dated: January 5, 2018
Flushing, New York



Vincent Sapienza, P.E.
Commissioner
New York City of Department of Environmental Protection