Environmental Protection

Carter H. Strickland, Jr.
Commissioner
cstrickland@dep.nyc.gov

59-17 Junction Boulevard
Flushing, NY 11373
T: (718) 595-6565
F: (718) 595-3525

STATEMENT OF FINDINGS FOR THE WATER FOR THE FUTURE: DELAWARE AQUEDUCT RONDOUT-WEST BRANCH TUNNEL REPAIR

CEQR No. 10DEP042U

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In accordance with New York City's Executive Order 91 of 1977 and its amendments establishing City Environmental Quality Review ("CEQR"), Article 8 of the Environmental Conservation Law establishing the State Environmental Quality Review Act ("SEQRA") and its implementing regulations (6 NYCRR Part 617), 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: Delaware Aqueduct Rondout-West Branch Tunnel Repair on May 18, 2012. In accordance with 6 NYCRR Section 617.4, this project is classified as a Type I Action.

The DEP issued a Lead Agency Determination, Notice of Positive Declaration and Draft Scope of Work on May 3, 2011 and held public hearings on the Draft Scope of Work on June 7, 2011 and July 14, 2011 in the Town of Wappinger, NY; June 9, 2011 in the Town of Newburgh, NY; and June 14, 2011 in the Town of Wawarsing. The comment period remained open until June 20, 2011. DEP issued a Final Scope of Work that responded to the public comments on August 31, 2011. The Draft EIS was issued on December 20, 2011, and public hearings on the Draft EIS were held on January 23, 2012 in the Town of Newburgh, NY, on; January 24, 2012 in the Town of Wappinger, NY; and on January 25, 2012 in the Town of Wawarsing, NY. The comment period on the Draft Environmental Impact Statement (DEIS) remained open until March 9, 2012. The FEIS issued on May 18, 2012 included a response to public comments on the environmental review.

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, manage demand and make provisions for changes in the distribution system during the shutdown period.

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

Construction of the bypass tunnel and shaft sites would begin with construction of the bypass shafts, which would start in 2013 and be complete in 2015. Construction of the bypass tunnel would begin in 2015 and be connected in 2020. It is anticipated that up to 15 months would be needed to complete the bypass connection and to undertake the inspection and repair of the RWBT, expected to occur sometime in 2021.

DEP plans to address the leaks in the RWBT portion of the Delaware Aqueduct by undertaking the proposed *Water for the Future* program, which would consist of two main projects:

1. Project 1: Construction of the Bypass Tunnel and Shaft Sites;
2. Project 2: Repair of the RWBT and water supply system improvements. Project 2 may require:
    - Demand management;
    - Additional water supply; and/or
    - Operational adjustments; and
    - Bypass tunnel connection and repair of the leak in Wawarsing, Ulster County, New York, as well as an inspection and repair of the full RWBT.

The FEIS focused on the construction of a bypass tunnel and shaft sites, and is referred to as "Project 1." DEP plans to construct a new tunnel segment to bypass a section of the existing tunnel that is known to be leaking in Roseton, Orange County, NY. It would be constructed between a new shaft site to be located to the west of the Hudson River in the Town of Newburgh, Orange County, NY, and a new shaft to the east of the River on DEP's Shaft 6 property, which is located in the Town of Wappinger, Dutchess County, NY.

The FEIS was prepared to evaluate the environmental impacts that could result from the construction and operation of the proposed shaft and bypass tunnel, as well as potential impacts associated with Project 2, water supply augmentation and the connection of the bypass, to the extent feasible. 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, Carter H. Strickland, Jr., has considered the Water for the Future: Delaware Aqueduct Rondout-West Branch Tunnel Repair 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 – with the exception of Neighborhood Character in the immediate vicinity of the east connection site – 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 Water for the Future: Delaware Aqueduct Rondout-West Branch Tunnel Repair, 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 Final EIS will be minimized or avoided by incorporating as conditions to this decision those mitigative measures that are identified as practicable.

I. The Rondout-West Branch Bypass Tunnel Repair is the Most Effective Means to Repair the Delaware Aqueduct and Maintain Safe and Reliable Transmission of Drinking Water to meet all Current and Future Water Demands.

Repairing the Rondout-West Branch portion of the Delaware Aqueduct is the most efficient means of maintaining this critical piece of the City's water supply infrastructure. 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. The RWBT is a critical component of DEP's Delaware water supply system, which provides fifty percent of the City's supply, and is currently leaking, in total, between 10 and 35 million gallons per day in two critical areas in the vicinity of the Wawarsing and Roseton crossings.

DEP considered repairing the existing RWBT from within the tunnel, including the Wawarsing and Roseton crossings. However, this alternative was not advanced due to the length of time that this repair method would require the RWBT to be out of service. A traditional repair would require the Delaware Aqueduct to be out of service for approximately 48 months. The currently proposed project reduces this outage to between 6 and 15 months. By constructing a bypass tunnel around the leaking portion of the Delaware Aqueduct in the Roseton area, the proposed project is able to repair the existing leaks and reduce the amount of time this critical component of the water supply system is out of service. In turn, this reduces risks, the amount of additional water required to supply the city during the Delaware

shutdown, as well as limiting the amount of time that upstate users will need to rely solely on their back up water supplies and City's reliance on the Catskill System which occasionally experiences water quality problems during heavy storm events.

II. The Environmental Impact Statement Assesses all Potential Individual and Cumulative Impacts for Construction of the Shafts and Bypass Tunnel Portion of the Program

DEP currently anticipates that the Water for the Future Program will take up to nine 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 segment of the Delaware Aqueduct – Project 1 – 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 needed water conservation and augmentation projects (Project 2). 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.

However, as DEP continues to refine estimates of the duration of the Delaware Aqueduct shutdown required to connect the bypass tunnel to the RWBT, it is possible that the scope of Project 2's water supply projects may be reduced, or even eliminated, and the effects from shutdown of the Aqueduct may be minimized. The current FEIS has looked at all potential impacts associated with the proposed project into the foreseeable future, and is therefore no less protective of the environment. At this preliminary stage, it is unclear whether reducing leakage from the Aqueduct as a result of the repair and connection of the Bypass Tunnel would result in potential significant adverse impacts to the environment. Therefore, to allow for flexibility in the future to determine whether the next phase of the environmental review will be an EIS or not, this uncertainty is reflected by clarifying that potential impacts associated with future actions to be undertaken in conjunction with the Water for the Future Program would be assessed in a second EIS or subsequent environmental review, as appropriate. DEP is 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, this FEIS contains a site specific environmental review for Project 1. Project 2 is discussed in this FEIS to the extent feasible given the current level of project development. The level of detail of the Project 2 review is, of necessity, 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 known 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 FEIS addresses the cumulative impacts for the Water to the Future Program to the extent possible based on current information, and discloses that there are no cumulative impacts expected as a result of Projects 1 and 2. It should also 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 from Project 1. That said, a second EIS or a subsequent environmental review, as appropriate, will comprehensively analyze any potential cumulative impacts of the two Projects together. The two environmental reviews 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 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 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.

III. List of Discretionary Permits and Approvals.

Potential Major Permits, Approvals, Consultation, and Coordination—
Project 1: Shaft and Bypass Tunnel Construction

Agency/Entity	Permit/Approval/Consultation/Coordination
FEDERAL	
Coastal Zone Management Act	Projects affecting New York's coastal zone must be consistent with the Coastal Zone Management Act, through the New York State Department of State's Coastal Management Program and approved Local Waterfront Revitalization Plans
U.S. Army Corps of Engineers (USACE)	Individual Permit for water main extension dewatering pipeline, and outfall and construction of the bypass tunnel under the Hudson River.
United States Fish and Wildlife Service	Consultation under Section 7 of the Endangered Species Act
Advisory Council on Historic Preservation	Consultation under Section 106 of the National Historic Preservation Act of 1966
STATE	
New York State Department of State (NYSDOS)	Coastal Zone Management Consistency
New York State Department of Environmental Conservation (NYSDEC)	State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity - GP-0-10-001 (Erosion and Sediment Control for construction activities)
	SPDES Multisector General Permit for Stormwater Discharges Associated with Industrial Activity (GP-06-002)
	Individual SPDES Permit or Application Form NY-2C for Industrial Facilities (Shaft dewatering activities requiring discharge to surface water)
	Stormwater Pollution Prevention Plan for Stormwater Discharges

	Section 401 Water Quality Certification
	Protection of Waters Permit for the construction of a dewatering pipeline outfall
	Sanitary Wastewater Pump and Haul Approval
	Air Facility Registration
	Waste Transporter Permit for transport of excavated materials, as necessary
	Hazardous Substance Bulk Storage Registration (Chemical Bulk Storage Registration)
	Petroleum Bulk Storage Facility Registration
	Natural Heritage Program Consultation—consultation to determine potential presence of threatened or endangered species listed in New York State
New York State Office of Parks, Recreation and Historic Preservation (NYSOPRHP)	Consultation to determine potential presence of archaeological and/or historic resources and determine project's potential effects
New York State Office of General Services (OGS)	Permit for use of state-owned land underwater
New York State Department of Health (NYSDOH)	State Environmental Review Certification for New York State Revolving Fund Approval of Plans for Public Water Supply Improvement
New York State Department of Transportation (NYSDOT	Special Hauling and Load Overweight Permit
	Highway Work Permit
	Use and Occupancy Permit

Potential Major Permits, Approvals, Consultation, and Coordination— Project 1: Shaft and Bypass Tunnel Construction (cont'd)

Agency/Entity	Permit/Approval/Consultation/Coordination
AREA MUNICIPALITIES	
New York City	
Public Design Commission of New York City	Design Commission Approval
Dutchess County	
Dutchess County Planning Approval and Public Works Coordination	Highway Work and Traffic Enhancement Permits; General Coordination
Dutchess County Health Department	Potable Water Supply
Dutchess County Health Department	Sanitary Wastewater Pump and Haul Approval
Orange County	
Orange County Planning Approval and Public Works Coordination	Highway Work and Traffic Enhancement Permits; General Coordination
Orange County Health Department	Potable Water Supply
Orange County Health Department	Sanitary Wastewater Pump and Haul Approval
Town of Wappinger	
Town of Wappinger Planning Board	Site Plan Approval and related permits
Town of Wappinger Zoning Board of Appeals	Area variance for lot coverage; possible additional variances required
Town of Wappinger Building Department	Blasting Permits; Tree Harvesting Registration
Town of Wappinger Highway Superintendent	Highway Work and Traffic Enhancement Permits; General Coordination
Town of Wappinger MS4 Official	Stormwater Pollution Prevention Plan (SWPPP) Acceptance and Monitoring
Town of Newburgh	
Town of Newburgh Planning Board	Site Plan Approval and related permits
Town of Newburgh Zoning Board of Appeals	Variance from Noise code; possible additional variances required
Town of Newburgh Building Department	Blasting Permits
Town of Newburgh Highway Superintendent	Highway Work and Traffic Enhancement Permits; General Coordination
Town of Newburgh MS4 Official	Stormwater Pollution Prevention Plan (SWPPP) Acceptance and Monitoring
OTHER ENTITIES	
MTA Metro-North Railroad	Approval for Crossing Tracks
Midtown Tracking Ventures	Coordination
CSX Transportation Inc.	Coordination
Central Hudson Gas & Electric	Coordination
Dynegy	Access Agreement

Potential Major Permits, Approvals, Consultation, and Coordination— Project 2A: Water Supply System Augmentation and Improvement

Regulatory Agency	Upper Catskill Optimization	Queens Groundwater Reactivation	Nassau County Interconnection	New Jersey Interconnection
Federal Emergency Management Agency			X	X
U.S. Army Corp of Engineers				X
U.S. Environmental Protection Agency		X		
U.S. Fish and Wildlife Service	X			X
Delaware River Basin Commission				X
Office of the Governor – New Jersey				X
New Jersey Department of Environmental Protection				X
New York State Department of Environmental Conservation	X	X	X	X
New York State Department of Health	X	X	X	X
New York State Department of State			X	X
New York State Department of Transportation	X	X	X	X
New York State Office of General Services				X
New York State Office of Parks, Recreation & Historic Preservation	X	X	X	X
Nassau County			X	
Nassau County Department of Health			X	
Orange County	X			
Ulster County	X			
Putnam County	X			
Westchester County	X			
Village of New Paltz	X			
City of Newburgh	X			
Town of Marlborough	X			
Village of Cornwall-on-Hudson	X			
Town of New Windsor	X			
Village of Cold Spring	X			
Town of Putnam Valley	X			
Continental Village	X			
City of Peekskill	X			
Town of Cortlandt	X			
Village of Buchanan	X			
Town of Yorktown	X			
Town of New Castle	X			
Village of Pleasantville	X			
Town of Mount Pleasant	X			
New York City Council		X	X	X
New York City Department of Health and Mental Hygiene	X	X	X	X
New York City Department of Transportation		X	X	X
New York City Department of City Planning		X	X	X
New York City Landmarks Preservation Commission		X	X	
New York City Department of Parks and Recreation		X	X	X
New York City Department of Small Business Services			X	X
New York City Public Design Commission	X	X	X	X
NYC Community Boards		X	X	X
NYC Borough Presidents		X	X	X

Potential Major Permits, Approvals, Consultation, and Coordination—Project 2B: Bypass Tunnel Connection and RWBT Inspection and Repair, including Wawarsing

Agency/Entity	Permit/Approval/Consultation/Coordination
FEDERAL	
U.S. Army Corps of Engineers(USACE)	Joint Permit Application (for Waters of the United States, related to elimination of leaks)
STATE	
New York State Department of Environmental Conservation (NYSDEC)	Joint Permit Application (for Freshwater Wetlands/Protection of Waters, related to elimination of leaks)
New York State Department of State (NYSDOS)	Joint Permit Application (for Coastal Consistency Concurrence, related to elimination of leaks)
New York State Department of Health (NYSDOH)	Water Supply Improvement Approval
AREA MUNICIPALITIES	
New York City	
New York City Department of Health and Mental Hygiene	Water Supply Improvement Approval
Ulster County	
Ulster County Department of Health	Coordination
Town of Wawarsing	Coordination
Orange County	
Orange County Department of Health	Coordination
Dutchess County	
Dutchess County Department of Health	Coordination
Putnam County	
Town of Putnam Valley	Coordination
Town of Kent	Coordination

IV. No Potential for Significant Adverse Impacts.

Construction and operation of the Rondout-West Branch Bypass Tunnel Repair is not anticipated to have significant adverse impacts in the areas of: Land Use, Zoning, and Public Policy, Visual Character, Historic and Archeological Resources, Socioeconomic Conditions, Community Facilities, Natural Resources, Hazardous Materials, Air Quality, Energy and Greenhouse Gas Emissions, Infrastructure, Solid Waste, Coastal Zone, Public Health, and Growth Inducement.

Land Use, Zoning, and Public Policy

Construction of Project 1 on the west connection site, including activity at the west connection site and along the dewatering pipeline route, would not result in any permanent impacts to surrounding land uses. The proposed public utility use is permitted within the AR Zoning District and is considered compatible with both residential and commercial uses. While the site would change from a vacant/undeveloped property into a public utility use, this change would not cause any significant change to the land use or character of the surrounding area. The approximately 7½ years of construction activities may temporarily affect the single-family residences near the west connection site and dewatering pipeline

route, but any impacts would be temporary and would not restrict access to individual residences. Existing land uses in the study area include several commercial uses, such as gas stations, restaurants, and motels. These businesses can potentially expect increased patronage by construction workers. Construction activity would not be inconsistent with the Town of Newburgh's Comprehensive Plan.

Construction of Project 1 would not be inconsistent with the town's zoning code or public policy, but relief from some sections of the code may be necessary to allow for evening work and 24-hour construction. Construction-related traffic is not expected to have a significant adverse impact on land use or open space in the surrounding community.

Construction activity at the east connection site would not result in any changes or permanent impacts to land use, open space, or zoning at the east connection site. The proposed use is a continuation of an existing water supply use that is permitted within the R-80 Zoning District and is considered compatible with surrounding residential properties as well as the lumberyard property to the south. Construction activities may temporarily affect the single-family residences near the east connection site, but any impacts would not affect access to individual residences, would not be permanent, and would end after construction is complete. Construction activity on the site would be consistent with the Town of Wappinger's Comprehensive Plan. Project 1 may require relief from certain sections of the Town Code including for construction outside of normally permitted work hours, which would be obtained from the Town of Wappinger, if deemed necessary. Construction-related traffic is not expected have a significant adverse impact on land use or open space in the surrounding community.

Visual Character

Construction of Project 1 on the west side of the Hudson River would not result in any permanent impacts to visual character. While views of the west connection site would change during construction, the overall commercial/industrial visual character of the study area would not be significantly adversely affected. Therefore, construction of Project 1 is not expected to result in any significant adverse visual impacts.

Construction activity at the east connection site would not result in any permanent impacts to the visual character of the study area. The site is currently used for water supply purposes and would continue to be used for water supply. Construction activity would result in changes to the appearance of the east connection site from certain locations within the study area and from the Hudson River. Views of the site and to the Hudson River along River Road near the east connection site would be adversely affected by the construction of Project 1. However, these effects would be temporary, limited in location, and are not expected to result in significant adverse impacts on the visual character of the study area. Therefore, construction of Project 1 is not expected to result in any significant adverse visual impacts.

Historic and Archeological Resources

Project 1 would have no significant adverse impacts on historic resources in the area west of the Hudson River. The west connection site and water main extension and dewatering pipeline route do not contain historic resources. Construction at the west connection site would not result in significant adverse physical (construction-related) or contextual (visual) impacts on the historic resource in the Area of Potential Effect (APE), the house and barn at 5495 Route 9W. To avoid adverse impacts on historic resources identified in the APE for the routes of the water main extension and the dewatering pipeline, a Construction Protection Plan would be prepared in consultation with the New York State Historic Preservation Office, if construction activities related to the final design of the water main extension and dewatering pipeline would be within a distance to potentially affect these resources. This plan would include the measures to be taken to avoid any inadvertent construction-related impacts on three historic resources located in the APE for the dewatering pipeline route: the house at 5495 Route 9W, the house and barn at 51 Old Post Road, and the house on River Road west of a property owned by CHG&E.

Portions of the west connection site have been determined to have low to moderate sensitivity for precontact archaeological resources and moderate to high sensitivity for archaeological resources dating to the historic period. Undisturbed and level areas adjacent to the streetbeds through which both original options of the dewatering pipeline route run were determined to have low or low to moderate sensitivity for precontact archaeological resources and low or low to moderate sensitivity for archaeological resources dating to the historic period. Areas within the APE with steep slopes (12 to 15 percent or more) or where disturbance has been documented are not considered to be sensitive for archaeological resources dating to either the precontact or historic periods. Phase 1B testing will be undertaken for those areas that have been identified as archaeologically sensitive. With this testing and continued consultation with SHPO regarding the need for, and implementation of, any Phase 2 or 3 investigations, Project 1 would have no potential significant adverse impacts to archaeological resources.

Project 1 would have no significant adverse impacts on historic resources in the area east of the Hudson River. There are no historic resources on the east connection site. One potential historic resource identified in the APE for the east connection site, the house at 225 River Road North, is at too great a distance to be physically affected by construction-related activities on the east connection site. There would also be no adverse contextual impacts on the potential this historic resource as a result of Project 1 construction activities.

Those areas of the east connection site that were not disturbed by the construction of existing DEP facilities and those that are covered by the dense layer of fill deposited on the site during the excavation of Shaft 6 have been determined to have moderate sensitivity for

precontact archaeological resources and low sensitivity for archaeological resources dating to the historic period. Phase 1B testing would be undertaken for those areas that have been identified as archaeologically sensitive. With this testing and continued consultation with SHPO regarding the need for, and implementation of, any Phase 2 or 3 investigations, Project 1 would have no potential significant adverse impacts to archaeological resources.

Socioeconomic Conditions

There would be no direct residential or business displacement, indirect residential or business displacement, or adverse effects on specific industries. DEP has acquired the parcels that make up the west connection site as a result of willing negotiations with property owners, and no property acquisition would be needed for construction of the water main extension or dewatering pipeline. No acquisition of property would be needed for construction at the east connection site. Therefore, no direct displacement of any residents, businesses, or employment associated with those businesses would occur either west or east of the Hudson.

The potential for a project to result in indirect displacement of businesses or institutions during a construction period is primarily concerned with whether construction activities would affect access to existing businesses, the potential consequences concerning their continued viability, and the potential effects of their loss, if any, on the character of the area. Since access to all businesses in the area surrounding areas of Project 1 construction, including the water main extension and dewatering pipeline, would be maintained throughout the construction period, Project 1 is not expected to affect access to businesses in such a way that would threaten their viability. Therefore, Project 1 is not anticipated to result in indirect displacement.

Given that there would be no direct or indirect displacement, there is no potential for adverse effects on specific industries. Project 1 would not result in indirect displacement of a residential population as it would not introduce a new, permanent use that would alter residential market conditions in the study area. Similarly, while Project 1 construction activities may be noisy and perceptible for extended periods of time, those impacts would be temporary and localized, and would not have a substantial effect on residential market conditions.

Based on preliminary estimates, the construction cost of construction of the shafts and bypass tunnel is estimated to be $901 million. Based on these costs, Project 1 is estimated to result in the following from all four phases of construction:

- Approximately 393 jobs in Orange and Dutchess Counties during construction.
- Approximately $39.2 million in tax revenues for New York State, the MTA, and Orange and Dutchess Counties.
- An annual water rate increase of $21 for New York City single-family households, and an increase in charges of $12 for upstate single-family households by the year

2020. For the New York City residents, the increases in annual water charges result in an approximately 0.20 percent increase in monthly rent. These increases in water charges are considered insignificant and would not result in a negative impact on residential consumers of New York City's water.

Community Facilities

Construction of Project 1 is not expected to have any significant adverse effects on emergency service providers. DEP would implement site safety protocols and would monitor compliance with these protocols on an on-going basis throughout the construction period. DEP would utilize contractors that are trained and equipped to handle potential emergencies at the west and east connection sites. Any potential calls to local emergency service providers would be for surface level support only. Furthermore, since contractors would be equipped to handle emergencies, the number of calls to existing service providers would be minimal. It is not anticipated that the construction activity would place significant demands on the ability of emergency service providers to respond to an emergency at the site or to their ability to provide emergency response service. Nor is it anticipated that construction activity would result in significant increases in demands for treatment at local hospitals. Therefore, construction of Project 1 is not anticipated to affect emergency service providers or hospitals.

Natural Resources

Construction of Project 1 on the west connection site would not result in significant adverse impacts to geology and soils, groundwater, floodplains, or aquatic or terrestrial resources, including threatened or endangered species or species of special concern. Site preparation activities (i.e., land clearing and grading) would result in the loss of about 19 acres of wildlife habitat, most of which are comprised of early successional forest, old field, and terrestrial cultural habitat associated with the two residences on the site. Loss of these habitats, which are common within the lower Hudson Valley, would not result in significant adverse impacts to these vegetative resources within this region of New York. The loss of these habitats would have the greatest impact on wildlife species that use successional habitats, particularly birds, and the vernal pool for breeding.

However, none of the mammals, reptiles, and amphibians known or expected to occur at the west connection site are strictly dependent on this relatively small area of old field or early successional forest habitats where clearing would occur. The loss of those individuals unable to move to suitable available habitat nearby would be adverse but would not result in significant adverse impacts to regional populations of these species.

The west connection site is considered suboptimal summer roosting and foraging habitat for Indiana bat, a state and federally-listed Endangered species, and the loss of some areas of terrestrial habitat on the site would not result in significant adverse impacts to populations of

this species. Further, all suitable Indiana Bat habitat trees would be removed within the recommended USFWS window, between October 1 and March 31. Although the west connection site was determined to have a low potential for providing breeding habitat for threatened or endangered bird species, should vegetation clearing occur between April 1 and September 30, the area to be cleared would be surveyed for potential nests of raptors and other threatened or endangered migratory bird nests. If nests of these species are identified, the NYSDEC and the USFWS would be contacted, as appropriate, and an application for incidental take permit(s) would be submitted as directed by these agencies. Additionally, in order to minimize the potential for adverse impacts to breeding migratory bird species which are protected under the Migratory Bird Treaty Act (MBTA), during the tree clearing of potential Indiana bat summer roosting trees, additional tree clearing would occur prior to March 31 at the same time as the clearing of the potential Indiana bat summer roosting trees, in three areas within the area of disturbance.

Site preparation activities would result in unavoidable adverse impacts to the approximately 0.09 acre of freshwater wetlands in the central portion of the site that provide vernal pool habitat for pool-breeding amphibians observed on the site. While the loss of this wetland and the vernal pool habitat it provides would have the potential to adversely affect amphibian breeding on the west connection site as well as individual reptiles and amphibians, the approximately 0.06-acre wetland within the western portion of the west connection site would be preserved and would be expected to remain viable habitat for the pool-breeding amphibian species in the area. With the preservation of the western wetland and enhancement by removal of invasive plant species, and enhancement of the buffer between this wetland and the area of disturbance to increase the vegetative screening, construction of Project 1 would not result in significant adverse impacts to regional populations of amphibians and reptiles with the potential to occur on the west connection site.

Nearly all of the mature forest within the site would be outside the limits of disturbance, and the wildlife species occurring in woodland areas are not expected to be significantly impacted at the individual or population levels. Therefore, construction of Project 1 at the west connection site is not expected to have significant impacts to any endangered, threatened, or special concern species, including Indiana bat.

Construction of Project 1 at the west connection site would require the recovery of groundwater during dewatering of the shaft that would be treated on-site and discharged through a new outfall to the Class C stream that runs through the southeast portion of the west connection site. The proposed outfall construction would occur outside the stream channel and above the ordinary high water line, thus minimizing the potential for adversely affecting the stream. Additionally, the discharge of stormwater and treated groundwater recovered during dewatering to the Class C stream in accordance with NYSDEC SPDES permitting requirements would not result in significant adverse impacts to the aquatic

resources of the stream. The proposed construction of a force main to supply potable water to the west connection site would occur outside the eastern wetland and would use construction techniques that would not require disturbance of the stream channel, thus minimizing the potential for adverse impacts to the aquatic resources of this stream.

The construction of the dewatering pipeline would not affect groundwater or floodplain resources. It would result in the permanent loss of a small amount of riparian wetland within the footprint of the outfall which would discharge to the Class A segment of the stream adjacent to the Hudson River. Impacts to aquatic resources and wetlands from the construction of the dewatering pipeline would be minimized by using trenchless construction and constructing the outfall outside wetlands and above the mean high water line to the greatest extent possible. Construction of the outfall would implement measures, such as the use of a coffer dam structure to contain resuspended sediment which will minimize potential impacts to water quality and aquatic biota. In addition, the tidal portion of the stream is not considered suitable habitat for Atlantic or shortnose sturgeon. The loss of a small amount of bottom habitat by any invertebrates associated with this habitat would not result in significant adverse impacts to regional macroinvertebrate populations or to fish due to a loss of prey.

Discharge of groundwater recovered during dewatering to the Class A portion of the stream in accordance with NYSDEC SPDES requirements would not result in significant adverse impacts to water quality or aquatic biota of the Class A stream or the Hudson River, or result in the failure of either to meet the Class A water quality standards.

Construction of Project 1 on the east connection site would not result in significant adverse impacts to geology and soils, groundwater, floodplains, or aquatic or terrestrial resources, including threatened or endangered species or species of special concern. Site preparation activities (i.e., land clearing and grading) would result in the loss of about three acres of habitat that is of limited value to wildlife, only one acre of which would be Appalachian oak-hickory forest habitat. The remaining areas would be already developed habitats, such as maintained lawn and disturbed areas. Loss of these habitats, which are common within the lower Hudson Valley, would not result in significant adverse impacts to these vegetative resources within this region of New York.

Habitat loss and construction disturbances at the east connection site are unlikely to significantly impact any endangered, threatened, or special concern species, including the Indiana bat. The east connection site is considered suboptimal summer roosting and foraging habitat for Indiana bat, and the loss of a portion of the woodlands would not result in significant adverse impacts to populations of this species.

The discharge of stormwater and treated groundwater recovered during dewatering to the Hudson River through the existing DEP outfall on the east connection site would be in accordance with NYSDEC SPDES permitting requirements and 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. 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

There is some potential for hazardous materials to be present at both the west connection site and the dewatering pipeline route. At the west connection site, this includes both hazardous materials in the existing structures (e.g., ACM and lead-based paint) as well as possible subsurface contamination associated with past activities (e.g., fuel oil storage or pesticide use). The dewatering pipeline route could have been contaminated by spills from nearby facilities, including a power plant and automotive facilities. Testing of soils at the east connection site found no significant contamination.

During construction of the shafts and bypass tunnel, any contamination discovered during construction will be remediated. The contractor may introduce a variety of hazardous materials to the project site to support the construction activity. The specific types and quantities of hazardous materials stored and used on the construction site would depend on the nature and extent of activities being performed (e.g., blasting, excavation, tunneling). Each contractor would provide Material Safety Data Sheets (MSDS) for the construction-related hazardous materials that they would introduce to the project site. In addition, these materials would be stored and handled in a manner that would prevent improper releases to the environment and/or exposure to site workers, according to applicable Federal, State and local regulations. These measures would be specified in a Construction Health and Safety Plan to be prepared by the contractor(s) in accordance with the hazardous materials contract specifications and OSHA regulations. All materials would be disposed of in accordance with Federal, State and local regulations. Therefore, the construction of the shafts and bypass tunnel would not pose a public health concern due to hazardous material exposure to the public or workers on site.

Air Quality

Construction of Project 1 on the west connection site would not result in any predicted concentrations above the NAAQS for NO_2, CO, PM_{10}, and $PM_{2.5}$ from stationary or mobile sources. In addition, maximum concentrations predicted locally at receptors near the west connection site would not result in cumulative concentrations above the NAAQS with the emissions from the east connection site; therefore, no significant adverse air quality impacts are predicted from the on-site construction and mobile sources during Project 1 construction.

Construction of Project 1 on the east connection site would not result in any predicted concentrations above the NAAQS for NO_2, CO, PM_{10}, and $PM_{2.5}$ from stationary or mobile sources. In addition, maximum concentrations predicted locally at receptors near the east connection site would not result in cumulative concentrations above the NAAQS with the emissions from the west connection site; therefore, no significant adverse air quality impacts are predicted from the on-site construction and mobile sources during Project 1 construction.

In addition, the predicted concentrations would not result in significant adverse impacts to air quality utilizing DEP's Interim Guidance Criteria for $PM_{2.5}$. The predicted concentrations under the various phases of the construction are anticipated to be below the 5 $\mu g/m^3$ 24-hour impact threshold with the exception of the cumulative scenario for the west connection site. The cumulative scenario analyzed the combination of the construction of the inundation plugs, the excavation of the tunnel, and the operation of the batch plant operating simultaneously for the bypass tunnel excavation and the concrete batch plant operation in the west of Hudson study area. The maximum 24-hour impacts under this scenario was predicted to be 5.2 $\mu g/m^3$, and occurred at the northern boundary of the construction site where an undeveloped wooded area is located, away from public access. At sensitive locations where the public has continuous access (e.g. the closest residence), the impacts were predicted to be substantially lower and would be well below the 5 $\mu g/m^3$ threshold. It was determined that the impact at the northern boundary should not be considered a significant adverse impact to air quality due to multiple conservative factors including: 1) the temporary nature of the construction. It is unlikely for the construction of the inundation plugs, the excavation of the tunnel, and the operation of the batch plant would all occurring simultaneously, and if they do occurred, the duration of the three construction activities operating simultaneously would be short. 2) The predicted impact occurring on the northern property line would present very little impact to the public since the property along the northern property line is not publicly accessible. And 3) conservative assumptions build into the analysis.

Therefore, it was concluded that the construction impacts would have no significant impact on the air quality.

Energy and Greenhouse Gas Emissions

The construction of Project 1 and the portion of Project 2 involving the connection of the bypass tunnel would include the following GHG reduction measures where practicable:

- The construction sites would utilize grid power to the extent practicable;
- DEP is strongly encouraging contractors to include the use of biodiesel blended at a 20 percent level with standard diesel (B20) for construction non-road engines and generators;
- Concrete used in areas other than the tunnel and shaft construction would include fly ash and slag, as practicable;
- The option of maximizing the interground limestone content of all cement used;
- Requiring the use of recycled steel;
- The reuse of excavated material; and
- Disposal of excavated materials at sites located near the connection sites.

Therefore, the construction of Project 1 and the portion of Project 2 involving the connection of the bypass tunnel would be consistent with New York City's GHG reduction goals.

Infrastructure

For the west connection site, Project 1 would not result in any significant adverse impacts in the areas of water supply, wastewater, or stormwater runoff While the proposed new impervious surfaces and changes in land use would potentially increase peak stormwater runoff flows, decrease infiltration, and increase pollutant concentrations in stormwater runoff, the proposed stormwater mitigation measures would minimize potentially adverse impacts. The post-development stormwater flows would be attenuated to the predevelopment flow conditions, thus decreasing erosion potential and maintaining water quality. The runoff reduction volume would be achieved through the use of on-site tree plantings and pits, a bioretention basin, and an approximately 14-foot-deep micropool extended detention basin. Overall, the proposed stormwater practices would re-introduce infiltration, provide filtering, and promote evapotranspiration.

For the east connection site, Project 1 would not result in any significant adverse impacts in the areas of water supply, wastewater, or stormwater. While the proposed new impervious surfaces and changes in land use would potentially increase peak stormwater runoff flows, decrease infiltration, and increase pollutant concentrations in stormwater runoff, the proposed stormwater mitigation measures would minimize potentially adverse impacts. The runoff reduction volume would be achieved through the use of a bioretention basin and underground sand filters. Overall, the proposed stormwater practices would re-introduce infiltration, provide filtering, and promote evapotranspiration.

Solid Waste

An estimated 510,000 cubic yards of rock, soil, and fill would be excavated during construction of the shaft on the west connection site and the bypass tunnel and an additional 2,964 pounds/week of construction worker-generated solid waste would be produced. This solid waste would be transported off-site by a private hauler. All excavated materials requiring off-site disposal would be handled and disposed of in accordance with applicable regulatory requirements. Therefore, no significant adverse impacts on the solid waste system would occur as a result of the solid waste generated during Project 1 construction activities on the west connection site.

An estimated 99,000 cubic yards of rock, soil, and fill would be excavated during construction of the shaft on the east connection site and an additional 1,508 pounds/week of construction worker-generated solid waste would be produced. This solid waste would be transported off-site by a private hauler. All excavated materials requiring off-site disposal would be handled and disposed of in accordance with applicable regulatory requirements. Therefore, no significant adverse impacts on the solid waste system would occur as a result of the solid waste generated during Project 1 construction activities on the east connection site.

Coastal Zone

The proposed project is located within New York State's Coastal Zone Boundary. The FEIS examined the consistency of the proposed action with the New York State's *Waterfront Revitalization and Coastal Resource Act*. The proposed action is consistent with all policies, including stormwater control (Policy 33) and non-point source discharges (Policy 37).

Public Health

A public health assessment is based on the analysis conducted for air quality, water quality, hazardous materials, and noise. As presented in the FEIS, no public health concerns were presented for air quality, water quality, or hazardous materials. With the commitment to provide receptor control measures for qualifying residences in the vicinity of the connection sites, it is not anticipated that there would be public health impacts due to elevated noise levels during construction at night.

Growth Inducement

Construction of Project 1 would not have the potential to alter regional growth patterns, impact residential settlement patterns, or affect the growth in employment centers. In addition, it would not expand the existing water supply but would instead be the first project of the Water for the Future Program, which would, once complete, make the system more safe and reliable.

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

Pursuant to the requirements of CEQR and SEQRA, the environmental review process must identify any potential significant adverse impacts, and those impacts must be minimized or avoided to the greatest extent practicable. As discussed in the FEIS, there would be no potential for significant adverse impacts associated with the operation of the bypass tunnel. In addition, the FEIS did not identify any cumulative impacts associated with the currently foreseeable elements of the Water for the Future Program.

Using a conservative analysis, the FEIS discussed the potential for temporary significant adverse impacts to result from construction of Project 1. Where such potential temporary significant adverse impacts were identified – Neighborhood Character, Transportation, and Noise during construction – measures are proposed to minimize or eliminate the anticipated impacts. These impacts and mitigation measures are discussed below.

Neighborhood Character

During shaft and tunnel construction the neighborhood character near the east connection site would be temporarily adversely affected. In particular, changes to the visual character of the east connection site and the increases in traffic, lighting, and noise during construction of the shaft and bypass tunnel would temporarily adversely affect the neighborhood character for those residences near the east connection site. Although this impact to neighborhood character is unmitigated, it would be temporary and would not be expected to result in disruptions to neighborhood character once construction is complete.

Noise

In the assessment of noise impacts, DEP examined the potential off-site noise impacts from the expected construction activities in each phase, and undertook evaluations of a range of potential measures to eliminate or reduce those impacts. As a result, for both the west connection and east connection sites, all practical noise control methods have been incorporated into the project. However, the temporary significant adverse noise impacts near the connection sites could not be fully mitigated. These noise impacts would be temporary and would not occur once construction is complete. In addition, DEP has committed to an extensive series of noise control measures, which are outlined in the Conceptual Noise Mitigation Plan (CNMP) for the project. A goal of the CNMP is to ensure that the proposed program's noise during construction is decreased to the maximum extent practicable. The CNMP includes conceptual guidelines for developing noise mitigation in the future when the construction contractor is selected, along with some specific noise control measures that have been committed to as part of the FEIS, a performance-based commitment for noise generated by construction of the proposed program, as well as mechanisms for communication with the public about concerns relating to noise from the proposed program. Together, these

measures are intended to reduce potential noise impacts resulting from the project to the extent feasible and practicable.

Specifically, the proactive noise control commitments of the CNMP include source controls, such as quieter backup alarms (where practicable and feasible and as allowed by applicable laws and regulations), maximum noise emission limits for equipment, rubber-lined containers and dump truck beds, and scheduling constraints for certain noisy activities. For example, during overnight work at the east connection site during shaft and tunnel construction, deliveries will be restricted to reduce truck noise in the area. Also included are path controls, such as noise barriers surrounding the east connection site and portable noise barriers surrounding loud stationary construction equipment. Receptor controls are also proposed for areas in which residents are eligible for controls to minimize noise levels experienced within bedrooms with windows facing the construction.

The temporary significant noise impacts would be mitigated to the greatest extent practicable, would be temporary and would not be expected to result in noise disruptions once construction is complete.

Transportation

The results of the traffic analysis indicate that there would be potential temporary significant adverse impacts at certain intersections in both the west connection and east connection sites. Suggested traffic mitigation measures would consist of signal timing changes, upgrading traffic signal controller and detectors at some intersections, a Traffic Management Plan (which would include an outreach/communication plan with the towns, schools, police, and other area agencies) for the connection sites in the west connection and east connection sites, roadway pavement monitoring on local roads accessed by trucks for the east connection site, and clearing some vegetation in the right-of-way near a few intersections in the east of Hudson study area. In addition, the truck route for access to the east connection site has been restricted.

These mitigation measures have been accepted by the New York State Department of Transportation and would generally eliminate these predicted temporary significant adverse traffic impacts, except at the intersection of Route 9W and Fostertown Road during the AM and PM peak hours. At that intersection, the proposed mitigation would reduce, rather than eliminate, temporary impacts from construction traffic. This remaining temporary significant adverse traffic impact could not be fully mitigated but would end upon completion of construction.

Other DEP Commitments

Blasting

DEP has developed a plan ensure that all blasting associated with the proposed project will follow all federal, State, and local requirements governing blasting procedures. DEP will also require pre-blast surveys, and if any direct or indirect damage is done to public and private property on or adjacent to the site by actions of the Contractor, he shall restore it to a condition equal to that existing before the damage was done.

Well Monitoring

Although the assessment in the FEIS determined there would be no adverse impact to local wells as a result of blasting or construction activities, DEP has developed a well monitoring plan as a precautionary measure, and will regularly review and monitor this information.

Public Outreach Liaison

Additionally, DEP will employ a Public Outreach Liaison, who will coordinate construction operations with the Towns, and will also be available to address community questions and concerns on any issue related to the project.

Water Supply

The City is in discussions with the Towns of Wappinger and Newburgh, respectively, on the construction of water mains for water supply to the DEP during construction. In addition, DEP has agreed to facilitate the Town of Wappinger with a connection to the Delaware Aqueduct at the completion of the proposed project.

Road Monitoring

Although the construction at the east of Hudson construction site is not predicted to have significant adverse impacts on local roads, DEP has agreed to a road monitoring program in the Town of Wappinger.

24-hour security

During construction, the west connection and east connection sites will have 24-hour security on site.

Permanent additional turn lane on New York State Route 9W

The south-bound left turn lane will remain in place on Route 9W at the completion of the project.

VI. Project Alternatives.

The FEIS evaluated numerous alternatives, including a no-action alternative, tunnel repair alternatives, connection alternatives, design alternatives, and construction alternatives. After careful analysis, no feasible alternatives were identified that would meet the needs and objectives of the proposed action while reducing or eliminating predicted temporary significant adverse impacts related to the proposed project. In fact, these alternatives might introduce additional or greater impacts when compared with the proposed program.

A traditional repair of the tunnel is not possible because of the significant duration of time the City would be without the Delaware water supply – up to four years; conversely, the construction of a third, parallel, aqueduct is cost prohibitive. Alternatives evaluating the feasibility of removing shaft and tunnel muck by rail or barge were not found to be practical for several reasons. To remove shaft muck by rail, the site would require extensive grading to accommodate a rail siding. Preliminary designs demonstrated that the significant amount of earthwork would result in the same or more trucks removing earth and rock as the construction of the shaft. It would also add several months of additional construction and would not reduce noise, transportation, or neighborhood character impacts.

DEP also explored removing shaft muck from the east connection site by barge. An analysis of this alternative demonstrated that muck could only be removed by barge during non-winter months, thereby reducing the benefit of overall truck trips to the site by one-fifth. While there would be a marginal transportation benefit, this alternative would increase costs and would not eliminate any temporary significant adverse impacts currently identified. In addition, new impacts associated with natural resources and visual resources would occur in the vicinity of the east connection site, along with potential off-site traffic impacts associated with unloading of the barges and truck transport of muck to its final destination.

VII. Conclusions and Findings.

The Final Environmental Impact Statement evaluated the environmental effects of construction of the proposed Rondout-West Branch Tunnel Repair. Having considered the FEIS, and the information and analysis contained therein, the Commissioner, on behalf of DEP, concurs with the findings of the FEIS and certifies that:

- The requirements of Part 617 of Title 6 of the Uniform Compilation of Codes, Rules, and Regulations of the State of New York ("the SEQRA regulations") have been met.

- Consistent with social, economic, and other essential considerations, from among the reasonable alternatives thereto, the actions to be approved are ones that would minimize or avoid adverse environmental impacts to the maximum extent practicable.

- Consistent with social, economic, and other essential considerations, the adverse environmental impacts revealed in the FEIS will be minimized or avoided to the maximum extent practicable by incorporating as conditions to the approval, those 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 617.11(d) of the SEQRA regulations.

Dated: June 26, 2012
Flushing, NY

Carter H. Strickland, Jr.
Commissioner
New York City Department of Environmental Protection