

May 21, 2009

Jeremy Rosenthal
NY State Department of Environmental Conservation
Division of Environmental Permits
625 Broadway, 4th Floor
Albany, New York 112233-1750

VIA US MAIL and EMAIL: deprmt@gw.dec.state.ny.us

Re: Riverkeeper's Scoping Comments on the Proposed Haverstraw Water Supply Project

Dear Mr. Rosenthal:

Please accept the following as Riverkeeper Inc.'s ("Riverkeeper")¹ scoping comments on the proposed Haverstraw Water Supply Project ("Proposed Project"). Please also consider this letter a statement of our status as an "interested" person pursuant to the State Environmental Quality Review Act ("SEQRA") regulations at 6 NYCRR Part 617, and accordingly, please send us a copy of all filed SEQRA documents (including, but not limited to, additional scoping documents, Draft Environmental Impact Statements, Generic Environmental Impact Statements, Environmental Impact Statements, and notices) as they become available.

Due to Riverkeeper's historic environmental and legal involvement with the Hudson River and its waterfront, and the unusual nature of this Proposed Project, (a proposal for an environmentally destructive and expensive desalination plant on the shores of the Hudson River, on a contaminated landfill site, and in a region which receives over 44 inches of rain annually),² we have a strong interest in seeing that the Proposed Project is evaluated with proper attention to all relevant factors. We urge all involved and interested agencies, as well as elected officials and the public, to scrutinize this proposal carefully pursuant to SEQRA and all other applicable laws, to ascertain that it is necessary and in the public interest. Moreover, if it is ultimately built, it must be done so in the most environmentally sound manner possible.

¹ Riverkeeper is a member-supported, not-for-profit organization, dedicated to protecting the Hudson River and its tributaries, and to safeguarding the drinking water supply for New York City. Since 1966, Riverkeeper has used litigation, science, advocacy, and public education to end pollution, restore ecological health, and revitalize waterfront use and access.

² For comparison with areas where desalination is more commonly utilized: Saudi Arabia receives 4" annually, and California receives about 17" annually, as reported in <http://www.advantagebuyer.com/>, <http://www.atlapedia.com/>, and <http://www.betweenwaters.com/etc/usrain.html> respectively.

We are gratified that the New York State Department of Environmental Conservation (“DEC”) has taken on the role of lead agency and identified several important topics as requiring additional analysis. Accordingly, we seek to further illuminate and emphasize those and other concerns, with our comments below.

1. We question the actual “demand” for this Proposed Project and do not see persuasive evidence of the “public necessity”³ for its implementation.

Pursuant to a Public Service Commission (“PSC”) decision in December 2006,⁴ regarding a three-year rate plan and merger, United Water has proposed methods to increase the water supply to Rockland County, in the near term and further into the future. However, we urge all relevant authorities and the public to understand the basic outline of the asserted “demand” for more water, the actual requirements of the PSC decision, and the nexus to a new \$100 million dollar desalination plant.

UWNY states that an increase in supply is to accommodate the anticipated gap between a December 2006 peak capacity of 45.5 million gallons per day (m.g.d.), and the anticipated 2015 estimated peak day demand of 52.6 m.g.d. But, please note: This increase in supply, 7.1 m.g.d., pursuant to the schedule in the PSC Order, is to be largely found over the next 7 years -- *prior* to the completion of the desalination plan (which is scheduled for 2015).⁵

Thus, in January 2007, UWNY stated that it had implemented a two tiered approach to meet the projected water demand. The first tier is the “near term” strategy to “develop new supplies and improve and maximize the use of existing sources.”⁶ As just noted, based on the fact that most, if not all of that 7.1 m.g.d gap due to the anticipated increases through 2015 will be found in system improvements and upgrades other than as would be provided from the desalination proposal, *the desalination proposal is directed primarily at the alleged increased demand during the years 2015 and after.* As UWNY explains:

The second tier of the strategy ... is the development of a long term water supply project that can be implemented in stages to meet the projected demands for the next 20 years. The project is anticipated to have an ultimate capacity of 7.5 m.g.d.; however it would be implemented incrementally to keep pace with water demands.⁷

³ See e.g., New York Environmental Conservation Law §15-1503(2): “In making its decision to grant or deny a permit or to grant a permit with conditions, the department shall determine whether the proposed project is **justified by the public necessity**, whether it takes proper consideration of other sources of supply that are or may become available ...”

⁴ Commission Order in Case No. 06-W-0131, Issued and Effective December 14, 2006 by the New York State Department of Public Service.

⁵ See Exhibit 11, “United Water New York Supply Commitments,” Commission Order in Case No. 06-W-0131, Issued and Effective December 14, 2006 by the New York State Department of Public Service

⁶ “Long Term Water Supply Project,” United Water New York, January 2007, Section 1.

⁷ *Id.*

Thus, the nature of this long-term planned increase in supply, in the form of an expandable desalination plant, is troubling to many observers.⁸ We ask that all officials and agencies review the precepts of Smart Growth, regional and watershed planning and distribution, LEED and sustainable building principles, water recycling and reuse, rainwater capture, conservation and the desirability of unguided growth in Rockland County and along the Hudson River, to be absolutely certain that even though system improvements can meet the increased “demand” over the next 7 years, the years after that require the construction of a major new supply.

2. A full range of land development scenarios and the precepts of Smart Growth and Sustainable Design should be included in the accurate and comprehensive evaluation of “projected demand” for Rockland County.

Especially given the rapidly changing economic times which have seen a sharp drop in building and economic resources in general, and, as advocated by Scenic Hudson,⁹ we urge that a range of land development scenarios for Rockland County be examined – including no-growth and low-growth options.

This is particularly important given one of the outdated premises underlying the long-term water supply increase proposal: Dr. Daniel Miller, evaluating UWNYS’s projected peak demand through 2020 testified...

“The higher rate of increase relative to that previously observed is likely due to the style of development recently experienced in Rockland, i.e., large single-family homes with extensive landscaping and irrigation systems...”¹⁰

This style of growth, large single family homes and extensive landscaping, is contrary to many of the tenets of smart growth, sustainable design and LEED¹¹ certification. For example, on the Project Checklist by the U.S. Green Building Council for LEED for Homes, items to accrue points leading to certification include: “sustainable” landscaping design, “limit turf,” “drought tolerant plants,” higher average housing density (7 to 20 units per acre), “rainwater harvesting,” grey water re-use, high or very high efficiency fixtures, and high efficiency water irrigation system.¹²

⁸ “A desalination facility’s most significant effect could be its potential for inducing growth... the degradation of coastal resources could increase beyond sustainable levels.” “Seawater Desalination and the California Coastal Act” California Coastal Commission, March 2004, 12.

⁹ As pointed out by Ned Sullivan, President of Scenic Hudson in written comments dated May 22, 2009.

¹⁰ Direct Testimony of Dr. Daniel M. Miller, P.S.C. Case No. 06-W-0131, and Case No. 06-W-0244, dated October 30, 2006, 8 (approximately – pages were unnumbered).

¹¹ Developed and administered by the US Green Building Council, the LEED (Leadership in Energy and Environmental Design) rating system is the most widely known and accepted green building certification program. www.usgbc.org/leed.

¹² Project Checklist and other information available at <http://www.usgbc.org/>.

Finally, regarding future development, experts have noted: “A desalination facility’s most significant effect could be its potential for inducing growth...”¹³ Thus, this Proposed Project might serve simply as a self-fulfilling prophecy – by its creation it could contribute to undesirable growth, unnecessary increases in demand, and eliminate incentives to implement progressive building and conservation methods.

3. All reasonable alternatives to the Proposed Project, including Conservation and implementation of Green Infrastructure, must be examined.

SEQRA requires consideration of all reasonable alternatives¹⁴ – not just a glance by the applicant, but rather a “hard look.” Moreover, SEQRA requires a “findings statement” prior to the final decision which, among other things...

must... certify that consistent with social, economic and other essential considerations from **among the reasonable alternatives available, the action is the one that avoids or minimizes adverse environmental impacts to the maximum extent practicable**, and that adverse environmental impacts will be avoided or minimized to the maximum extent practicable by incorporating as conditions to the decision those mitigative measures that were identified as practicable.¹⁵

Alternatives to the Proposed Project which must be studied, both alone and potentially in combination with other options to address the water supply for Rockland include conservation, Ambrey Pond, additional groundwater supplies, re-use of wastewater and grey-water, rainwater harvesting and other Green Infrastructure techniques, the use of Suffern Quarry, and increased supply from Lake Deforest.

We urge that a comprehensive engineering study be performed on evaluating the additional potential supply from rainwater capture and other “green infrastructure” projects. Rainwater is now a problem in Rockland County due to the “infiltration and inflow”¹⁶ of the water to the sewer systems, causing sewage overflows. For example, if more of Rockland’s 44 inches of annual rainwater was “harvested” in various catchment systems and used for lawn irrigation and other water supply needs, what would be the additional supply?¹⁷

¹³ “A desalination facility’s most significant effect could be its potential for inducing growth... the degradation of coastal resources could increase beyond sustainable levels.” “Seawater Desalination and the California Coastal Act” California Coastal Commission, March 2004, 12.

¹⁴ See e.g., 6 NYCRR 617.9(b)(1) “An EIS... must analyze the significant adverse impacts and evaluate all reasonable alternatives.

¹⁵ 6 NYCRR 617.11(d)(5).

¹⁶ This infiltration and inflow has led to numerous sewer overflows and resulted in violations of state and federal law. Thus, Rockland County Sewer District is currently subject to a DEC imposed Consent Order and is evaluating modifications so as to stop the flow of raw sewage and rain water into the streets and neighborhoods of Rockland County during wet weather events.

¹⁷ See e.g., <http://www.rainwaterrecovery.com/docs/RWRInc-release-EPA-visits-RWRInc-project.pdf>.

Regarding conservation and “Green Infrastructure,” as noted by Professor Franco Montalto in recent comments to the DEC:

In most cases water conservation and water recycling are cheaper and better alternatives to desalination (UNESCO 2006). In Rockland County, these efforts could take multiple forms including:

- Incentive programs to retrofit low flow fixtures into residential, commercial, and industrial sites throughout the service area.
- Leak detection and repair programs in homes. A U.S. Department of Housing and Urban Development (HUD) study indicates that residential leaks amount to 5 to 13 percent of total indoor water use (Gleick 2004). Leak detection in water supply systems should also be investigated.
- Investigate water rate changes and other incentives that would discourage use of potable water for non-potable use.
- Treatment and recycling of stormwater, greywater (non-industrial wastewater generated from domestic processes such as dish washing, laundry and bathing), or blackwater (water containing fecal matter and urine) to meet non-potable water needs such as toilet flushing, which alone amounts to about one third of indoor residential water use.
- Develop land use planning, landscape conservation and design requirements that reduce outdoor water demand. This can be accomplished through development of specifications regarding plant species and physical layout of gardens, parks, public right of way, parking lots, etc.”¹⁸

4. All potential adverse impacts must be thoroughly analyzed and weighed, with accurate and complete data, including those concerning the aquatic biota.

In response to the list of “potentially significant adverse environmental impacts” identified in the “Positive Declaration” issued by the DEC on April 2, 2009, Riverkeeper urges that all such impacts be subject to thorough scrutiny in the SEQRA process. Additionally, we emphasize the following:

- **Regarding wildlife injury and mortality from the water intake structures** (due to impingement and entrainment of fish, eggs, larvae and other aquatic biota), and the location of the intake in Haverstraw Bay, designated by the Department of State as a “Significant coastal fish and wildlife habitat.”¹⁹

A report commissioned by Riverkeeper and released on May 15, 2008, *The Status of Fish Populations and the Ecology of the Hudson*, produced by Pisces Conservation Ltd., reveals that many Hudson River fish are in decline. Of the thirteen key species studied, ten have declined in

¹⁸ Correspondence from Franco Montalto, Drexel University, to Willie Janeway, Regional Director DEC, dated August 1, 2008.

¹⁹ See http://www.nyswaterfronts.com/consistency_coastalpolicies.asp, and thus warranting all possible protections under SEQRA and other applicable laws.

abundance since the 1980s: including shad, tomcod, bay anchovy, alewife, blueback herring, rainbow smelt, hogchoker, white catfish, weakfish and white perch. Other important species not included in that study, such as the American eel, also show long-term declines. Thus, the evidence indicates an increasingly unstable ecosystem and long-term declines for signature Hudson River fish species. The decline of Hudson River fish has serious implications for the health of ocean fisheries, because the Hudson is one of the most important estuaries along the Atlantic seaboard, serving as a critical spawning ground and nursery for many Atlantic species.

Additionally, concerning the information set forth in the draft “DEIS” by United Water New York (“UWNY DEIS”)²⁰ the data presented is currently insufficient for an accurate analysis of impacts from the withdrawals and discharge of the Proposed Plant. More specifically, our observations are as follows:

- **Construction phase impacts**

The present draft document describes the need for piling and dredging during the construction of the intake facilities and notes the potential for piling noise to disturb or even kill fish. However, this analysis presently lacks sufficient detail. No information has been presented on the timing of piling and dredging works. This may be an important issue as many species use Haverstraw Bay seasonally. For example, the UWNY DEIS notes:... “[A] majority of the spawning and wintering populations of Atlantic sturgeon in the Hudson may reside here. The endangered shortnose sturgeon also overwinters here.”²¹ These impacts must be considered in weighing the alternatives. If the Proposed Project proceeds, to avoid impacts on sturgeon, piling and other disturbing activities over the winter months should be avoided. Similarly, there may be other times of year when ecological activity in the bay makes a particularly important contribution to the Hudson River, and adverse impacts must be considered, avoided and, or, mitigated.

In addition to noise pollution, dredging can also disturb ecosystems by increasing suspended sediment loads and releasing toxic material presently attached to the sediments. Increased suspended sediments can also reduce the dissolved oxygen in the water by creating an oxygen demand. These potential impacts need to be quantified more fully and, if appreciable, a means to reduce their impact presented. These might include the adoption of seasonal windows for dredging.

- **Operational impacts**

The central concern for the aquatic biota from operation is the entrainment of small aquatic life, and fish young stages in particular, into the water intake. The present proposal raises a number of questions requiring more detailed consideration.

²⁰ Available at <http://haverstrawwatersupplyproject.com/index.php/draft-environmental-impact-study-deis.html>.

²¹ *Id.* at 9-26.

- **The position of the intake**

The Proposed Project positions the water intake pipe 1000 to 1200 feet from the shoreline, about 10 feet above the river bed, and 10 to 15 feet below the water surface.²² The reason for this positioning is unclear, but is presumably linked to the water quality under differing climatic conditions. It is essential to know if this position places the intake in a zone that holds particularly high densities of any aquatic organisms and the young stages of fish in particular.

- **Tidal patterns of young fish abundance**

The UWNY DEIS states that the available ichthyoplankton data does not allow evaluation of entrainment over different tidal phases.²³ Further, there is at present no certainty about the proposed pumping regime - water may be withdrawn continuously or for approximately 12 hours in a day. It is necessary to evaluate information on the diurnal and tidal movements and densities of plankton in the area of the proposed intake. This would allow an analysis to be undertaken to determine if there are particular times of day or tide when entrainment would be especially high and during which pumping should be avoided.

- **The design and operation of the wedge-wire screens**

The technology proposed to reduce the environmental impact of water extraction is the installation of a 2mm wedge-wire screen fitted with an airburst cleaning system.²⁴ The approach velocity is planned to be less than 0.25 feet per second (fps) and the through slot velocity less than 0.5 fps. This technology reduces impingement losses and juvenile and adult fish may be protected. However, the entrainment of eggs and larvae of fish and small invertebrates must be carefully assessed.

For good protection of aquatic life, the approach velocity of 0.25 fps is required, but, it is questionable whether such a low velocity could be maintained and more information is required on this point. At through-slot velocities above 0.5 fps, entrainment and impingement rapidly increase, and thus the early life stages of some fish, including shad, will be vulnerable. Higher than 0.5 fps through mesh velocities would occur if the filtering area available to the pumps were appreciably reduced.

Reduction of the filtering area could occur if (1) there were high levels of debris in the water, for example, dead leaves, blocking the screens that were not efficiently removed by airburst cleaning, or if (2) biofouling occurred. Biofouling is the process by which a community of organisms gradually grow on the surface of the screen leading to the blocking of the mesh. Either possibility would lead to increased through-mesh velocities. This is because as the biofouling blocks the slots the water must pass across a reduced cross-sectional area. At present, insufficient information as to the potential for blocking of the wedge-wire screen is presented. For wedgewire screens to be effective, there must be a sweep velocity greater than the through mesh velocity along the surface in order to sweep debris and animals past the screen.

²² *Id.* at 2-13.

²³ *Id.* at 9-5.

²⁴ *Id.* at 2-13.

If the screens are positioned in static water, material will remain in the vicinity of the screen, and animals might be continually drawn onto the surface. Further, airburst cleaning may not function well in static water. considerable vertical shear with faster water currents occurring close to the surface. We do not believe that average estimated velocities will give an adequate representation of velocities of screens set 8 or more feet below the surface. At present there is insufficient information on the sweep velocity and its variation through time available to assess if the wedge-wire screen would be effective. Finally, if the Proposed Project were to proceed: Why use a 2mm slit width? Why not a 1 mm slit width and protect more of the aquatic life from entrainment?

- **The organisms targeted for analysis**

The present document targets seven key fish species: bay anchovy, river herring, American shad, Atlantic tomcod, striped bass, and white perch.²⁵ It is unclear why these are appropriate given the position of the intake. For example, the UWNY DEIS reports Atlantic silverside as one of the most abundant fish species.²⁶ Shouldn't this species therefore also have been included? Further, the UWNY DEIS states: "*Two shrimps and mysid species are a critical food resources (sic) for many juvenile and adult fin fish... and blue crab zoea and megalopae ... are abundant in this portion of the estuary.*"²⁷ Yet, entrainment of these invertebrates has not been considered, despite the fact that their importance as food resources for the fish is clearly acknowledged.

- **The discharge of saline water**

The Proposed Project includes plans to discharge the saline water from the reverse osmosis plant via the Haverstraw Joint Regional Sewage Treatment Plant (JRSTP) discharge:

The reverse osmosis (RO) process used for desalination would produce a concentrate that needs to be disposed. The Total Dissolved Solids (TDS) and chloride (Cl) concentrations in the RO concentrate would be about six to seven times higher than the Hudson River water withdrawn through the intake. To minimize the potential for adverse impacts to the aquatic resources of the Hudson River, the RO concentrate would be discharged into the treated effluent from the JRSTP, so that concentrate and non-saline effluent would be discharged together into the Hudson River through the JRSTP's diffuser, under the JRSTP's SPDES permit.²⁸

The UWNY DEIS presents scant information on the impact of the proposed mixed discharge on aquatic life in the vicinity of the discharge. In particular, information on the impacts during more extreme conditions, such as when the salinity of the river is unusually high, should be considered.

²⁵ *Id.* at 9-4.

²⁶ *Id.* at 9-19.

²⁷ *Id.*

²⁸ *Id.* at 9-33.

- **Regarding increased air pollutants and emissions of greenhouse gases (“GHG”) due to the increased production of electricity to power plant operation:**

According to United Water New York’s draft “DEIS,”²⁹ at full operation of 7.5 million gallons per day (using electricity for the reverse osmosis and high pressure pumps) the average electricity use will be 33,200 kWh per day, or between 4,427 and 6,520 kWh per million gallons of potable water produced.³⁰

This is an unusually high rate of electrical use, placing the Proposed Project at the bottom of the list of lowest scoring utilities. A New York State Energy Research and Development Authority study of 10 highest scoring utilities showed a much lower energy use -- averaging 324 kWh/Mgal versus 2,360 kWh/Mgal for the 10 lowest scoring utilities. Furthermore, Sea Level Rise (SLR), due to Climate Change may bring increased salinity into the Hudson River. With higher salinity levels, the plant would need additional electricity for water treatment, resulting in higher costs and additional GHG emissions. Increasingly dire projections concerning Sea Level Rise (SLR) indicate that SLR in New York City could be as much as 10 inches by the 2020s, and 55 inches by 2080s.³¹

Also concerning electrical use, as UWNYS’ own literature shows: the cost of operating this proposed desalination plant, as compared to a reservoir, is excessive. In a January 2007 statement, UWNYS indicated that the cost per thousand gallons from the Ambrey Pond alternative would be \$.70, versus \$1.79 per thousand gallons produced by desalination.³²

Finally, any project which increases electrical use and GHG emission must be scrutinized in light of the rapidly evolving recognition of the problem of Climate Change. On a global, national, regional and statewide basis, policy makers and legislators are moving towards increased regulation and limitations on GHGs. A document recently released for public review by the New York State Department of Environmental Conservation, Office of Climate Change, “Guide for Assessing Energy Use and Greenhouse Gas Emissions in an EIS,” (March 11, 2009),³³ states:

Global climate change is emerging as one of the most important environmental challenges of our time. There is scientific consensus that human activity is increasing the concentration of GHG in the atmosphere and that this, in turn, is leading to serious climate changes. Climate change will continue to adversely affect the environment and natural resources of New York State, the nation, and the world...

²⁹ Available at <http://haverstrawwatersupplyproject.com/index.php/draft-environmental-impact-study-deis.html>.

³⁰ Id. at 16-11.

³¹ Climate Risk Information, “New York City-Specific Climate Change Projects,” New York City Panel on Climate Change, (February 25, 2009), slide 2, or page 17 of written report.

³² “Long Term Water Supply Project,” United Water New York, January 2007, Section 4.1.1, and 4.1.2.

³³ Available at <http://www.dec.ny.gov/permits/52508.html>.

- The implementation of a desalination plant or any other form of increased water withdrawals raises concerns about potential movement upstream of the salt front due to the action of the water withdrawals.³⁴
5. **We have been informed that United Water New York has sought to secure stimulus funds for this Proposed Project: We urge that public officials proceed with caution on the use of any public funds for this proposal.**

Given the extensive list of expensive and critical upgrades which are needed for the State's existing water infrastructure facilities, we strongly recommend that there be no commitment of public resources for the Proposed Project at this time. Expenditures for unnecessary projects must not be permitted to redirect funds away from long delayed infrastructure repairs which are required to achieve federally mandated water quality standards.³⁵

6. **Conclusion**

In conclusion, we urge the DEC, all other involved and interested agencies, and public officials, to review the Proposed Project with the goal of ensuring a complete and current review of alternatives, impacts, applicable law and public policy goals. The environment, the communities of Rockland County, and the State of New York deserve nothing less. Thank you for your attention. Please contact me at (914) 478- 4501, x241, or rtroutman@riverkeeper.org if you have any comments or questions.

Sincerely,

\Rebecca Troutman

Rebecca Troutman
Staff Attorney

³⁴ "Salt-Front Movement in the Hudson River Estuary, New York" Abstract by M. Peter de Vries and Lawrence A. Weiss, U.S. Geological Survey, Water Resources Investigations Report 00-4024. Simulations of hypothetical withdrawals located at certain points along the Hudson River could cause up-stream salt-front movement.

³⁵ For example, pursuant to the Federal Clean Water Act, §402(q).