October 5, 2015

VIA E-MAIL
Hon. Kathleen H. Burgess, Secretary
Public Service Commission
3 Empire State Plaza
Albany, New York 12223-1350

Re: Case 13-W-0303 Proceeding on Motion of the Commission to Examine United Water New York, Inc.'s Development of a New Long Term Water Supply Source: Notice Seeking Public Comment on the Abandonment of the Haverstraw Project Plan

Dear Secretary Burgess:

Please accept the following comments in response to the above-referenced Notice dated August 6, 2015, and the Notice Extending Comment Period dated August 17, 2015, on whether it is in the public interest for the proposed Haverstraw Project to be abandoned.

Scenic Hudson's Interest

Scenic Hudson works to protect and restore the Hudson River as an irreplaceable national treasure and a vital resource for residents and visitors. A crusader for the valley since 1963, today we are the largest environmental group focused on the Hudson River Valley. Scenic Hudson combines land acquisition, support for agriculture, citizen-based advocacy and sophisticated planning tools to create environmentally healthy communities, champion smart economic growth, open up riverfronts to the public and preserve the valley's inspiring beauty and natural resources.

Scenic Hudson has been a party to this Proceeding since its commencement. Scenic Hudson has taken the consistent position since the Haverstraw Project was first proposed in 2007 that the numerous adverse environmental and economic impacts stemming from the proposed desalination plant all lead to the conclusion that it is not appropriate for Rockland County and not in the public interest. Further, it is clear that there is no need for a new, expensive, energy-intensive water supply infrastructure project like the proposed Haverstraw Project in Rockland County. There are more sustainable, safer and less expensive demand-side options available.

Background

In January 2007, United Water New York ("UWNY") proposed a plan to construct and operate a desalination plant on Haverstraw Bay (the "Haverstraw Project") in response to the New York State Public Service Commission's ("PSC" or the "Commission") December 16, 2006 Order substantially adopting a Joint Proposal under which UWNY would construct a long-term water supply project to be in service by December 31, 2015.[1] Following significant opposition from the public and elected officials questioning the need for the Haverstraw Project as well as its negative environmental and financial costs, PSC instituted this proceeding on July 19, 2013 "to examine the continuing need for and public interest in development of a new water supply source" for Rockland County.[2] PSC ordered UWNY to file a report containing the most recent information relating to projected demand and the need to secure a new water supply source.[3]

UWNY submitted its report on August 19, 2013, concluding that there was still a need for the proposed Haverstraw Project desalination plant by 2016.[4] On October 1 and 2, 2013, approximately 1600 people attended two public hearings in Rockland County, the vast majority of whom opposed the Haverstraw Project. On November 8, 2013, Scenic Hudson, along with hundreds of others, submitted comments demonstrating that, based on hydrological factors and the availability of alternatives, along with a marked decline in demand despite an increase in Rockland County's population, the Haverstraw Project was not needed.[5]

On May 22, 2014, Department of Public Service ("DPS") Staff submitted a Report on Need, updating the UWNY demand forecast to incorporate actual average annual water demand through 2013.[6] Based on the fact that water demand had decreased and actual water demand in Rockland County had not come close to reaching the levels that were projected in 2006 and 2010, Staff concluded that there is no compelling immediate need for a long-term water supply

[1] Case 06-W-0131, United Water New York, Inc. – Rates, *UWNY Long Term Water Supply Project* (January 12, 2007).
[2] Case 13-W-0303, Proceeding on Motion of the Commission to Examine United Water New York, Inc.'s Development of a New Long-Term Water Supply Source, Order Instituting Proceeding, Issued and Effective July 19, 2013.
[3] *Id.*
[4] Case 13-W-0303, Proceeding on Motion of the Commission to Examine United Water New York, Inc.'s Development of a New Long-Term Water Supply Source, *UNITED WATER NEW YORK INC.'S REPORT ON THE MOST RECENT INFORMATION RELATING TO PROJECTED DEMAND AND NEED FOR A NEW LONG-TERM WATER SUPPLY SOURCE IN ROCKLAND COUNTY* (August 19, 2013).
[5] Case 13-W-0303, Proceeding on Motion of the Commission to Examine United Water New York, Inc.'s Development of a New Long-Term Water Supply Source, *Comments of Scenic Hudson, Inc.* (November 8, 2013).
[6] Case 13-W-0303, Proceeding on Motion of the Commission to Examine United Water New York, Inc.'s Development of a New Long-Term Water Supply Source, *Staff Report on Need* (May 22, 2014).

source. Moreover, the updated forecast did not identify any need for a new long-term water source until at least 2020. Therefore, Staff recommended that PSC eliminate the requirement for construction of a major new long-term water supply source to be available by December, 2015.

UWNY disagreed with Staff's recommendation and continued to argue that the Haverstraw Project was needed immediately.[7] Scenic Hudson and other parties submitted comments on the Staff Report on Need pointing out that the Rockland County Task Force on Water Resources Management (the "Task Force") was created on June 17, 2014 by the Rockland County Legislature with support from the County Executive.[8] The mission of the Task Force is to develop a long-term County water plan that ensures a safe long-term water supply and incorporates sustainability, demand-side principles and conservation. Commenters urged the PSC to give the Task Force an opportunity to demonstrate that more sustainable, less expensive demand-side measures can effectively ensure that no long-term water supply project, especially the environmentally harmful and energy-intensive Haverstraw Project, is needed in Rockland County.

On November 17, 2014, PSC issued an Order Addressing Status of Need and Directing Further Study (the "November Order").[9] The Commission adopted Staff's demand forecast and found that there was no immediate need for a long-term water supply project in Rockland County and sufficient time existed for further studies. PSC ordered UWNY to both evaluate the development of further water supply resources and to study conservation opportunities in collaboration with the newly established Task Force. Specifically, PSC ordered UWNY to study the "feasibility, anticipated cost of development and description of the associated permitting process and processing time for a project or series of projects that could yield an additional 2-3 million gallons per day ("mgd") of water supply" and "what conservation opportunities exist, in collaboration with the Task Force, with the goal of identifying measures that may reduce demand by 2 mgd."[10]

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[7] Case 13-W-0303, Proceeding on Motion of the Commission to Examine United Water New York, Inc.'s Development of a New Long-Term Water Supply Source, *UWNY RESPONSE TO THE STATE OF NEW YORK DEPARTMENT OF PUBLIC SERVICE STAFF REPORT ON NEED* (July 2014).

[8] *See* Case 13-W-0303, Proceeding on Motion of the Commission to Examine United Water New York, Inc.'s Development of a New Long-Term Water Supply Source, *Scenic Hudson and Riverkeeper Initial Comments on DPS Report* (July 9, 2014).

[9] Case 13-W-0303, Proceeding on Motion of the Commission to Examine United Water New York, Inc.'s Development of a New Long-Term Water Supply Source, *Order Addressing Status of Need and Directing Further Study*, Issued and Effective November 17, 2014.

[10] *Id*. at 66-7.

UWNY submitted a Report on the Feasibility of Incremental Water Supply Projects and Conservation Opportunities in Rockland County, New York (the "UWNY Report") on June 30, 2015, concluding that there is the potential to reduce consumption by as much as 1 mgd total over 10 years through conservation programs directly implementable by UWNY and another 1 mgd total through an aggressive program to reduce Non Revenue Water ("NRW") loss.[11] In addition, the report identifies several small-scale incremental water supply projects that could be pursued depending upon the effectiveness of conservation and NRW reduction programs, as well as residential and commercial growth trends in Rockland County. The UWNY Report states that incremental supply of 1-3 mgd is likely feasible over a 10-year period. Based on this, UWNY states it is "confident that if the activities and associated targets identified in the report … are pursued to address short-term needs, supply and demand will remain in balance for the next 10 years."[12]

The Task Force submitted a report on Water Losses and Customer Water Use in the United Water New York System prepared by Amy Vickers & Associates, Inc. (the "Vickers Report") on July 22, 2015.[13] Among the conclusions of the Vickers Report are:

- Water demand in the UWNY service area has been flat to declining between 2000 and 2014 despite a growing service area population, a trend that may continue for the foreseeable future;
- A preliminary estimated combined total of 4.4 mgd to 7.0 mgd of potentially recoverable system leakage and customer water savings from conservation is currently available within the UWNY system; and
- The need for additional water supply capacity seems doubtful at this time given UWNY's potential water savings from aggressive system leak repairs and main rehabilitation, implementation of a comprehensive customer-oriented conservation program, and opportunities in Rockland County to develop alternative reuse and rainwater harvesting water supplies in the future.

[11] Case 13-W-0303, Proceeding on Motion of the Commission to Examine United Water New York, Inc.'s Development of a New Long-Term Water Supply Source, *United Water New York: Report on the Feasibility of Incremental Water Supply Projects and Conservation Opportunities in Rockland County, New York* (June 2015).
[12] Id. p. S-5.
[13] Case 13-W-0303, Proceeding on Motion of the Commission to Examine United Water New York, Inc.'s Development of a New Long-Term Water Supply Source, Report: Water Losses and Customer water Use In the United Water New York System, Prepared for Rockland County Task Force on Water Resources Management, by Amy Vickers & Associates, Inc. (July 2015).

Per its August 6, 2015 Notice Seeking Public Comment on Abandonment of the Haverstraw Project Plan, PSC now seeks comment on whether, given the current demand projections and the information contained in the UWNY and Vickers Reports, it is in the public interest for UWNY to abandon the Haverstraw Project and pursue other options to meet anticipated demand.

I. It Is In the Public Interest for UWNY to Abandon the Haverstraw Desalination Project.

The Public Service Law provides that PSC "shall encourage all persons and corporations subject to its jurisdiction to formulate and carry out long-range programs, individually or cooperatively, for the performance of their public service responsibilities with economy, efficiency, and care for the public safety, the preservation of environmental values and the conservation of natural resources."[14] In other words, both the PSC and the entities it regulates must operate in the interest of the public. As demonstrated below, given that average and peak demand is far less than what was projected and significant opportunities for conservation, leak reduction and, if necessary, incremental supply exist, it is in the public interest for UWNY to abandon the Haverstraw Project and pursue more sustainable and less expensive measures to ensure adequate water supply for Rockland County into the future.

Moreover, the expert reports before the PSC demonstrate that rather than pursuing the Haverstraw Project, the development and implementation of conservation plans and leak reduction are reasonable and viable alternatives at UWNY's disposal for it to reduce and control future demands and bring them into balance with supply. This action is required by 16 NYCRR § 503.4 before taking such a drastic measure as building an environmentally damaging, energy intensive and hugely expensive desalination plant on the shore of the Hudson River.

a. Water Demand in Rockland County Has Been Flat to Declining since 2007, Reflecting Nationwide Trends, and Obviating the Need for the Haverstraw Project.

The Vickers Report discusses historical annual water supply and demands in the UWNY service area, including safe yield capacities and population served, from 2000 through 2014.[15] Ms. Vickers' analysis of UWNY's data demonstrates:

[14] N.Y. Public Service Law § 5(2).
[15] Vickers Report p. 1-1, Fig. 1-1.

- Despite a population increase of over 28,000 (11.2%) from 2000 to 2014, annual average day demand in 2014 was 0.1 mgd less than in 2000, and the maximum day demand in 2014 was 2.8 mgd less than in 2000;
- Over the past 5 years, from 2010 to 2014, despite a population increase of nearly 6,200 (2.3%) annual average day and maximum day demands decreased by 1.3 mgd and 10.9 mgd, respectively;
- On a total system per capita basis - total annual production divided by population served – system per capita use average about 114 gallons per capita per day (gpcd) in 2000 but was down to 102 gpcd in 2014;
- For most years since 2007, average and peak day metered water demands as well as system per capita use has been declining;
- Population growth in the UWNY service area today is less likely to correlate to increased average and peak day water demands than it was in the past; and
- The trends in the UWNY service area are similar to those reported by many U.S. water suppliers for well over a decade.[16]

As the Vickers report states, the long-term trend of declining water demand is not unique to Rockland County. Over the past three decades, water use has steadily declined all across the United States, even as population has grown. The American Water Works Association ("AWWA") reported in 2012 that water use in single-family residences has declined steadily across the nation since the 1990s and is expected to continue to do so, and that the nearly universal observed decline is unrelated to economic conditions.[17] AWWA further concluded that as time goes on, household water use will continue to decrease on both a per capita and household basis and warned that "water planners should incorporate these changes in demand into future demand projections or run the risk of significantly overestimating future residential demands."[18]

Even private water suppliers have recognized that water demand is decreasing around the country. American Water, the largest private water utility in the country, reported in 2011 that there has been "a pervasive decline in household consumption" at the national and regional

[16] Vickers Report pp. 1-1 to 1-2.
[17] DeOreo & Mayer, "Insights into declining single-family residential water demands", American Water Works Association, April 2012.
[18] Id.

levels.[19] From an industry perspective, American Water recommends that utilities meet the reality of reduced demand by building that decline into their long-term planning.[20] Apt to the current situation in Rockland County, the AWWA wrote in 2012 that "Reductions [in indoor water use in single-family residences] are significant and need to be taken into account by water planners to avoid costly and avoidable overbuilding in water resources and infrastructure."[21]

The current "safe yield" – that is, the water supply available in the event of a drought equivalent to the worst drought on record – of UWNY's system is 34.5 mgd. For the last five years, annual average demand has hovered between 28 and 29 mgd, leaving a surplus of approximately 5.5 mgd. In its November Order, the PSC stated if the gap between annual actual demand and the safe yield of UWNY's system narrowed to 2 mgd or less (with the current safe yield, an annual average demand of 32.5 mgd), the Commission would need to react and instruct UWNY to pursue any viable water supply solution. [22]

Water demand in Rockland County has decreased by .35% on average for each year from 1990 to 2000 (a period of relatively strong economic growth), by .06% per year from 2001 to 2007 (a period of very strong economic growth), and over the past ten years has decreased by an average of .62%. Using that data from the previous two decades and projecting it forward over the next twenty years, and accounting for the expected population increase of .6% per year through 2035 as projected in the Rockland County Comprehensive Plan[23], projected demand would not reach the PSC threshold of 32.5 mgd until well into the 2030s *even without the additional conservation or leak reduction savings that experts agree are entirely achievable.*

Further, even if we take UWNY's conservative approach and assume merely 2 mgd of demand reduction potential exists in the system (as discussed in Section II, below) and that contrary to trends over the past 25 years demand will instead increase by .34% per year as Dr. Daniel Miller of the Rockland County Health Department projected in July of 2014 (based on trends beyond the past 25 years), demand would *still* be below the 32.5 mgd trigger in 2035. To be even more conservative, using the 95% confidence interval – to account for unusually high demand that would occur statistically 5% of the time – the 32.5 mgd trigger would not be breached until past 2030. If we take the Vickers Report's more accurate preliminary estimates of

[19] Duffy, Maureen, "Declining Residential Water Usage," American Water, 2011, at 1.
[20] Id. at 5.
[21] DeOreo & Mayer, 2012.
[22] November Order, at 43.
[23] Rockland County Comprehensive Plan, at 3.9, March 1, 2011.

conservation and leak reduction potential, the 95% confidence interval would only be 29.8 mgd in 2035 – or about 5 mgd less than the current safe yield of the system.

Dr. Stuart Braman and the Columbia University Sustainable Development Workshop worked with Rockland County in 2012 to study the potential for water conservation in the County. The work undertaken by Dr. Braman and the University was based on data supplied by UWNY and Rockland County. The conclusion of this study was that between 1.2 and 3.9 mgd of conservation potential existed in the UWNY system through a combination of high-efficiency rebate programs, outdoor irrigation measures, and water efficient spray-nozzle giveaway programs.[24] The Columbia workshops conservatively only examined high-efficiency rebates for the percentage of appliances that UWNY acknowledges are not low flow and/or are currently replaced each year in Rockland. This estimate is remarkably consistent with the Vickers findings although it was developed three years prior to the Vickers report, and, without even taking into account leak reduction potential, is significantly more than UWNY's estimates of water savings.

More people are using less water, and less water is needed to serve more people. Further, as the Vickers Report states, "the continuing effects of national and state water efficiency standards for plumbing fixtures and appliances along with changing economic conditions, may very well continue to keep customer water demands stable for the foreseeable future."[25] The natural cycle of replenishment of household and commercial appliances will continue to decrease the amount of water used as newer, more efficient appliances continue to replace older models. Further, shifting housing preferences from single-family homes to higher-density multi-family homes will drive down per-capita water demand even further.

Reduced demand and significant water savings potential obviates any need for the Haverstraw Project. At the very least, it provides a significant opportunity for UWNY and the Task Force to identify, design and implement conservation and supply alternatives that do not present the same cost and environmental risks presented by the Haverstraw Project.

b. Even UWNY's Overly Conservative Stance Admits a Balance in Supply and Demand Over the Next 10 Year Planning Horizon.

[24] *See* "In Pursuit of Conservation: A Sensitivity Analysis", Columbia University, 2012, at 13-15.
[25] Amy Vickers & Associates, Inc., "Report: Water Losses and Customer Water Use in the United Water New York System", prepared for the Rockland County Task Force on Water Resources Management, July 2015, at ES-1.

The UWNY report submitted on June 30 ("UWNY Report") studies conservation and supply opportunities in its Rockland County Supply system. The UWNY Report concludes that even if only the very conservative activities and associated targets identified in the report are pursued and accomplished, supply and demand will remain in balance for the next ten years. As discussed in Section I, above, using the conservative estimates provided by UWNY, water demand in Rockland County will remain below the system's safe yield and below the 32.5 mgd threshold in the PSC's November Order.

As potential incremental water supply projects, UWNY studied:

- Additional groundwater supply from wells;
- Interconnections with other water suppliers;
- Optimizing the supply from the Ramapo Aquifer and the Ramapo River Watershed; and
- Wastewater reuse.

The UWNY Report identifies 10 potential well sites that may warrant further investigation, and concludes that incremental supply of 1-3 mgd is likely feasible over a 10 year period.

In the areas of conservation and water recovery, the UWNY Report also studied demand-side methods to reduce the amount of water consumed by customers and improved management of the network by UWNY. UWNY only examined measures directly within the company's own control. The UWNY report states that it can take several actions:

- Continue its customer outreach and education programs;
- Continue the conservation rate structure introduced in 1981; and
- Implement a future conservation pilot program to identify additional ways to conserve, including working with municipal officials to update local ordinances and the sanitary code, partner with other utilities, institute a water audit program, and provide a WaterSense rebate program for customers who install water-saving devices and appliances.

Without any detailed discussion of the conservation potential of any specific measure, the UWNY Report concludes summarily that "preliminary evaluations indicate that strategic

implementation of these measures will reduce water consumption by as much as a total of 1 mgd over a ten year period."[26]

The UWNY Report also addresses efforts to reduce non-revenue water (NRW), which it defines as: (1) water that is lost through unbilled, unauthorized consumption; (2) apparent losses, which is water used by customers that is not billed correctly; and (3) real losses, which is water lost through system leakage, including water main breaks, leakage on mains, leakage and overflows at storage tanks, and leakage at service connections.[27] In recent years, NRW has constituted approximately 20-21% of the total water produced by UWNY in Rockland County.[28] This is well above the maximum 18% NRW target set by the PSC.[29] UWNY plans to take measures to reduce apparent losses by correcting billing errors, taking metering and billing initiatives to better correlate consumption and production data, installing advanced metering infrastructure, investing in renewal and replacement of water mains and services, and pursuing other initiatives to reduce total NRW. Despite pervasive high levels of NRW, UWNY estimates that only between 0.5 and 1.0 mgd of recoverable NRW exists within the Rockland County water system.[30]

Even taking UWNY's underestimate of the true potential for conservation and leak reduction at face value, it is undisputed that there is enough supply to meet demand over the next 10 years. The Vickers Report provides estimates of conservation and savings from leak detection that are far greater, pushing out the time the demand will remain below this threshold even further.

c. The Vickers Report and Other Conservation Analyses Show Even Greater Potential for Water Savings than UWNY Estimates, Demonstrating Clearly that the Haverstraw Project is not Needed at Any Time in the Foreseeable Future.

Amy Vickers, president of Amy Vickers & Associates, Inc., is a nationally recognized and award-winning water conservation and efficiency expert, engineer, and author of the award-winning *Handbook of Water Use and Conservation: Homes, Landscapes, Businesses, Industries,*

[26] UWNY Report p. 6-3.
[27] UWNY Report pp. 6-4 to 6-5.
[28] UWNY Report p. 6-5.
[29] 16 NYCRR §503.8(b).
[30] UWNY Report p. 6-8.

*Farms (*WaterPlow Press). Ms. Vickers was retained, with UWNY's endorsement, to study system (infrastructure) water losses and customer water use in the UWNY supply system for the Task Force.

The Vickers Report compared system water losses (e.g. leakage, accounting errors and theft) and customer (residential and nonresidential) water use to water industry standards, benchmarks and performance indicators for water use efficiency. Based on this analysis, preliminary estimates of the potential for long-term water savings from improvements to UNWY's water loss control and customer conservation programs were made.[31] The analysis looked at data from UWNY itself: system production, water loss, and customer meter data and related system and service area background information and reports; and UWNY submissions to the PSC (non-revenue water and Annual reports) and New York State Department of Environmental Conservation ("DEC") (water withdrawal reports and 2010 Water Conservation Program Report). The Vickers Report used American Water Works Association ("AWWA") Water Audit Software v5.0, and other AWWA standards and practices and other industry standards as benchmarks.

The Report contains several findings that demonstrate the availability of a significant amount of leakage savings and water conservation within the existing UWNY system:

- An estimated 2.5 mgd to 3.3 mgd of potentially recoverable leakage exists within the UWNY system based on revised AWWA Water Audit reports using corrected data, UWNY's Annual Report figures reported to the PSC, and AWWA defaults for the years 2012-2014. The Vickers Report states that it was necessary to recalculate UWNY Water Audit reports using AWWA Water Audit defaults because data errors, missing and inconsistent data, and flawed assumptions about water system losses resulted in errors in the UWNY Water Audit reports for 2012-2014. The UWNY reports found that non-revenue losses were largely made up of apparent losses and only a small portion of recoverable leakage, while the Vickers Report found the opposite: a high volume of recoverable leakage and a moderate level of apparent losses. The Vickers Report also states that its findings are consistent with what it found to be substandard schedules for main replacement and system leak detection and repair.

[31] Vickers Report p. ES-1.

- A preliminary estimate of 1.9 mgd to 3.6 mgd of potential water demand reductions from customer oriented conservation measures exists within the UWNY system, based on a detailed analysis of customer water demands for the past three years and a preliminary set of minimum water conservation and efficiency measures that could be adopted by UWNY for its service area. These measures could be targeted toward those single-family homes with high or excessive water demands, accelerated installation of water efficient plumbing fixtures and appliances, irrigation control, high-efficiency commercial and industrial equipment and processes, reuse, rainwater harvesting, water audits, rebates and a more affective conservation-oriented rate structure. As discussed in Section I above, this estimate is consistent with the 2012 findings of the Columbia University Sustainable Development Workshop.
- Thus, there is a preliminary estimated combined total of 4.4 mgd to 7.0 mgd of potentially recoverable system leakage and customer water savings from conservation currently available in the UWNY system. This represents a potential reduction of approximately 15%-25% in total system demands based on average day demands of about 29 mgd in 2014. The rationale for this estimate, which is much larger than the savings predicted by UWNY in its Report, is two-fold. First, given UWNY's high volumes of system water losses, a significant portion of which is due to leakage, and a largely untapped water conservation potential , such future demand reductions are likely feasible. Second, there are precedents for system-wide savings from conservation efforts that exceed 25% as evidenced by programs in New York City, Boston and Seattle, among others.
- In addition to conservation, additional measures such as water reuse technologies, rainwater harvesting, and green infrastructure options exist to drive demand down further. The Vickers Report urges the use of such technologies, which offer very different water supply and demand scenarios in the future than those assumed in the past. These measures can provide yet another source of water supply, besides the traditional supply sources in the UWNY system and new conservation and leakage prevention measures, which can be available to meet Rockland County's water needs.

The Vickers Report concludes that the need for additional water supply capacity seems doubtful at this time given the fact that demand has been declining, and can be expected to

continue to decline, and up to 7.0 mgd of water savings opportunities already exist in the system from aggressive leak repairs and main rehabilitation, implementation of a comprehensive customer-oriented conservation program.

> An optimistic picture of new water supply capacity emerges in the form of water waste that can be recaptured through system rehabilitation and conservation. United Water New York's decades-long record of high system water losses and minimal, outdated water conservation efforts for which there are little if any water savings to report has, in effect, produced an opportunity for new water supply capacity through optimized system rehabilitation and conservation. These untapped opportunities to drive down water demands, in addition to alternative water supply options such as reuse and rainwater harvesting options available to the county offer a range of future water supply and demand scenarios that are [in] sharp contrast to those considered in the recent past.[32]

This ultimate finding of the Vickers Report gives a clear answer to the question asked by PSC: the Haverstraw Project should be abandoned. There is untapped potential for savings within the system and sustainable technologies can maximize supply outside of the system. Clearly, abandoning the costly, energy-intensive and environmentally harmful Haverstraw Project in order to promote "efficiency, and care for the public safety, the preservation of environmental values and the conservation of natural resources" is in the public interest.[33]

d. Even if in the Future it is Determined that Additional Supply is Needed, the Construction and Operation of a Desalination Plant on the Shore of the Hudson River Will Never be in the Public Interest.

Due to their high cost and environmental impact, desalination plants are typically constructed in arid climates with no other water supply option – not locations such as Rockland County which receive abundant rainfall. The Haverstraw Project is projected to cost $189 million, a significant increase from when it was first proposed in 2007. The desalination plant would lead to higher water rates and Rockland County ratepayers should not have to shoulder the increased costs for an unnecessary, capital-intensive large water supply infrastructure project. Better overall management of the County's water resources would result in a better outcome for energy use and natural resource protection and be in the interest of the public.

[32] Vickers Report p. ES-5.
[33] N.Y. Public Service Law § 5(2).

The proposed Haverstraw Project desalination plant would also result in significant environmental impacts, including the degradation of Haverstraw Bay and its associated wetlands, increased energy use, and growth inducing impacts driven by a seemingly unlimited supply of water. The Haverstraw Project was proposed to be constructed on the Haverstraw Bay, a designated Significant Coastal Fish and Wildlife Habitat that plays a critical role as a spawning, feeding and overwintering ground for fish including the endangered shortnose and Atlantic sturgeon. The project would withdraw up to 10 million gallons of water per day from the Bay through a 900' pipeline, which would be installed by micro tunneling, and an intake structure with a maximum approach velocity of 0.25 feet per second. Water from the Hudson River would be treated to remove salt through filtration and reverse osmosis and sent for distribution, while the effluent would be sent to the Haverstraw Joint Regional Sewage Treatment Plant and then combined with the concentrated brine solution resulting from the osmosis procedure and ultimately discharged back into the Haverstraw Bay.

The water withdrawal and associated impacts of impingement and entrainment could harm populations of fish in the Haverstraw Bay, many of which are in decline and are listed as threatened or endangered. The project would also generate up to 2.44 million gallons per day of high salinity reverse osmosis concentrate that has the potential to create a change in salinity in the immediate area of the discharge, despite mixing with wastewater effluent.

In addition, desalination is among the most energy-intensive and costly ways to produce drinking water. The DEIS prepared for the Haverstraw Project predicted that it will take 4,000-6,000 kilowatt hours per million gallons of water to produce potable water for Rockland County , or a total use of 39 million kilowatt hours of electricity per year[34]. This will forever tie Rockland County's water rates to rising electricity prices. By comparison, the Poughkeepsie drinking water treatment facility, which also draws from the Hudson but doesn't require desalination, uses approximately one-third of the energy to produce about the same amount of water. The large amount of energy required by the reverse osmosis process will result in emissions impacting air quality and create an increase in greenhouse gas emissions that contribute to global climate change. This would be inconsistent with the NY State Climate Action Plan and its energy policies intended to promote energy efficiency.

[34] DEIS Appendix 11.3.

The proposed plant's water intakes are also 3.5 miles downstream of Entergy's Indian Point nuclear power plant, which has a long history of both permitted releases and unauthorized leaks of radioactive material, including tritium and strontium-90. Neither reverse osmosis nor any other water treatment technology can remove tritium from the water.

Finally, the damage sustained by UWNY's pilot plant in Superstorm Sandy demonstrates that locating a desalination plant on the Hudson River is not a good decision in the face of sea level rise and increasing storm surges. Impacts to surrounding facilities, including damage to the nearby Stony Point waste water treatment plant which released all of its raw sewage into the River during Sandy, could compromise the water source for the Haverstraw Project. Rather than building large and expensive but fragile infrastructure, the focus should be on identifying and implementing sustainable measures that are more resilient to climate change and its effects.

The findings of the Vickers Report, supported by robust analysis, should be endorsed by the PSC over UWNY's cursory look at conservation and leak reduction potential. Still, both the UWNY and Vickers Reports demonstrate that there is no need for a major new water supply for Rockland County over the planning horizon. The updated studies show that alternative, more cost effective and sustainable measures to the Haverstraw Project are available and in the public interest. Nonetheless, if in the future additional water supply in Rockland County is deemed necessary, the Haverstraw Project will never be in the public interest.

II. UWNY and the Task Force Must Work Together on Phase 2 to Develop and Implement Conservation and Other Measures to Effectuate the Water Demand Reductions Identified as Possible in the UWNY and Vickers Reports

The November Order placed two requirements on UWNY for submission to the PSC in reports:

1. PSC ordered UWNY to study what conservation opportunities exist, in collaboration with the Task Force, with the goal of identifying measures that may reduce demand by 2 million gallons per day and file a report identifying the feasibility, cost and estimated demand reductions associated with each measure.
2. PSC also ordered UWNY alone to study and report on the feasibility, anticipated cost of development and description of the associated permitting process and processing time for a project or series of projects that could yield an additional 2-3 mgd of water supply.

The UWNY Report only *just* meets the minimum mgd savings goals set by the PSC and production requirements set forth in the November Order. UWNY also only looked at options within its direct authority to implement, when the November Order contained no such restrictions. Moreover, rather than aggressively pursue alternative conservation and leak prevention methodologies to meet demand (as mandated by 6 N.Y.C.C.R. § 503.4) UWNY continues to cite the need for a conservative approach. UWNY has also apparently failed to consider revisiting conservation rates established in 1981, which could have a significant impact on conservation behavior.

The UWNY Report generally concludes that identified methods of alternative supply are expensive and difficult due to permitting complexity and other issues, despite its earlier choice to pursue a costly and complex desalination plant. With regard to potential water reuse alternatives, UWNY only repeats what was contained in its Draft Environmental Impact Statement ("DEIS"), which was skewed toward the Haverstraw Project. As for conservation, UWNY states it does not have the authority to mandate or enforce conservation by its customers - but this is not an excuse not to pursue this option in collaboration with the Task Force. The UWNY Report also fails to make any recommendations on what should be done or how to effectively implement the conservation measures it does identify. Finally, UWNY minimizes the potential savings from leak prevention, concluding that "a certain amount of nonrevenue water is normal for any water supply system, and cannot be avoided," when it should aim to further eliminate NRW to the maximum extent possible in the interest of its customers.

Rather than embrace the potential for water conservation and leakage prevention and provide further details on how to maximize these measures, UWNY commissioned a "peer review" of the Vickers Report by Ove Arup & Partners P.C (the "Arup Report") to criticize it and its conclusions.[35] Close reading of the Arup Report, however, shows that it does nothing to undermine the conclusions of the Vickers Report.

The cover page of the Arup Report includes the following disclaimer:

> This report take into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

[35] United Water New York Inc. Independent Review, Review of July 2015 Report Entitled "Water Losses and Customer Water Use in the United Water New York System," Prepared by Amy Vickers & Associated, Inc., by Ove Arup & Partners, P.C., August 4, 2015 (the "Arup Report").

Thus, the Arup report's authors explicitly disclaim any reliance on its conclusions by a third party.

The Arup Report first attempts to criticize the Vickers Report as failing to address certain of the requirements of the PSC's November Order, namely, "the feasibility, cost and estimated demand reductions identified with each measure." However, pursuant to the November Order, it was the obligation of *UWNY* to provide such information, not the Task Force, for whom the Vickers Report was prepared.[36] The Arup Report does not state that the Vickers Report fails to meet its agreed-upon Scope of Work and acknowledges that "several very good concepts and goals are presented, and applied, as indicated in the Vickers Report."[37]

Its main criticism is that the analysis is biased toward the use of national average or default values, as opposed to using a more balanced approach, i.e. using data of United Water's more analogous New Rochelle and Westchester systems. Because of this, the Arup Report claims, the amount of water savings available has been overestimated in the Vickers Report. Arup of course agrees with UWNY that a more reasonable estimate of leakage and demand reduction is in the range provided in the UWNY Report.

However, the entire purpose of the opportunity provided by the PSC's November Order to study the availability of alternatives to the Haverstraw Project was to move away from business-as-usual measures to more novel and forward-thinking approaches to water supply in the interest of conservation and cost-effectiveness. It would make little sense to use other UWNY water systems as benchmarks of water leakage prevention measures; the AWWA national default values and assumptions used in the Vickers Report present what is realistically possible, and are the proper standard for comparison. The idea is to move beyond what thus far has not been successful in reducing the high amount of leakage and NRW in the UWNY system.

Moreover, in criticizing the Vickers Report's conclusions with regard to conservation estimates, the Arup Report claims they are unrealistic because they would require both "infrastructure and drastic resident behavioral changes."[38] However, this is the entire purpose behind the establishment of the Task Force and the reason why the PSC asked the parties to

[36] November Order at 43.
[37] Arup Report at 15.
[38] Id.

study conservation potential. The Arup Report does nothing to demonstrate that the savings estimated by the Vickers Report are not in fact achievable.

The final criticism in the Arup Report, that highly experienced experts such as Amy Vickers and her staff at Vickers & Associates – whom UWNY itself sought to hire - suffered from a "general misinterpretation of complex UWNY data" is entirely unfounded. As demonstrated by the numerous requests for additional and clarified information made by Ms. Vickers of UWNY, she has a clear understanding of this type of data and what it should look like in terms of completeness and consistency. The Vickers Report's evaluation of UWNY's data as containing inconsistencies, errors and missing elements is not a basis for claiming it was misunderstood. Faced with such data, the Vickers Report properly used industry standards and assumptions to reach the conclusions that it did, which was an optimistic view for development of sufficient water supply in the existing system. However, instead of taking the findings of the Vickers Report to heart and working in the interest of its ratepayers to maximize efficiency in its system and conserve the County's vital water resources, UWNY chose to attempt to discredit the findings of the Vickers Report which found that the opportunity exists for much greater water savings within the system than estimated by UWNY itself.

In addition, UWNY has now withdrawn from the Task Force, despite the November Order's mandate to collaborate. This action will challenge the ability of Rockland County to meet its water needs through better planning and implementation of alternatives to the Haverstraw Project. With the preparation of the Vickers Report and the work of its members, the Task Force has made significant progress in just one year of existence. The Vickers Report is only Phase I of what is necessary, however. The savings estimates it contains "are preliminary only and will likely be refined as part of a more detailed analysis in the conservation planning project that will follow this study."[39] The anticipated Phase 2 study is required to fully evaluate the feasibility of the many identified conservation measures, develop a new demand forecast and implement a plan to ensure that supply safely exceeds demand into the future. As noted by the Vickers Report, "a more detailed analysis of the full range of conservation and efficiency measures available to reduce system leakage and customer water use is needed to produce a final

[39] Vickers Report at ES-3.

estimate of future potential water savings in the UWNY service area."[40] It is crucial for UWNY, as the providing water utility, to participate in this effort.

As part of its decision to authorize abandonment of the Haverstraw Project, PSC should order UWNY to work with the Task Force to achieve these vital conservation and water savings measures in the interest of the public, especially UWNY ratepayers. The identification and implementation of effective conservation and leak prevention methods to reduce demand and bolster existing water supply, rather than construction of a costly and environmentally harmful desalination plant is in the public's – and ratepayers' – best interest.

III. Conclusion

It is in the public interest for the Haverstraw desalination project to be abandoned in order for UWNY and Rockland County to pursue alternative, more environmentally sustainable water conservation, leak prevention and green technology measures to serve the County's water users into the future.

Thank you for your attention to these comments. Please contact the undersigned if you have any questions or require further information.

Sincerely,

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[40] Id.