STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

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

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At a session of the Public Service Commission held in the City of Albany on November 13, 2014

COMMISSIONERS PRESENT:

Audrey Zibelman, Chair
Patricia L. Acampora
Garry A. Brown
Gregg C. Sayre
Diane X. Burman

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BY THE COMMISSION:

INTRODUCTION

On July 19, 2013, the Commission instituted this proceeding to assess the projected demand for, and the requirement to secure, a new long-term water supply source in the United Water New York, Inc. (UWNY or the Company) territory located in Rockland and Orange Counties.[1] The Instituting Order required UWNY to file a report containing the most recent information relating to the projected demand for and need to secure a new water supply source in its service territory. UWNY filed its report on August 19, 2013 and further supplemented it on November 8, 2013. Public statement hearings and a public comment period were established to allow for the public to

[1] Order Instituting Proceeding (issued July 19, 2013) (Instituting Order).

comment on UWNY's development of, and need for, a new long-term water supply source and respond to the UWNY report.[2]

On May 22, 2014, the Department of Public Service Staff (Staff) submitted a Report on Need (Need Report) and a Notice Seeking Comments on the Need Report was issued the same day.[3] Initial comments on the Need Report were required to be submitted by July 9, 2014 and reply comments were due July 30, 2014. Parties were also invited to present prima facie cases of imprudence regarding UWNY's pursuit of the long-term water supply source on the same schedule. Staff hosted a conference on May 29, 2014 to discuss the Need Report and respond to questions about its contents.

The Commission is required to ensure that safe and adequate water service is provided to the customers of UWNY. This is a statutory obligation that the Commission cannot abdicate. It is therefore, in light of this statutory context that the record developed regarding the need for a long-term water supply source has been reviewed.

There is no dispute that UWNY's current supply portfolio can produce only a finite amount of water. Given this finite amount of water, and that demand will not be indefinitely stagnant, there is real possibility that additional water supply will be needed at some point in the future. The question before the Commission is when that additional water supply will be needed and how much. While there is varying degree of opinion as to the timeframe for when such supply will be needed, waiting until such need materializes is unacceptable.

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[2] Public statement hearings were held on October 1 and 2, 2013. The public comment period regarding the UWNY report expired on January 8, 2014.

[3] Subsequent to the issuance of the original Notice, the deadline for submission of comments was twice extended.

Forecasting is an informed prediction of a future outcome; by its nature it is not precise. There are external factors that influence a forecast. The Commission finds that the forecast propounded by Staff is a reasonable assessment of future demand for planning purposes, but acknowledges that, considering those external factors, the need date expressed in the forecast may not arrive as forecasted. Therefore, while the Commission finds that the need for new supply is delayed from the date originally forecasted, there remains a real likelihood that a need for a long-term water supply source ultimately remains. It appears that additional supply may be needed by approximately 2020, and by 2035, approximately 5 million gallons per day (mgd) may be needed, absent a reduction in water usage in UWNY's territory resulting from conservation or other measures. Assuming 2020 would be the earliest a significant need would materialize and recognizing the need for advance planning and response, actions must be taken now to plan for this potential event. The Commission, however, recognizes the real interest of the customers and communities most affected by the decision to pursue a long-term water supply source and, therefore, requires UWNY to utilize the small window of opportunity to further explore whether significant conservation measures can be identified and executed to produce reductions that can be relied upon, and whether smaller increments of supply can be identified to complement conservation measures and ensure adequate supply.

This order requires UWNY to provide reports on conservation and supply alternatives within six months of the issuance of this order and calls upon the Rockland County Joint Task Force on Water Resource Management (Task Force) to report on its plans for adopting feasible conservation options and the demand reductions associated with those measures. It also

requires UWNY to submit quarterly reports providing data on actual water usage to monitor the gap between supply and demand. The Commission also reviews arguments presented to open a prudence investigation regarding UWNY's pursuit of the Haverstraw Project and finds that the parties have failed to meet their burden of presenting a prima facie case of imprudence, and that UWNY's decisions were reasonable and therefore prudent, at the times they were made.

BACKGROUND

United Water New York, Inc.

UWNY is a private investor-owned water company that provides drinking water and water for fire protection to the residents and businesses in Rockland County, excluding the Villages of Suffern, Nyack and South Nyack. UWNY also serves a small portion of Orange County in parts of the Towns of Tuxedo, Warwick and Monroe. It is required to provide a safe and adequate supply of water to satisfy the needs for domestic and firefighting water use of a quality that complies with safe drinking water standards.[4] It supplies water service to 73,000 customers of record in Rockland County and serves approximately 87% of the County residents.

Regulatory Jurisdiction

The Commission exercises jurisdiction over private investor-owned water-works corporations and has the statutory obligation to ensure the provision of safe and adequate service and facilities at just and reasonable rates.[5] The Commission's rules set forth requirements applicable to water pressure and quantity of supply[6] and require compliance with the Ten-State

[4] Public Service Law (PSL) §89-b(1).

[5] PSL §89-b(1) and §89-c.

[6] 16 NYCRR Part 503.

Standards (the Standards).[7] The Standards require that potable water suppliers with surface sources meet the maximum projected water demand of the service area as shown by calculations based on a one in fifty year drought, or the extreme drought of record, including consideration of multiple-year droughts, and provision of a reasonable surplus for anticipated growth, compensation for losses, such as silting, evaporation, and seepage. Similarly, the Standards require that groundwater sources must equal or exceed the design maximum day demand with the largest producing well out of service. Collectively, the combination of the resulting surface and groundwater source capacities are known as the "safe yield", which represents the quantity of water that can be reasonably counted on during periods of stress.

Commission regulations require water companies with surface supplies to maintain a regularly updated projection of future demand that takes into consideration forecasted growth or decline in both the number of customers and in system usage for at least a ten-year period into the future.[8] When a projection shows that demand will outstrip supply, the utility must act to control future demand, and, where necessary, secure additional supply.

Commission regulations also require water utilities to maintain records of their annual rate of non-revenue producing water (NRW), which is the difference between the amount of potable water produced by a utility and the amount of water charged to ratepayers.[9] Sources of NRW include: authorized unmetered water use (fire fighting, system flushing); unauthorized use that is under-reported (defective metering and theft); and, physical

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[7] Recommended Standards for Water Works (2012 Edition), Great Lakes - Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, Part 3.1.1 (a)&(b) and Part 3.2.1.1.

[8] 16 NYCRR §503.4.

[9] 16 NYCRR §503.8.

losses through leaks. New York State-regulated private water utilities are required to notify the Commission if annual NRW exceeds 18% of production, explain the specific steps taken to reduce nonrevenue producing water to acceptable levels, and, describe significant events affecting the NRW level.

Forecasting future water supply need necessarily requires consideration of both demand growth and supply adequacy. Factors that influence demand include the number of customers served in a service territory, per capita actual usage of those customers, projected population growth and economic development. Forecasts of demand are also influenced by both on-going and expected additional conservation activities, additional penetration of new low water use technologies as well as expectations regarding improvements in the annual level of non-revenue water. To calculate available supply, the Commission considers the available system safe daily yield. The Commission typically calculates supply need by ensuring a safe reserve between projected water usage and system safe daily yield in accordance with the Standards.

The New York State Department of Environmental Conservation (DEC) regulates drinking water supply through public water supply permits, which set withdrawal amounts and other conditions for withdrawal of drinking water from each drinking water source.[10] Each applicant seeking a public water supply permit is required to document its existing and future water conservation plans as part of the permit review process. The New York State Department of Health regulates water quality as it relates to Public Health.[11] The Rockland County Department

[10] Environmental Conservation Law (ECL) Article 15 and its implementing regulations (6 NYCRR Part 601).

[11] Public Health Law §§201 and 225; 10 NYCRR Chapter 1, Part 5, New York State Sanitary Code, Subpart 5-1 and Public Water Systems, Part 170, Sources of Water Supply.

of Health (RCDOH) is responsible for enforcing certain public health laws relating to water supply in Rockland County, including the New York State Sanitary Code.

History of Need and Commission Proceedings

UWNY has engaged in planning for the construction of a major new water supply project since the early 1960s. In the early 1980s, the Company proposed development of the Ambrey Pond Reservoir because water demand trends indicated a need for a major supply addition by the 1990s. The DEC issued a permit for the Ambrey Pond project in 1987, upon the condition that construction would begin when average annual demand reached 27.9 mgd for two consecutive years. UWNY, after a reevaluation of need in 2000, changed the design to a reservoir with one-third the capacity of the original proposal, and put off the construction date to 2010. UWNY did not commence construction, because of the development of smaller, short-term supply solutions, the ongoing beneficial effects on demand from imposition of the summer/winter water consumption rate differential in 1980 and 1982,[12] and implementation of conservation measures.

The renewed need for a new long-term water supply source arose in 2006, after UWNY's failure to satisfy its peak demand over a number of years and Rockland County's experience with a series of droughts in 1991, 1993, 1995, 1997, 1999, 2001, 2002 and 2005. In the Commission proceeding resulting in the

[12] The Commission approved a 3:1 summer rate differential and instituted budget billing to avoid dramatic billing swings (Case 27567, Spring Valley Water Company, Inc. - Phase II Marginal Cost Study and Rate Design, Opinion and Order Determining Rate Design (issued May 30, 1980), p. 16); as a result of opposition to the high rate, in 1982, it was reduced to 1.5:1 (Case 27567, supra, Order Modifying Rate Structure (issued April 28, 1981).

2006 Rate Order,[13] RCDOH stated that a new water supply initiative was essential, given its projections that UWNY had an immediate problem satisfying peak demand and a similar but less immediate problem meeting average demand.[14]

In its 2006 Rate Order, the Commission approved a two-stage approach to satisfy projected water demand: first, development of new short- and intermediate-term water supply projects to meet specified peak and average day volume commitments with volume targets identified through 2015; second, a milestone schedule for the development of a long-term water supply project. Specifically, the first stage consisted of a plan for UWNY to increase its total three-day sustainable peak supply over the existing 45.5 mgd by 7.1 mgd to 52.6 mgd by 2015 and to increase its yearly average daily supply by 1.5 mgd over the existing 33 mgd to 34.5 mgd by 2015.[15] The second stage required, among other things, that UWNY propose a new long-term major water supply project in 2007 and begin construction of it no later than May 31, 2013, to ensure that the supply source was in service by the end of 2015.[16] The 2006 Rate Order was neutral with respect to selection of a long-term water supply solution and did not specify a volume of supply that the long-term water supply source should provide. The parties in the 2006 proceeding supported the development of a new water supply source and agreed to use their best efforts to assist the Company in meeting its

[13] See Case 06-W-0131, United Water New York - Rates and Case 06-W-0244, United Water New York Inc. and United Water South County - Merger, Order Approving Merger and Adopting Three-Year Rate Plan (issued December 14, 2006) (2006 Rate Order).

[14] Ibid., p. 25.

[15] Ibid., p. 22.

[16] Ibid., Joint Proposal, Exhibit 11. Construction was expected to take approximately 30 to 33 months.

construction milestones on time and to take action to facilitate the DEC and other regulatory permitting processes.[17]

In January 2007, UWNY submitted to the Commission a project description for a long-term major water supply project, including a description of the Haverstraw Project and an explanation of the reasons for its selection, when compared with other options.[18] UWNY evaluated a number of potential large-scale long-term water supply options, including the Ambrey Pond Reservoir, desalination of Hudson River water, additional groundwater supplies, reuse of wastewater, increased use of Lake DeForest and use of the Suffern Quarry. UWNY determined that several of these possible sources did not provide viable long-term water supply solutions, concluding that only two viable supply projects remained, specifically, the Ambrey Pond Reservoir and Hudson River desalination facility. It further evaluated these two projects, according to criteria relating to drought tolerance, dam safety concerns, expandability, permitting requirements, complexity of construction and projected cost. UWNY concluded that a Hudson River desalination facility, i.e., the Haverstraw Project, would best serve the public health and safety because it is a more reliable, financially prudent, and environmentally sound option than the Ambrey Pond Reservoir project.[19] In January 2008, UWNY filed an initial Draft Environmental Impact Statement (DEIS) with the DEC in connection

[17] Ibid., Joint Proposal, XI.1.

[18] Case 06-W-0131, supra, and Case 06-W-0244, supra, Long Term Water Supply Project, dated January 12, 2007.

[19] Although the 2006 Rate Order recognized that the Commission could institute a proceeding to investigate the proposal, no such action was taken (Case 06-W-0131, supra, Order Approving Merger and Adopting Three-Year Rate Plan, Joint Proposal, XI.3).

with its request for permits authorizing its withdrawal of water from the Hudson River for use in the Haverstraw Project.

In the 2009 rate proceeding, environmental organizations, citizens, and elected state and local officials expressed concerns about the need for the Haverstraw Project and its costs, and suggested alternatives. Commenters requested that the Commission perform a current assessment and reexamination of the need for the Project.[20] In its 2010 Rate Order, the Commission noted that DEC had begun its environmental review of the Haverstraw Project and anticipated that the final determination and schedule for development of a new, long-term supply source would result from the combined actions of state government, local communities, concerned citizens and the Company in the DEC proceeding.[21] Given the DEC process and its opportunities for public involvement, the Commission decided not to conduct another examination of UWNY's plans for a long-term water supply source.[22] The Commission's 2010 Rate Order adopted the peak volume and yearly average day volume commitments contained in the 2006 Rate Order as well as the milestone commitment schedule for development of a long-term major supply project.[23] The Company was authorized to file for Commission approval of a surcharge to recover carrying charges on development costs associated with a long-term major supply

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[20] Case 09-W-0731, United Water New York Inc. – Rates, Order Adopting Joint Proposal as Modified and Establishing a Three-Year Rate Plan (issued July 20, 2010), pp. 8-9 (2010 Rate Order).

[21] Ibid., p. 25.

[22] Ibid., p. 26.

[23] Ibid., Joint Proposal, Appendix 7. The peak volume, yearly average day volume and long-term major water supply project milestone commitments included in the Joint Proposal were identical to those set in the 2006 Rate Order.

source at the time significant construction began, which was expected to be on May 31, 2013.

In the event that the Company would not meet a construction milestone, the 2010 Rate Order required the Company to advise the parties in writing and schedule a meeting to discuss the matter.[24] No negative performance incentive payment was attached for failure to begin construction on or before the target date.[25]

Haverstraw Project

The Haverstraw Project involves the construction and operation of a new water intake, intake pumping station and water treatment facility in the Town of Haverstraw. The Project would collect and treat water from the Hudson River and deliver up to 7.5 mgd of potable water in three phases for the use of UWNY customers. UWNY proposes the Haverstraw Project because it states it is the least expensive and most viable option for acquisition of a new water supply source to satisfy future demand. It intends to build the Project in stages, each phase producing 2.5 mgd of additional supply, as needed to satisfy the pace of future water demands.

DEC serves as the lead agency for environmental review of the Project, in accordance with the State Environmental Quality Review Act (SEQRA).[26] Its permitting authority for the project includes several permits relating to development of a new water supply source. In October, 2008, UWNY filed an application for DEC water permits and a DEIS for its proposed long-term supply project with DEC. In June, 2009, DEC issued a

[24] Ibid., Joint Proposal, Section X.2.

[25] Ibid., pp. 25-26.

[26] Department of Environmental Conservation, Application for Permits Pursuant to Environmental Conservation Law Articles 15 (Water Supply and Protection and 17 (Water Pollution Control) et al. by United Water New York Inc.).

final scoping document to focus its analysis on key issues during its review of the DEIS.[27] The scoping document requested extensive information on population and demand growth projections, existing water capacity and yield and analyses of water supply. On January 18, 2012, DEC declared the DEIS complete and adequate and, in March 2012, held two public statement hearings on the proposal. On January 31, 2012, DEC issued a supplemental public notice extending the public comment period and announcing a new legislative public hearing date.

In December 2012, UWNY submitted a draft Final Environmental Impact Statement (FEIS) and permit applications to the DEC. UWNY cannot begin construction of the Haverstraw Project until DEC approves the FEIS and it obtains necessary permits from the DEC and other regulatory agencies. While DEC was reviewing the draft FEIS, opponents petitioned the Commission to reconsider the need for a new long-term major water supply project the Commission directed to be constructed in its 2006 and 2010 Rate Orders, based on the passage of time, decline in water demand, changed circumstances, and provided suggestions for alternative methods of controlling demand or obtaining supply. As of the date of this Order, DEC has not issued a FEIS.

STAFF REPORT ON NEED

On May 22, 2014 Staff submitted a Need Report analyzing the need for a long-term water supply source.[28] Staff's report focused on the requirement that UWNY must

[27] Department of Environmental Conservation, New York State Environmental Quality Review Act Final Scoping document – United Water New York, Haverstraw Water Supply Project, dated June 29, 2009.

[28] Case 13-W-0303, Department of Public Service Staff Report on Need (May 22, 2014).

continue to provide safe and adequate service, and whether or not that responsibility could reasonably be met without the addition of a new water supply. Staff updated the UWNY water demand forecast to incorporate actual average annual water demand through 2013. It also produced its own average water demand forecast. The Need Report summarized and considered comments received throughout the pendency of the proceeding, identified major issues, characterized the perspectives of UWNY and commenters, and provided Staff's analysis and recommendations relative to those subject areas.

Staff concluded that there is no compelling immediate need for a long-term water supply source; however there is an eventual need for significant supply additions. Based on Staff's updated forecast of average annual water demand, Staff identified a need for a new long-term water source by approximately 2020.[29] Staff recommended: the Commission incorporate more recent years of demand information; UWNY be directed to file quarterly reports providing regular updates of actual average and peak monthly demand/consumption and projections of future demand; the Commission eliminate the requirement for construction of a major new long-term water supply source to be available by December, 2015; UWNY continue to pursue necessary DEC water permits for the Project, subject to the condition that construction does not begin until water demand surpasses a specific measure, when average daily demand

[29] The graphic representation of Staff's forecast included in the Need Report and the explanatory information provided in Appendix C of the Need Report is attached as Appendix A of this order. Because of significant year-to-year variance in demand above and below the average annual demand trend, a confidence interval-based approach is used. The upper limit of the 95% confidence interval is used to ensure that safe yield supply is available to meet the anticipated variations in demand. To account for this variation, a confidence interval above the Staff projection must be added.

exceeds 31.5 mgd for a 12-month period, and/or the Commission confirms the need for beginning construction;[30] UWNY develop and file by December 1, 2014, additional rate design proposals that could further influence and constrain demand; UWNY develop a plan for additional conservation measures consistent with the Commission's requirements;[31] and that UWNY update its analysis of the potential for expanded use of additional groundwater resources.

At the May 29, 2014 technical conference, parties requested the underlying support for the graph depicting Staff's forecast in the Need Report. Staff provided supplemental explanatory information (Supplement) to the parties on June 24, June 27 and July 7, 2014 further explaining its analysis.[32] Staff stated that its demand forecast is premised upon the fact that over the long-term, key drivers of average demand are population (residential) and economic activity (non-residential). To assess future demand, Staff updated the historic average demand analysis to include recent actual water usage data and then developed a forecast of average demand by applying per capita demand projections to population forecasts (residential) and employment forecasts for Rockland County (non-residential). The demand projections were then compared to the available "safe yield" supply.

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[30] This trigger is projected to occur in 2021. Staff explains that demand exceeding 31.5 mgd for a 12-month period will signify that actual demand is reaching the point that new supply is needed while also allowing time to explore and implement alternatives. Staff stated that this available reserve between demand and safe yield could become uncomfortably narrow and vulnerable to short-term swings in demand.

[31] 16 NYCRR §503.4.

[32] DMM Item Number 95.

The per capita consumption rate applied by Staff incorporates the use of both the most recent three-year average residential consumption and the ten-year average residential consumption. Staff describes that its forecast started with the most recent three-year average residential per capita consumption and slowly increased the per capita use up to the ten-year average, which was achieved by 2026. For both residential and non-residential per capita use, Staff's forecast beyond 2026 assumed continuing conservation of .1% of average demand per year to account for continued turnover of fixtures and new water use technology, as well as a modest improvement in the annual level of non-revenue water percentage over the next decade. Staff explains that the most recent three-year per capita use was the low point in terms of residential per capita consumption, which Staff argues is attributable to consumption pattern changes due to the recession and is unlikely to be sustained. The per capita consumption data was then multiplied by the projected residential population to develop overall residential demand.

Staff reports it used Rockland County's population forecast, updated for the actual 2010 census data, as its residential population source. For non-residential demand, Staff used Moody's April 2013 employment forecast for Rockland County.

DISCUSSION AND ANALYSIS OF COMMENTS

Throughout the pendency of this proceeding, approximately 1,500 comments were received from approximately 1,100 members of the public, elected representatives and interest groups. The Need Report summarized the comments received from the initiation of this proceeding until the date of its filing on May 22, 2014, including comments made at the

public statement hearings, and they will not be repeated here. Since the filing of the Need Report approximately 650 comments were received. Considering all of the comments received to date, approximately 200 support the need for a long-term water supply source and construction of the desalination plant. The remainder of the comments, with the exception of a few neutral comments, voice opposition to the construction of a long-term water supply source and specifically, the Haverstraw Project, for a variety of reasons and offer alternatives to the desalination plant. Comments relevant to the scope of this proceeding are summarized and analyzed within the body of this order. The order will first address comments received regarding the Need Report and will then focus on comments addressing prudence issues.

Many comments received relate to the proposed desalination plant, but focus on issues outside of the scope of this proceeding because they do not speak specifically to the need for a long-term water supply source. Those comments generally relate to: cost of construction, operation and maintenance of the proposed desalination plant; cost impacts to the ratepayers and the economy; environmental and siting issues; water quality, health and safety issues; preferred alternatives to the Haverstraw Project; UWNY's character and service; a desire of ratepayers to have more control over their water; the SEQRA process; ownership of public utilities by foreign companies; and New Jersey's water supply and sources. Many of those comments, such as those relating to cost, environmental, water quality, health and safety issues, and alternatives, would be properly considered in the context of the DEC's review of the Project pursuant to SEQRA. Those comments will not be addressed in the following analysis. Likewise, comments received relating to other Commission proceedings, such as the surcharge

associated with the Haverstraw Project[33] or UWNY's rate proceeding,[34] will not be discussed in this order; those comments will be or have been reviewed in the context of those proceedings. Appendix C to this order lists the names of individuals that supplied comments for the Commission's consideration; some individuals supplied multiple comments on the proposed project.

The following parties submitted initial comments: UWNY, Scenic Hudson, Inc. (Scenic Hudson) and Riverkeeper, Inc., Robert E. Dillon, the Town of Ramapo, West Branch Conservation Association, Robert A. Kecskes on behalf of Rockland Water Coalition, Rockland Chapter of the Sierra Club, Rita Louie, Dorice A. Madronero, the Utility Intervention Unit of the New York State Department of State's Division of Consumer Protection (UIU), RCDOH, and Rockland County legislator Alden H. Wolfe. Reply comments were filed by UWNY, Scenic Hudson, the Town of Ramapo, the Sierra Club Lower Hudson Group, UIU, RCDOH and Alden H. Wolfe.

I. NEED REPORT

In this section, Staff's position as described in the Need Report will be summarized followed by a review of the comments received related to each topic areas. A discussion and analysis will follow the summaries.

A. Demand Projection

The Staff analysis projected need for a long-term water supply source in approximately 2020 and recommended that the Commission modify the long-term water supply milestone schedule approved by the 2006 Rate Order that requires UWNY to

[33] Case 13-W-0246, United Water New York Inc. - Surcharge.

[34] Case 13-W-0295, United Water New York Inc. - Rates, Order Establishing Rates (issued June 26, 2014) (2014 Rate Order).

have a long-term water supply source to be in-service by December 31, 2015. Many commenters concur with Staff's recommendation to eliminate the requirement for a long-term water supply source to be in place by December 2015, but some oppose the underlying demand projection, as discussed below. RCDOH submitted updated projections of both peak and annual average demand and describes its analysis as generally consistent with the Staff analysis.[35] It notes that suspension of the in-service deadline involves some risk, but that such suspension would allow Rockland County to implement conservation measures and evaluate their efficacy in controlling demand while allowing UWNY to evaluate the feasibility of conservation and small-scale supply alternatives. UWNY disagrees with Staff's recommendation and asserts that, given the need dates reported by Staff and RCDOH, "it would be imprudent to delay any aspects of the planning, permitting and construction of the Proposed Project"[36] and argues that the Need Report reconfirms the need for a new long-term major water supply source.

1. Historical Demand Patterns

a. Comments

UIU argues that Staff's demand projection accelerates at a rate far beyond historical demand patterns. It notes that Staff used demand from 1981-2013 to develop an average annual demand increase of 0.167 mgd but that the demand projection shows an expected annual demand increase of about 0.338 mgd. UIU describes the conclusion as unusual from a statistical perspective and contrary to the law of regression. UWNY states

[35] RCDOH submitted reply comments on July 30, 2014 updating its analysis and describing the average annual supply capacity would cross the upper 95% confidence limit of the long-range demand projections in approximately 2021.

[36] See Case 13-W-0303, Comments of UWNY (filed July 9, 2013), p.7.

that Staff did not use the historical period of 1981-2013 to develop an average annual demand increase. Rather, UWNY states, the line showing past average annual demand increasing at 0.167 mgd is the trend line of average annual demand calculated by UWNY and has an annual increase of 0.163 mgd per year going forward. It states that Staff's per capita demand values were based on 2011-2013 data.

Another related criticism of the Staff demand projection is that Staff's projections of demand outpace historical average demand trends. Commenters state that there is no reason to expect economic growth and population to increase so dramatically. UIU suggests that Staff's projections fail to consider factors that may "flatten" future anticipated demand such as decreasing per-capita demand; slowing population growth and long-term economic growth in Rockland County; ongoing adoption and expansion of conservation measures; likely decreases in demand due to increased water rates; potential decreases in non-revenue water; and increases in supply.

UWNY argues that the critiques stating that Staff's demand projections are too high are unfounded and that, while parties assert assumptions to the model should be altered, they have not identified an incorrect methodology in Staff's analysis. UWNY contends parties' arguments that Staff's demand projection does not follow the law of regression with its application of the historical average is at odds with their own comments in that those same commenters urge inclusion of exogenous factors to flatten anticipated demand. UWNY states that strict application of the law of regression to the mean would preclude such factors from consideration.

b. Discussion

Staff’s demand projection accelerates at a rate beyond historical demand patterns which it asserts is appropriate given

the recent period of unusual economic decline and the application of key drivers of future demand; namely, the application of Rockland County population growth and forecast growth in economic activity. The projection also reflects a per capita consumption that was well below normal levels and is restored over time to the most recent ten-year average, which is also below the norm for historical consumption trends. While Staff's assumptions are less aggressive than the positions taken by other parties and commenters, for planning purposes this conservative approach appears reasonable given the unusual post-recession period that we have experienced.

Regarding the criticisms of Staff's use of Rockland County's population projections and Moody's economic forecasts, those projections are appropriately considered. The sources of the data are sound, and we therefore find them to be reasonably reliable for planning purposes. Suggestions that other factors may flatten future anticipated demand may eventually prove to be accurate, but for conservative planning purposes they are not yet adequately supported to significant move out the estimated initial need date of 2020.

2. Residential Per Capita Demand, Population Growth and System Migration

a. Comments

Commenters argue Staff's demand projection miscalculates residential per capita use by assuming the historical trend of reduced water use will reverse. UIU suggests using the 10-year historic average as the adjustment factor and notes that demand would not cross Staff's demand trigger until approximately 2030 if it were applied. Scenic Hudson notes that Staff's use of .5% annual increase in per capita water use does not acknowledge historical trends in Rockland County's actual per capita demand, which has decreased by .35% on average for each year from 1990 to 2000, by .06% per

year from 2001 through 2007 and over the past ten years has decreased by an average of .62%. It argues for projecting data from the previous two decades over the next 20 years, and accounting for expected population increase of .6% per year through 2035. On this basis, it calculates a projected demand that would not cross the Staff need trigger until over ten years after Staff's estimate of 2020. Scenic Hudson also argues that housing preferences, which are shifting to higher-density multi-family homes, will result in a continued decrease in per capita demand.

UWNY states that comments regarding the residential per capita demand rate should be rejected. It argues that Staff's projection moves from below the mean up to the mean as the law of regression suggests. It opines that, since the 2011-2013 average demand is far below the mean, the rate of change must be steeper than the trend line of rate of change to catch up with the mean.

Commenters opine that while Staff's demand projection considers both population growth and system migration, it inappropriately uses the same rate of growth for each data set and may double-count the projected population growth. UWNY argues that alleged errors in the demand model used in estimating growth in demand are unfounded. It states that Staff made the calculations appropriately by multiplying residential, non-residential and other per capita values by the projected population of the service area to derive estimated water use.

b. Discussion

The Commission finds that Staff's approach that ramped up the residential per capita use from the lower three-year per capita figure up to the ten-year per capita consumption rate is reasonable considering the residential per capita use may have been depressed due to the recession and may increase to more

normal levels with improvement to the economy. For planning purposes, this conservative approach is appropriate. And, while the future may bring about even greater rates of decline through new advances in building codes or more aggressive rate designs, conservation programs or local municipal actions, it would be risky to plan on such developments for long-term water supply planning without a concrete plan of action to ensure that such outcomes can be delivered.

System migration data represents the number of residents with private wells that begin to take service from UWNY. Some commenters suggested that the Staff forecast may have double-counted system migrations. The Staff analysis applied the same rate to both system migrations and overall population growth, but that they were separately considered. There is no valid basis for the assertion of a double-counting of those customers.

3. Non-Residential Per Capita Demand and Economic Growth

a. Comments

Commenters argue that the adjustment factor Staff applied to non-residential per capita demand is too aggressive and state that, even if the methodology used is correct, the data should be updated to reflect the most recent information available.

Parties argue that Staff's demand projection is overly optimistic on economic growth. Mr. Appleton asserts that historical data from pre-recession years is the right base to apply and argues that Staff did not study the increased cost of living on real estate development and its growth. UWNY states that Staff reasonably assumed an increase in construction once the economy fully recovers and cites a 2013 Congressional Research Service report that notes growth at different rates in different sectors, including slow growth in housing.

b. Discussion

Staff clarified in its Supplement that it used Moody's April 2013 employment forecast for Rockland County to calculate its non-residential demand. While commenters suggest that Staff's demand projection is overly optimistic, Moody's is a reasonable source of information and can be appropriately considered in forecasting future demand. While we agree with commenters that it would be useful to reflect the most recent forecast of economic activity, we observe that, based on the October 2014 Blue Chip U.S. Economic Indicators, the economic outlook does not appear to have changed significantly since the publication of Moody's 2013 information and we do not believe updated numbers would change so as to have a meaningful impact on the forecast.

4. Non-Revenue Water

a. Comments

Commenters state that Staff's forecasting calculations use 22% as NRW despite the regulatory requirement to take steps to reduce NRW to 18% and suggest Staff should assume an annual reduction of NRW of 1% a year instead of only 0.05% per year. Staff concluded in its analysis that many commenters over-estimated potential to significantly reduce leaks. Commenters assert that this reasoning ignores that in prior years unavoidable annual water loss made up a smaller fraction of total real losses and may indicate a larger potential for leak reductions. They suggest Staff compare unavoidable annual water loss to annual real losses for a period longer than one year to determine if there are more opportunities to reduce system leakage. In addition, commenters suggest the Task Force conduct an economic analysis comparing cost of leakage reduction to the cost of alternative water supply. Comments criticize UWNY for

allegedly failing to evaluate whether leakage control could be one of a combination of options available to avoid or delay the desalination plant. Some state that the Project could lead to increased system pressure and thus leaks. Others suggest that a more robust discussion of unavoidable annual water loss is appropriate, including the concept of unavoidable annual water loss as a screening tool. They also propose $20 million that may be recovered by the sale of Ambrey Pond should be allocated to leakage reduction or other demand-side measures instead of the desalination plant.

UWNY opines that statements suggesting its NRW losses are excessive do not take into consideration that NRW losses include both apparent and real water losses. It describes apparent losses as including meter errors, data errors and unauthorized unbilled water use (theft of service) and real water loss as including physical water losses in the distribution system due to line breaks, leaking joints, and storage overflows. UWNY contends that the combination of apparent losses and authorized but unbilled use by UWNY and fire departments represent 50% of the NRW. It states that reducing apparent losses will not reduce water consumed, but would remove them from the NRW calculation.

UWNY states that fixing all leaks on the system is impossible. It explains that unavoidable annual real loss (UARL) is a function of miles of pipe, number of service connections, average length from mains to curb-stop, and average length from curb-stop to meter and system pressure. It states that the American Water Works Association (AWWA) Water Loss Control Committee developed software for calculating the UARL of the water system and other performance metrics, that it provides a ratio of real loss to UARL called "the infrastructure leakage index" and indicates the extent to which current real loss could

be avoidable or resolvable. It describes that AWWA Water Loss Guidelines suggest that systems reaching a specific threshold ratio level invest more in leak detection and line replacement programs and that UWNY has had a ratio lower than, and in some years, significantly lower than, the suggested threshold between 2007 and 2013. It states that it has an infrastructure replacement program to minimize NRW losses due to leaks and a budget for its program set in Commission rate orders, and that the cost and inconvenience of replacements would be substantial if it were to replace the distribution system as commenters suggest.

UWNY and another commenter identified an error in Staff's calculation of NRW. Staff's calculation of NRW as metered use times percent of NRW allegedly underestimates NRW volume and underestimates total demand. The parties argue that NRW should be calculated as a percent of production by dividing the NRW volume by the total volume produced.

b. Discussion

Commenters suggest that Staff should have assumed a 1% decrease in NRW a year instead of the .05% amount it used in its forecast. We reviewed Staff's NRW forecast and found that Staff applied a 22% factor to forecast sales which equates to an 18% NRW forecast when measured against the production forecast. Therefore, given this understanding, we find that the appearance of small incremental NRW improvements of .05% is reasonable.

In addition, we confirm that an error was incorporated into Staff’s calculation of the NRW included in its demand forecast. Staff did, however, identify the then unexplained

resulting discrepancy as a back cast adjustment,[37] which as it turns out, is equal in magnitude to Staff's NRW calculation error. After correcting for this error, the back cast adjustment is no longer necessary. Our overall conclusion is that Staff's original back cast error adjustment should be removed. However, as explained above, the original projection remains unchanged.

5. Price Elasticity

a. Comments

Comments received regarding price elasticity note that Staff's comparison of usage between UWNY customers in Rockland and United Water New Rochelle in Westchester may not be apt. They state that average home prices and incomes are higher in Westchester and that the relative impact of water rates may not have the same stymieing effect as in UWNY's territory.

Scenic Hudson states that UWNY, and Mr. Appleton states that Staff, inappropriately dismiss the impact of rate increases on water demand. Scenic Hudson argues that Staff's suggestion to change the pricing structure of rates could be effective in suppressing demand. It states that economists estimate price elasticity for water at approximately -.33, or 33%. Scenic Hudson hypothesizes that if prices increase by 100%, as they may if the desalination plant is constructed, demand would decrease by roughly 30% or 9 mgd.

[37] Back casting is a means to determine the validity of assumptions by "back casting" them against known and actual results. If there is a resulting and consistent deviation between the back cast projection and actual data then a "back cast adjustment" factor can be identified to apply to the going forward projection.

b. Discussion

We agree that it is reasonable to expect some price elasticity response to increases in water rates. However, Scenic Hudson's recommended estimate of a -0.33 price elasticity is likely overstated, given the particular circumstances of UWNY customers. Scenic Hudson's price elasticity appears to be based on observations from the 1980s of customers of water utilities in different parts of the country, facing different rate structures, having differing average income levels, and likely represents an overall average price elasticity estimate for a combination of discretionary and non-discretionary water use that is more heavily comprised of discretionary usage.

More specifically, to avoid the need for Ambrey Pond, UWNY instituted a summer/winter rate design in the early-1980s with summer rates that are approximately 50% higher than the non-summer period. This seasonal rate structure, in combination with a series of substantial rate increases over time, has effectively reduced summer demand and significantly lowered discretionary usage. Non-discretionary consumption has likely also been significantly curtailed through the loss of some large business operations. We expect these circumstances have, consequently, mitigated customers' further price responsiveness. Therefore, a more reasonable comparison of customer sensitivity to a price increase in UWNY's service territory is the relatively negligible response that nearby United Water New Rochelle customers exhibited in reaction to the implementation of the Delaware Interconnection Project surcharge in 2007.[38]

We find that it is appropriate to rely on Staff's projection of price elasticity for purposes of planning supply. Scenic Hudson's estimate, while it may be within the range of

[38] Case 13-W-0303, Department of Public Service Staff Report on Need (May 22, 2014), Appendix E.

possible projections for elasticity is very optimistic. Price elasticity response should be estimated with a much smaller magnitude than -0.33 as Scenic Hudson suggests; we find that Staff's projection of a 25% price increase to which such elasticity would be applied is reasonable.[39] Finally, we also note that the trend in water consumption upon which Staff made its demand projection already included the effects of price elasticity associated with comparably large price increases that occurred over the past ten years.

6. Drought Conditions, Safe Yield and Average Annual Demand

a. Comments

UWNY supports the need for the Haverstraw Project to meet demand projections and also supports the Project as the appropriate strategy to protect its customers against deprivations of water supply occurring during drought conditions, arguing that the Hudson River, as a supply source, would be drought resistant. Staff noted that UWNY must plan on using the "safe yield" supply during a drought of record in order to ensure an adequate water supply is available at all times.

Some commenters argued that UWNY's support for the Project, to insulate ratepayers from deprivations during drought conditions, is inappropriate. They argue that position is unreasonable and that curtailment of water use during drought conditions is a reasonable practice to guard against a drought worse than the drought of record. Parties suggest that a drought-proof supply would likely be costly compared to other options that would allow some inconveniences to customers and that customers would likely prefer such other options. Moreover, they assert, even if the Project were constructed,

[39] Ibid., p. 28.

customers would not be insulated from drought restrictions, since the desalination plant would comprise only 6 percent of UWNY's total safe yield upon completion of the first phase and 18 percent upon completion of the third phase.

UWNY argues that commenters' criticisms are unjustified stating that it seeks to increase the safe yield of the system and consideration of safe-yield is a planning requirement that protects public health and safety. UWNY argues that commenters misconstrue the use of 7.1 mgd of new safe yield as the need threshold. UWNY notes that the 2006 Rate Order did not specify a safe yield threshold for the long-term water supply project. Rather, UWNY explains, it determined that the addition of 7.5 mgd would provide adequate supply on an average day basis, including a peaking factor, for the long-term future. UWNY notes that conservation during periods of drought would not eliminate the need for a long-term water supply project. Increase in average daily demand during normal, not only drought, conditions requires a long-term water supply project, UWNY says.

RCDOH notes that the Standards require that ground water sources have sufficient yield to supply maximum day demand with the largest well out of service and that surface water sources must consider safe yield during a 50-year drought or worst drought of record. It states that UWNY’s annual average supply capacity is based on the safe yield of its surface water supplies taking into account the drought of record and historical annual yield of its well system during exceptionally dry summers. RCDOH suggests that, given the long period of record supporting available annual average well capacity, that it may be appropriate to calculate annual average demand without discounting the capacity to account for the largest well being out of service.

b. Discussion

Commenters questioned the need for a major long-term water supply source and the concept of being drought resistant when considering adequate supply. Drought impacts water planning in two ways. One is its impact on supply reliability, which is accounted for through the process of determining "safe yield". Safe yield represents that amount of supply that can be reasonably relied upon and the method that we utilize to determine safe yield takes into consideration the worst drought of record. The other is demand. Somewhat paradoxically, periods of drought tend to increase demand through increased cooling loads and increased use of water to counter greater evaporation both of which may be mitigated by mandatory conservation efforts to curtail demand. However, the need for a long-term water supply source, which is the subject of this proceeding, is not driven by drought considerations. The need is driven by a concern that adequate supply exist to provide ratepayers with on-going safe and reliable water service for the reasonable future planning horizon. Indeed, it is our statutory obligation to ensure the provision of safe and adequate water supply.[40]

In response to RCDOH's suggestion that it may be appropriate to calculate annual average demand without discounting the largest well as being out of service, as proscribed by the Standards, we disagree. As stated above, we follow the Standards as an appropriate guideline for long term water supply planning, which is very specific with regard to ground water supplies.

[40] PSL §89-b(1) and §89-c.

7. Conservation, the Task Force and Factors Not Considered

a. Comments

Staff concluded that additional water conservation may further mitigate overall increases in water demand and could play a significant role during droughts. However, Staff also noted that conservation methods within UWNY's control will not alone be able to resolve future average supply shortages or eliminate the need for a long-term water supply source. That said, Staff recommended that UWNY develop a plan for additional conservation methods.

Many of the comments focus on alternatives to the Project and demand-side solutions and additional conservation methods in an effort to delay or render unnecessary the creation of a long-term water supply source. Many of those comments state that the ratepayers and legislators of Rockland County are committed to meeting water demand with those methodologies and suggest that the adoption of the Rockland County Comprehensive Plan and the recent creation of the Task Force in June of this year are evidence of that commitment. Commenters opined that the Staff demand projection should consider conservation measures the Task Force plans to implement. Other commenters convey their belief that UWNY has insufficient conservation goals and can adopt additional conservation techniques or incentives that will reduce demand. Many parties request that the Commission give the Task Force time to implement conservation measures, direct UWNY to work collaboratively with the Task Force, and direct UWNY to contribute its outreach and education budget to the Task Force. Some parties argue that the Task Force is best situated to solve the water supply issues because it will have independent resources and time. Several comments reference recently proposed conservation legislation,

the Rockland County Water Conservation Act, and suggest it may assist in reducing demand.[41]

UWNY states that while it supports the idea of a task force, it is not clear that the Task Force can develop measures that will result in reductions in water demand. It states that water demand projections are driven by population growth and economic activity and that conservation is not adequate to address demand. UWNY notes that Task Force conservation measures would be voluntary and therefore inappropriate to rely on without evidence of their sustained use and effectiveness. Even if codified, UWNY argues, such measures are unlikely to result in notable reductions. UWNY criticizes the proposed Rockland County Water Conservation Act[42] as unlikely to result in meaningful reductions in use. UWNY asserts that customers already use water prudently and that some measures included in the Act do not reduce usage. It argues that water savings will depend on local mandates and voluntary compliance by the community and suggests limited opportunity for additional conservation since its customers already conserve and use water moderately.

UWNY argues that Staff properly excluded consideration of the Task Force's proposed conservation methods in its need projection and that it would be inappropriate to project reduced demand since actions have not yet been taken by the Task Force and may not materialize. RCDOH cautioned that while additional conservation initiatives could further delay need for a new major long-term water supply project, such measures should be quickly implemented so that the long-term impact of such

[41] See Case 13-W-0303, Comments of Alden H. Wolfe (filed July 9, 2013).

[42] Id.

measures may be evaluated to determine how they may be appropriately considered during water resource planning.

Commenters also criticize Staff's demand projection for failure to consider potential increases in supply and decreases in demand; use reductions as a result of the transition to low-flow fixtures; reductions in NRW; long-term trends in declining water demand; and climate change effects on supply and demand.

UIU also requests the Commission clarify the distinction between peak day and average day. UIU asks for this clarification noting UWNY's proposed 7.5 mgd of average supply that the Project could supply in response to the 2006 Rate Order directives to develop 7.1 mgd of peak supply and 1.5 mgd of average supply. It also asks for clarification regarding volume commitments the Commission required in the 2006 and 2010 Rate Orders.

b. Discussion

We welcome the commitment to conservation that both the Task Force and members of the public have professed and we look forward to receiving the results of their efforts. However, to account for the potential of the Task Force to produce a reliable reduction in demand through conservation or otherwise more information is needed to provide assurance that such activities can address, in whole or in part, the planning need identified in this order. Responsible water planning requires us to look to reliable information when projecting future need. While we encourage the efforts of the Task Force to reduce water demand through conservation, we cannot consider the impact of such conservation measures until we have the opportunity to monitor their effectiveness. We will update the forecast if incremental demand reductions from conservation programs are identified.

Commenters also criticize the Staff forecast for failing to consider a variety of factors that have the potential for lowering the demand forecast such as additions in supply or the effects of climate change. We decline to include such factors at this time for planning purposes because we do not know the potential for adding supply sources nor do we have reliable data for the impact of climate change on supply and demand, beyond what is already reflected in historic demand. It would be too speculative for us to consider or base a need forecast on these factors at this time -- we cannot reasonably rely on that data for responsible long-term water planning. However, some of the elements that commenters cite, such as demand reductions from low-flow fixtures and NRW, were considered in the Staff analysis. Staff incorporated the more recent use of, and associated demand reductions resulting from the transition to low-flow fixtures and the Company's 2007 water conservation program.[43] The Staff analysis also reflected conservative improvements in the NRW figure.

Regarding the requested clarification of previous volume commitments and distinction between peak and average demand, we refer UIU to the background information provided at the beginning of this order that explains the peak and yearly average day volume commitments that UWNY was required to achieve on an incremental basis through 2015 by both the 2006 and 2010 Rate Orders. Staff reports that the Company is on target to achieve the near term peak and average day supply additions by the year 2015 as required. As explained above, separate and apart from those volume commitments, the Commission in 2006 and 2010 also instructed UWNY to develop a long-term water supply source. Those Orders did not specify a threshold volume for a

[43] The program was launched in 2007. See Case 13-W-0303, UWNY Comments (filed August 13, 2013), p. 35.

long-term water supply source. However, the long-term water supply source was to deliver additional volume over and above the peak and average volume commitments specified in the 2006 and 2010 Orders to meet the then-projected long-term supply shortage.

8. Conclusion Regarding Demand Projection

By incorporating historical trends and applying key drivers of future demand, Staff provided its prediction of future water usage in UWNY's service territory. Taken as a whole, it appears that there may be a need for new supply in 2020-2021 and, looking further out, there may be a need for approximately 5 mgd of additional supply by 2035. This reflects the difference between forecast demand in 2035 and currently available safe yield plus an additional 3 mgd reserve to account for variability of demand.[44] Staff's forecast provides a reasonable conservative assessment of future demand for planning purposes. However, while we agree that Staff's forecast is one reasonable projection, we also acknowledge that a forecast is just that, a projection. We understand that the factors that commenters suggest Staff should have taken into consideration may indeed become reality -- UWNY may identify viable alternate smaller water supply sources, conservation measures may be implemented that reduce demand, the economy may not recover at the speed Staff factored into its analysis, or the population in UWNY's territory may not grow at the rate Staff estimated. While we can be mindful of those factors, it is ultimately our statutory obligation to ensure the provision of safe and adequate water supply to ratepayers. For that reason, we need to take a conservative planning approach while at the same time

[44] An updated graph reflecting this information is included as Appendix B of this order.

remaining flexible to the possibility that situations may change.

B. Construction Trigger, Pursuit of Permits and Quarterly Reports

1. Comments

Staff recommended that UWNY commence construction of a long-term water supply project if demand for water reaches 31.5 mgd and is sustained over a period of one year. It refers to this level as the "trigger" for resumption of the Project. Staff also recommends that UWNY continue to pursue necessary permitting for the Haverstraw Project subject to a condition that construction not commence until the trigger level is met. That way, it states, the Company would be poised to respond to demand trends and could avoid the need to recommence the permitting process and expenses associated with it. Staff also recommends that UWNY be directed to file quarterly reports providing regular updates of actual average and peak monthly demand/consumption and projections of future demand. Both Staff and RCDOH acknowledge that delaying the trigger for construction to the 31.5 mgd trigger point (projected to be roughly 2020-21) creates a risk of inadequate supply. This would occur because the cushion or reserve for demand variability would be below the 95% confidence interval.

UWNY argues Staff's proposed trigger mechanism does not address the possibility of artificially suppressed demand and does not take into consideration the significant amount of lead time necessary to begin construction. It disputes Staff's projected two year construction period, asserting that it would likely take 33 months to construct, and it argues, the Project would require approximately five years before completion of construction when factoring in the total development time to obtain permits and authorizations. UWNY concludes that, as Staff anticipates a new supply source being needed in

approximately 2020, the most prudent action would be to complete the SEQRA process, pursue all required permits and initiate construction. RCDOH states that small-scale alternatives should be considered when defining an appropriate trigger for starting construction of the desalination plant. It also cautions that, if Staff's trigger were adopted, depending on demand during construction, there could be a period of risk of inadequate capacity, although small additions to available supply may minimize risks or result in a need to set the trigger at a greater value.

Most commenters challenged Staff's proposed trigger threshold and the length of time that demand should persist before going into effect. Parties also suggest that the trigger be project-neutral, such that, if a threshold usage level were reached for a sustained period, resumption of development of a long-term supply source should not be linked to a single predetermined supply source. County Legislator Wolfe urges the Commission to reject the concept of a trigger and postpone development plans for a long-term water supply project until 2020 to allow the Task Force to develop a plan for a comprehensive water management strategy. Other commenters urge that a long-term water supply project be halted altogether instead of deferred.

Commenters state that Staff's proposed trigger threshold is exceedingly cautious stating it is set at an amount 3 mgd less than the safe yield.[45] Several parties recommend the threshold be set at 32.5 mgd, leaving 2 mgd between demand and safe yield. They assert that this is more reasonable because, using UWNY's projected rate of increase in average demand, it

[45] This comment appears to compare the trigger to available supply instead of safe yield. Staff's recommended trigger point is 2 mgd below the safe daily yield as defined by the Standards, or 33.5 mgd.

would take nearly nine years to reach safe yield under Staff's scenario. They opine that, assuming two years for construction, a facility may be operable long before it is needed by ratepayers. Several parties suggest the appropriate trigger for construction of additional supply be established at a set proximity between average demand and supply over a defined period. UWNY contends that a confidence interval-based approach, as used by RCDOH, would account for year-to-year variation in demand and is the most prudent approach to water supply planning.

Commenters also contend that demand be sustained at the threshold level for longer than Staff's recommended one-year period. They state that a more reasonable level would be two years to provide some flexibility in the trigger to account for temporary spikes in demand, such as the Tappan Zee Bridge project, or phased reductions in demand. They argue this would protect against premature and/or unnecessary construction. Parties suggest that the timeframe for calculating the trigger be on a calendar-year schedule to compare future demand on a consistent basis. UIU cites the use of a two-year time period set as the threshold in the DEC permit issued to develop water supply at Ambrey Pond, and suggests that it is the appropriate length of time for a condition to persist before a trigger for construction be implemented. UWNY opines that increasing the averaging period would exacerbate the risk of insufficient supply to meet demand and reiterates the long lead time needed to develop the Haverstraw Project.

Regarding Staff's recommendation that UWNY continue to pursue permits for the Haverstraw Project, UWNY and Scenic Hudson argue that Staff's position does not acknowledge either the permitting process or scope of permits required for the Project. Commenters generally oppose Staff's recommendation

that UWNY continue to pursue permitting based on need, cost and environmental concerns and state that pursuing permits may divert UWNY's attention from serious consideration of alternatives to the Project. RCDOH suggests that UWNY evaluate the feasibility of small supply increases or demand reductions prior to proceeding with additional expenditures for acquisition of permits. Mr. Appleton suggests the Commission first pursue reopening the Lake DeForest permits with the DEC before considering pursuit of permitting.

UWNY states that Staff does not acknowledge the complexity of the permitting process or the scope of permits needed to pursue the Haverstraw Project. It opines that it has no control over the schedule set by the overseeing entity, certain approvals must be received before other permits can be granted, the number of permits UWNY must obtain are many and it may not be possible to have conditional approvals granted by regulatory agencies concerned with potential staleness issues. It explains that before any permit can be granted, DEC must file the FEIS in the SEQRA review process and issue a Findings Statement. UWNY states that the Project would require four separate permits from DEC, approval from DOH, a Coastal Zone Consistency Review from the New York State Department of State and U.S. Army Corps of Engineers permits. It urges the Commission to meet with the other regulatory authorities to discuss the feasibility of granting conditional permits and discuss any timing issues prior to rendering its decision. Scenic Hudson notes that it is unclear which permits Staff recommends UWNY pursue.

Many parties request that the Commission halt pursuit of the Haverstraw Project and order UWNY to abandon pursuit of permits and spending of ratepayer funds. Other commenters request that the Commission direct UWNY to stop pursuing permits

for the Project in the absence of clear need, unless and until the demand trigger the Commission adopts is reached. Other commenters urge the Commission to direct UWNY to abandon pursuit of the Project until DEC and the Task Force determine the best method of managing Rockland County's water supply.

Many parties raise concerns with the cost of pursuing permits and express their discomfort with UWNY's continuing to spend money on a project that may not materialize. Some commenters opine that the Commission should order work on the Project stopped and indicate expenditures beyond the stop work order will not be considered for recovery from ratepayers. Scenic Hudson argues that UWNY should not be allowed to expend ratepayer funds to pursue permits or should not be allowed to recover permitting costs from ratepayers if the plant is not later constructed. Commenters state that should the Commission recommend UWNY pursue the permits, it should conduct an audit of expenses incurred to date and require that any future expenditures be fully supported by invoices. UWNY states that Staff's proposal would not likely result in any cost savings and notes that if it is required to pursue permits, it would be unfair and legally improper to deny UWNY's right to recover costs associated with complying with such an order. Likewise, UWNY argues that if the Commission determines the long-term water supply source is no longer needed, it would not change the fact that UWNY has, until now, been pursuing the Project in an effort to meet a Commission directive.

Commenters argue that the scope, timing and cost of the Project has changed substantially since the inception of the environmental review and that those factors should be evaluated and compared to other supply options in the SEQRA process and that the public be allowed to comment on those factors. Scenic Hudson argues that permits should not be pursued because a

permit issued today would likely not be valid by the time a facility is needed and some required permits are valid for fixed terms. Moreover, it says, under SEQRA, a supplemental environmental review is needed when new information concerning significant adverse impacts becomes available or when a change in circumstances arises that may result in a significant environmental impact. It describes several potential circumstances that may occur to spark such review and states it is unlikely that regulatory agencies would grant such permits. UWNY notes that a lapse of time alone would not necessarily require additional environmental review as commenters stated, but notes any subsequent supplemental review would increase development costs.

UIU states that Staff should engage in the SEQRA review process instead of deferring to a DEC review and participate in shaping the record on need and cost issues. UIU argues that UWNY's recommendation for the facility was premised on the County's need for 7.1 mgd of new long-term supply, with 2.5 mgd of that supply needed by 2015. In addition, it states UWNY described a need for long-term, rather than peak supply and that the new facility is drought-resistant. UIU argues these factors are no longer applicable and that Staff should recommend DEC consider these changes in its environmental review. It further suggests that Staff recommend that DEC consider the reduced urgency of need, that supply additions may reduce the need for a facility or push back the need date, and that a lower planning target is appropriate.

Comments largely support the recommendation to require UWNY to submit quarterly reports. RCDOH notes that the data included in the reports would allow parties to be aware of demand and allow assessment of the efficacy of newly implemented conservation measures.

2. Discussion

We agree with Staff and members of the public that UWNY should submit quarterly reports. As the parties noted, this will keep the Commission and parties apprised of actual water demand and allow for the opportunity to evaluate conservation measures to determine how they should be considered in water supply planning. Therefore, we direct UWNY to submit reports of the actual average day production and average day demand by month and the monthly rainfall levels. The reports must also note any additions to average day supply and safe daily yield. The safe daily yield shall be calculated as described in the Standards.[46] We will require UWNY to provide its first report in January 2015. In addition, to support the Task Force's efforts, we also direct UWNY to provide a copy of the quarterly reports it files with us to the Chair of the Task Force to assist it in its conservation and planning efforts and allow it to independently evaluate the effectiveness of the conservation measures it adopts.

We will not, at this time, adopt Staff's recommendations to set a trigger to commence construction of a long-term water supply project nor will we instruct UWNY to continue to pursue necessary permits for the Haverstraw Project. As we previously stated, based on Staff's projections, we believe there is a short period of time before an additional supply source is needed. We have heard from many members of the

[46] Surface sources must meet the maximum projected water demand of the service area as shown by calculations based on a one in fifty year drought, or the extreme drought of record, including consideration of multiple year droughts, and provision of a reasonable surplus for anticipated growth, compensation for losses, such as silting, evaporation and seepage. Groundwater sources must equal or exceed the design maximum day demand with the largest producing well out of service.

public and their elected officials that they are willing and able to pursue conservation measures that may lower demand and they have also urged us to consider alternative sources of supply. We will discuss additional supply sources later in this order. Regarding the comments for additional conservation measures, it is urgent for these options to be explored, however, we cannot at this time depend on the results of conservation efforts not yet identified, evaluated or undertaken. We direct UWNY to study what additional conservation opportunities exist, in collaboration with the Task Force, with the goal of identifying measures that may reduce demand by 2 mgd. UWNY shall report back to us within six months of the issuance of this order identifying the feasibility, cost and estimated demand reductions associated with each identified measure. We also are interested in hearing the plans of the Task Force for adopting feasible conservation options and demand reductions associated with those measures. To that end, we request that the Task Force submit its findings to us in six months. We will also instruct UWNY to report to us on the feasibility of developing additional water supply sources, which we will discuss in detail below.

While we are not adopting a trigger for the development or construction of a long-term water supply project at this time, we will be carefully monitoring the quarterly reports that UWNY has been directed to file. If we determine that the gap between annual actual demand and the safe daily yield is at 2 mgd or less, we need to be poised to react and instruct UWNY to pursue any viable water supply solutions. We agree with Staff that 2 mgd is an uncomfortably narrow margin that will increase vulnerability to short-term swings in demand variation. We adopt this course of action in order to allow

trends to materialize, and to allow time to explore and implement conservation alternatives.

In light of this, while we will not instruct UWNY to further pursue permitting activities for the Haverstraw Project at this time, we will not instruct it to abandon the process either. It is reasonable to preserve the option of the Haverstraw Project in the event that conservation efforts and/or alternative supply sources are not sufficient to meet demand. Many commenters expressed concern that UWNY would continue to spend money on a project that may not be constructed. We understand that concern. To be clear, we are instructing UWNY not to continue pursuing permits at this time, and expenditures for any permit-related activity going forward will be presumed to be imprudent unless and until we direct activity to resume.

Finally, UIU requested that Staff become active in the SEQRA process and submit comments updating the DEC regarding the need for and timing of a long-term water supply project. At this time, since we will not direct UWNY to continue to pursue the permitting process, we will not recommend such action.

C. Alternate Sources of Supply

1. Comments

Staff recommended that UWNY update its analysis of the potential for expanding the use of additional groundwater resources. Several parties agree, others encourage the Commission to give the Task Force a chance to develop a long-term water supply plan, and other commenters convey skepticism that UWNY will seriously consider alternatives to the Haverstraw Project.

RCDOH states that it is crucial for Rockland County to maintain the option for a viable new major water supply project to ensure adequate supply. It discusses risks of long-term water planning and taking the risks and benefits into

consideration when exploring water resource alternatives. RCDOH suggests that small supply increases or demand reductions may be effective at reducing need for a single large water supply project and suggests that, in addition to analyzing the feasibility of additional ground water resources, UWNY analyze the feasibility of transferring responsibility to supply potable water to the Montvale community in New Jersey to United Water New Jersey.

UWNY concurs with RCDOH's statements on risk and notes that pursuing smaller projects poses some financial risk to ratepayers in that they may pay twice to develop an adequate source of supply in interim measures if other solutions do not produce sufficient supply. UWNY states that it will confer with Staff and update and study groundwater resources as necessary but believes that available supply resources that would satisfy short- and medium-term demand and meet the state sanitary code requirements are extremely limited. According to UWNY, groundwater resources that would satisfy long-term demand have not been discovered and likely do not exist and it is not yet known whether the aquifer has the capacity to support additional wells. UWNY describes the challenges to siting new wells and concludes that suitable sites would likely require purchase of privately-owned residential property. UWNY identifies potential obstacles to development, such as issues of water quality, well interference, timing and cost, and local opposition.

UWNY disagrees with Staff's conclusion that UWNY has sufficient time to explore other alternatives to meet future demand. It states that it has already conducted an extensive evaluation of alternatives and combinations of alternatives during preparation of the DEIS for the Project and concluded that the proposed Project was the best alternative; it asserts there is little chance that a long-term water supply source will

not be needed. Commenters state that while none of the alternatives to the desalination plant alone could produce 7.5 mgd, commenters are advocating for a combination of projects, not a single solution.

2. Discussion

We find that there is some period of time available before additional supply is required in UWNY's territory and agree that UWNY should evaluate the potential for further development of groundwater resources. Although UWNY reports that additional development opportunities may be slim, we nevertheless concur with Staff that a feasibility analysis should be undertaken by UWNY.

We instruct UWNY to conduct a new and independent study and report to us 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 collectively yield an additional 2-3 mgd of water supply. While Staff recommended an evaluation of the development of groundwater resources, we will require UWNY to broaden its review of potential supply alternatives.[47] For example, UWNY should investigate development of new wells, purchase of additional wells from private owners, redevelopment and/or rehabilitation of existing wells not presently in use, the appropriate supplier of water to the Montvale community and wastewater reuse. While UWNY is not limited to these options, we expect that it will review them in the context of its study and provide a thorough analysis of each potential new source. UWNY is directed to file its study results on the feasibility

[47] Staff has already reached out to the author of the 2010 U.S. Geological Survey (USGS) Report and to UWNY and provided UWNY a list of potentially viable wells to investigate.

and expected cost to develop and operate these supply alternatives within six months of the issuance of this order.

D. Conservation Rate Design

1. Comments

Staff recommended that UWNY develop and file by December 1, 2014 additional rate design proposals that could potentially be implemented to further influence and constrain demand and promote greater conservation efforts. Comments received generally support the Staff recommendation. Parties suggest that Staff propose detailed recommendations based on its experience and expertise; the analysis of rate design proposals be performed by an independent consultant and be a component of the Task Force plan of action; and the Task Force develop the proposals with UWNY. UIU suggests that the following measures be considered: steeper inclining block rate structure, increases in the summer/winter differential rate, temporary rate increases during drought conditions, separate rates and metering for use of water for irrigation, and time-of-use water rates. Parties also urge that, the implementation of any new rate design structure should be accompanied by robust consumer education.

UWNY states that additional conservation and rate structure initiatives must be made in conjunction with municipalities, ratepayers and the Commission. UWNY opines that to develop such a rate structure, serious study would be needed, that the structure must be revenue neutral, and that such study would be funded by ratepayer funds.

2. Discussion

In the June 2014 Rate Order, the Commission directed UWNY to conduct and report the results of a study of revenue allocation and rate design strategies that might further promote conservation in its territory.[48] We directed that such study

[48] Case 13-W-0295, supra, Order Establishing Rates, p. 64.

forecast the likely response, in terms of usage, of various rate design strategies, including at a minimum, increases in the seasonal rate differential and in the increments of inclining block rates. We also recognized that the Task Force submitted a "conservation alternative study" in Case 13-W-0246 (the Surcharge proceeding) that offered additional proposals that we find worthy of consideration. We directed UWNY to consider the direct and indirect costs of the various recommended measures, including the extent to which such measures may burden the economy of the service territory. UWNY was directed to file its study within six months of the issuance of our Order, before December 26, 2014. We encourage UWNY to work both with Staff and the Task Force as it evaluates potential rate structure initiatives and prepares its study and to consider the proposals filed in this case.

We concur with parties that urge a strong consumer education element in supporting any change to the rate structure. However, at this time it is premature to discuss appropriate consumer education measures as such measures should be tailored to the particular recommended changes. We will review potential changes to the rate structure and appropriate consumer outreach measures at a later time.

E. Lake DeForest and Equitable Apportionment

1. Comments

Staff concluded that, in its estimation, the current standard used for allocation of water supply of the Lake DeForest Reservoir is proper. Pursuant to the permit (WSA 2189), issued by DEC's predecessor agency, which governed the allocation, 10 mgd is allocated for use by UWNY to serve Rockland County, 2 mgd is allocated for release for use of the Village of Nyack, and 7.5 mgd for subsequent downstream reservoirs of United Water New Jersey for drinking water and

other purposes to maintain their correlative enjoyment of the River, or passing flow. Staff described the legal process pursuant to the DEC's regulations for DEC to unilaterally amend or revoke an existing permit and it concluded that DEC would have a substantial burden if it were to attempt to unilaterally modify, amend or revoke the existing permit. Staff also opined that there is a risk that litigation could result in a re-allocation of water less favorable to Rockland County than the current allocation.

Mr. Kecskes, on behalf of the Rockland Water Coalition, argues that, based on the DEC regulations describing the procedures for unilaterally amending or revoking an existing permit, there are grounds for the permit to be revoked, amended or modified. Such rationales include initial alleged misrepresentation by Spring Valley Water Works and Supply Company, UWNY's predecessor, of reasons for building Lake DeForest Reservoir; the alleged misrepresentation or failure to disclose information in the draft permit relevant to increasing the Lake DeForest Reservoir passing flow in 1982; the alleged inappropriate application of equitable apportionment concept by the New York Water Power and Control Commission, predecessor of the DEC, when it was considering the Lake DeForest Reservoir permit; reductions in passing flows in the Upper Delaware River; absence of equitable apportionment of New Jersey rivers flowing into New York; and the availability of an interstate safe yield model by the New Jersey Department of Environmental Protection that will review how much additional safe yield can be obtained through coordination among purveyors in the watershed. He argues that DEC should allow Rockland County to reopen the permits for both the Lake DeForest and Lake Tappan Reservoirs based on these arguments and that a collaborative effort be undertaken to optimize water supply for Rockland County. Some

commenters request that the Commission work with the DEC to expedite review of fair management of Lake Deforest, Lake Tappan and other freshwater resources.

Mr. Dillon asserts that the Need Report does not adequately address equitable apportionment. He states that Rockland County's riparian rights accrue from increase in safe yield from the Hackensack River resulting from the construction of Lake Tappan. He opines that Rockland would be entitled to 3.35 mgd from Lake Tappan if the current Lake DeForest passing flow were applied to allocate Rockland County an equitable share of Lake Tappan. Mr. Dillon argues that changing the Lake DeForest passing flow rates and allowing Rockland County to take water from Lake Tappan would achieve a more complete use of existing water resources and riparian rights, resulting in an increase of safe yield.

The New Jersey Department of Environmental Protection, Water Resource Management, Division of Water Supply & Geoscience (NJDEP) submitted comments in response to Mr. Kecskes' arguments. It asserts that his comments contain mischaracterizations of the doctrine of equitable apportionment and inaccurate statements. NJDEP argues that there is a fundamental flaw with Mr. Kecskes' submission. NJDEP states that the doctrine of equitable apportionment recognizes that not all rivers, watershed, and users are the same, and requires consideration of factors relevant to fairly divide the resource between states in each particular case. It argues that for that reason, arguments that about apportionments made in other water districts, such as the Delaware River basin or Oradell Reservoir in New Jersey, are irrelevant because they do not share the characteristics of the Lake DeForest reservoir system and its users. NJDEP also opines that statements made by Mr. Kecskes that the Lake DeForest Reservoir was transformed into a regional

component of an interstate water supply in the 1980s are incorrect. It states that Lake DeForest was conceived as a component of an interstate water supply in the 1950s and that its supply was understood to benefit both the citizens of New York and New Jersey. Finally, NJDEP states that if the DEC decides to revisit the Lake DeForest permit, it expects notification to have the opportunity to represent its citizens and protect their interests.

2. Discussion

In this proceeding, we are examining the ongoing need for a new long-term water supply source. Commenters have offered arguments that the need for a long-term water supply source could be offset or obviated by reopening the DEC permit that governs the allocation of water from the Lake DeForest Reservoir and offered arguments they claim DEC could assert to amend the permit. However, based on the analysis provided by Staff that describes the legal principles surrounding the apportionment of interstate water and the uncertainty of a result stemming from a review of the permit by DEC and the comments supplied by the NJDEP that describe the fact-specific analysis that would need to be conducted to determine equitable apportionment, we are not convinced that reopening the permit would result in a reliable net benefit for UWNY ratepayers. There is a high degree of uncertainty regarding the outcome of any reexamination of the terms of the permit and, given this uncertainty, we cannot reasonably depend on any additional water supply resulting from a review of the permit by DEC.

F. General Comments

1. Comments

Many parties submitted comments generally critiquing Staff's Need Report and suggesting the Commission consider a variety of issues. Commenters complain that the Need Report

mischaracterizes project costs and does not represent the known costs to date; fails to adequately address rate impacts associated with cost recovery for the Project; does not adequately address the impact of revised seasonal rates, clearly labeled bills and conservation rates for industrial and commercial customers; and has not clearly elaborated Staff concerns regarding the silt build-up in Lake DeForest.

Commenters suggest that the Commission take a more holistic view of UWNY issues and cite the several case dockets related to Rockland water issues. Commenters suggest that a "silo" mentality among state agencies is not productive to serve the best interests of ratepayers. Other parties suggest the Commission work with the Task Force and that both UWNY and the Commission repair relations with the public and for the Commission to restore faith in its processes. Parties suggest that a more comprehensive approach to water conservation and energy efficiency is necessary and note that the same degree of attention is not given to conservation and efficiency with water as it is for electric or gas.

Several commenters criticize Staff's Need Report as suggesting a need for a new water supply source is analogous to need for the Haverstraw Project. Parties assert that Staff discusses need projections and the Project together but fails to justify why a desalination plant should be the selected technology. They suggest that need for additional water supply and the solution to such need are entirely separate and that by considering only one large project, Staff undercuts solutions that combine demand and supply activities.

UWNY argues that commenters' assessment that Staff showed some preference for the Project are unfounded and states that the basis of this proceeding was to review and assess the projected demand and requirement for UWNY to secure a new long-

term water supply source. It notes that DEC has the responsibility as lead agency under SEQRA and in issuing the Water Withdrawal Permit to determine what alternative, if any, is preferred. It notes that the Commission does not have authority to approve the selected design of the Project or alternatives and that the Need Report finds that a long-term project should be continued, but without specifying a design.

2. Discussion

We appreciate the time and energy members of the public have taken throughout this proceeding to communicate their concerns and suggestions to us. We have seen a great amount of engagement and participation that we find very encouraging, especially given the unique water supply challenges that exists in the UWNY service area. We are hopeful that the participants in this proceeding will be just as energetic in pursuing, supporting and implementing alternative supply solutions, new conservation rate designs, and other conservation solutions with the Task Force that may have a significant impact on local water demand and supply.

Some commenters raised concerns regarding the Staff Need Report asserting that certain topic areas were not sufficiently examined such as cost and rate issues. While we appreciate the concerns raised, the purpose of this proceeding is to examine the ongoing need for a long-term water supply source. While those issues certainly deserve examination, they were referred to in the Staff Report[49] and are being reviewed or have been reviewed in the context of the Surcharge proceeding, the 2014 Rate Order, and/or the DEC SEQRA review process. While some commenters suggest that this separation of issues by

[49] See, Case 13-W-0303, Department of Public Service Staff Report on Need (May 22, 2014), p. 28 for its estimate of bill impacts associated with Phase 1.

subject matter is not productive, we disagree. In this instance, examining the components separately allow us to focus and evaluate the merits of the issues raised in each area. At the same time, we are cognizant of the interrelated issues and are mindful of that in our consideration of the issues in the respective proceedings.

Lastly, we address comments that we adopt a more comprehensive approach to water conservation and energy efficiency when reviewing water-related matters. Potable water is an essential commodity. Conservation and efficiency measures that can be implemented not only may impact the need to develop capital-intensive and potentially large energy use water and energy supply projects, but also conserves valuable resources. While we have not undertaken a generic review of opportunities for conservation and efficiency of our regulated water companies, we have been reviewing them on a case-by-case basis during individual rate proceedings. At this time, we believe it is preferable to evaluate opportunities for water and energy conservation and efficiency on an individual basis since each regulated entity and their associated territories have different supply sources, needs and existing conservation programs.

II. PRUDENCE

On May 22, 2014, a notice was issued inviting parties to submit arguments for a prudence investigation into the Company's pursuit of the Haverstraw Project. After two extensions, the deadlines for comments and reply comments were set at July 9, and July 30, 2014, respectively. In addition to many public comments calling for a prudence investigation and forensic audit of UWNY, motions for a prudence investigation

were received from six[50] parties: UIU, the Town of Ramapo (Ramapo), Rockland County (County), the Honorable Harriet Cornell, Chairwoman of the Rockland County Legislature's Environmental Committee (Chairwoman Cornell), Peggy Kurtz (Ms. Kurtz), and Robert Dillon (Mr. Dillon). Their arguments are summarized below.

A. Comments

1. UIU

UIU initially argues that UWNY's choice of the Haverstraw Project as a long-term water supply source was imprudent because it was made one month after the 2006 Rate Order was issued.[51] UIU argues that UWNY should have performed a more in-depth analysis of the alternatives before making a decision. In support of this claim, UIU states that the subsequent significant increase in construction estimates from 2007, when the choice was made, to 2012, when the Draft Environmental Impact Statement (DEIS) was accepted by the DEC, demonstrates the imprudence of the choice. UIU also argues that choosing a single, expensive, energy-intensive project "blinded [UWNY] to cost-effective alternatives that collectively constituted a viable resolution ...."[52]

UIU argues that UWNY's DEIS lacks comprehensive information on the cost of the Haverstraw Project and its alternatives and that UWNY has withheld cost information from other parties and ignored the analysis performed by opponents, and, by virtue of those factors, UWNY caused a "profound loss of

[50] Calls for a prudence investigation were received from other commenters, but without substantive arguments. These filings are not considered here.

[51] UIU Motion for a Prudence Investigation and, Alternatively, for a Forensic Audit of Expenditures (filed July 9, 2014) (UIU Motion), p. 7.

[52] Id.

confidence on the part of the public, which is another indication of imprudence."[53]

UIU also argues that the proposed Project could not be operated economically if less than its full 7.5 mgd were not needed, and that the increased rates caused by the Project would so depress demand that it could not be operated efficiently.[54] UIU also argues that the Haverstraw Project is inconsistent with New York's energy policies.[55]

UIU's second main argument is that "[t]he Company's dogged insistence to continue pursuing the desalination option evidences UWNY's failure to adequately respond to new circumstances, and thus supports an inference of imprudence."[56] UIU cites a study from the USGS that found that the County's aquifer recharged at a greater rate than previously believed. [57] UIU cites Long Island Lighting Co. v. Public Service Com'n of State of N.Y,[58] for the proposition that the Company should have reconsidered its choice when the permitting process fell behind schedule.[59]

Relatedly, UIU argues that UWNY was imprudent to continue pursuing the Haverstraw Project as the pre-construction costs began to exceed its projections. UIU specifically argues that the Company's increased public outreach expenses were imprudent because they resulted in increased opposition to the project.

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[53] Ibid., p. 8.
[54] Ibid., pp. 8-9.
[55] Ibid., p. 10.
[56] Ibid., p. 13.
[57] Paul M. Heisig, Water Resources of Rockland County, New York, 2005-07, with Emphasis on the Newark Basin Bedrock Aquifer, U.S. Geological Survey Scientific Investigations Report 2010-5345 (2010) (USGS Study).
[58] 134 A.D.2d 135 (3d Dep't 1987) (LILCO).
[59] UIU Motion, p. 12.

UIU next argues that the Company was imprudent because it failed to maintain proper records of its expenses. It argues that the Company did not provide adequate supporting documentation of Project costs and this failure led to a lack of transparency, which has the effect of masking potential imprudence. UIU asserts that the Company failed to contain costs or restrict increases to the rate of general inflation and provides two examples -- increases in UWNY's law firm's hourly rate and UWNY's alleged failure to monitor other vendors' hourly rates. It also cites the initial inclusion of lobbying costs in the Surcharge Case filing. UIU quotes the Commission's criticism of the Company in UWNY's recent rate proceeding in support of these arguments.[60]

UIU further argues that continuing with the Haverstraw Project, as was recommended in the Need Report, would be imprudent, unless the Company is required to pay for all costs going forward, or the liability for ratepayers for further payments is capped.

UIU closes by arguing that, absent a prudence investigation, the Commission should require a forensic audit of Project expenses.[61]

2. Town of Ramapo

Ramapo presents multiple arguments in favor of a prudence investigation. The first is that UWNY was imprudent in selecting reverse osmosis technology for the new long-term water supply source in the "fifth wettest county in New York."[62] Focusing on the choice of the Haverstraw Project over other alternatives, Ramapo argues that the technology would be unreliable in case of an accident contaminating the Hudson River

[60] Case 13-W-0295, supra, Order Establishing Rates.
[61] UIU Motion, pp. 21-22.
[62] Motion for a Prudence Investigation on Behalf of the Town of Ramapo (Town Motion) (filed July 10, 2014), p. 2.

and that UWNY failed to consider using multiple smaller projects to meet the supply requirements of the 2006 Rate Order.[63] Ramapo also argues that the projected operating costs of the Project would make it uneconomical to run. Ramapo then criticizes the DEIS for its analysis of alternatives and lack of transparency on capital and operation and maintenance costs.[64] Ramapo claims that the Company was imprudent by not pursuing research and development grants from the federal government and for failing to update the DEIS to reflect drops in demand after 2010 and claiming that the project was still needed immediately.[65] It claims that the Company was imprudent in its choice of contractor, and, based on information in the Surcharge Case, did not adequately control costs from its various vendors.[66]

Ramapo's final two arguments are that the Company was imprudent to continue pursuing the Haverstraw Project after the release of the USGS Study and that it would be imprudent to continue pursuing permits for the Project, as recommended in the Staff Report, because it will never be needed.[67]

3. Rockland County

The County argues that, in the Surcharge Case, the Company failed to shift the burden of proof by demonstrating that its conduct related to the Haverstraw Project was

[63] Ibid., pp. 7-8.
[64] Ibid., pp. 10-19.
[65] Ibid., pp. 14 and 19.
[66] Ibid., pp. 19-21.
[67] Ibid., pp. 22-23.

reasonable. It alleges that the evidence filed supports the County's position.[68]

4. Chairwoman Cornell

Chairwoman Cornell argues that UWNY was imprudent by selecting a single long-term water supply project rather than a combination of smaller options.[69] She also argues that it was imprudent for the Company "to continue expending money on this project, which has not yet been approved under the laws and regulations of the State of New York ... in the face of decreasing demand for water—demand which will further decrease as rates go up and a surcharge is added to rate-payers' burden—and which could result in a stranded investment."[70] The motion also requests the Commission perform a forensic audit of the Haverstraw Project.

5. Ms. Kurtz

Ms. Kurtz argues that UWNY was imprudent in choosing the Haverstraw project because, she alleges, the Company was solely concerned with pursuing desalinization for corporate reasons, the Company knew its wells were recharging at an adequate rate, the Company knew reservoir levels were low because of its inaction towards a broken valve. Ms. Kurtz also alleges that UWNY was aware of the USGS Study before other parties, and that UWNY refused to cooperate with researchers studying the potential of conservation. Ms. Kurtz also argues no cost benefit study was done and that the DEIS's consideration

[68] The County also submitted testimony of the Amawalk Consulting Group (Amawalk), which called for UWNY to provide documentation that its expenses were prudent, without first attempting to make a prima facie case. Since development expenses were the subject of Case 13-W-0246, and Amawalk fails to meet its burden of proof, its argument will not be considered.

[69] Motion of Harriet Cornell (filed July 23, 2014) (Cornell Motion), p. 2.

[70] Id.

of alternatives is inadequate. Ms. Kurtz also raises arguments regarding the interest rate used in calculating carrying charges for the proposed surcharge, which is not the subject of this proceeding.

6. Mr. Dillon

Mr. Dillon argues that additional water supply exists in Rockland County if the County's rights to water from the Hackensack River and the Lake Tappan Reservoir were properly calculated and critiques Staff's analysis of the issue. Mr. Dillon also alleges that UWNY acted improperly by misleading regulators regarding Rockland County's water resources by: not reporting excess releases of water from Lake DeForest, not disclosing the publication of the USGS Study and not notifying regulators of the potential for additional water from the equitable apportionment of the Hackensack River and the Lake Tappan Reservoir. Mr. Dillon argues that, because of these wrong-doings, UWNY comes before the Commission with unclean hands.

B. Discussion

A utility's decision is considered prudent if the utility "acted reasonably based on the information that it had and the circumstances that existed at the time."[71] A utility's actions are presumptively prudent and the party alleging imprudence has the initial burden of providing a rational basis to infer that the utility may have acted imprudently before the burden shifts to the utility to demonstrate that its decision was prudent when made.[72] In order to make a prima facie case of imprudence, a party must do more than show that a different option would have been preferable because

[71] Matter of National Fuel Gas Distrib. Corp. v. Public Serv. Commn. of the State of N.Y., 16 N.Y.3d 360, 368-369 (N.Y. 2011) (National Fuel).

[72] Ibid., at 369.

> [a] decision may be viewed as prudent even though a different course of action would ultimately have been more advantageous to the utility or its ratepayers. In this regard, hindsight is irrelevant to a prudence analysis because the utility must make a determination that addresses its business prospectively. Thus, if more than one course of action was reasonable at the time of decision making, the utility may choose among them.[73]

If it is found that a utility decision was imprudent, the Commission may deny recovery of related expenses because "[i]t would be neither just nor reasonable for a utility's customers to bear the cost of inefficient management or poor planning."[74]

Several arguments made in support of the initiation of a prudence investigation fail to acknowledge that UWNY was complying with Commission mandates. For example, UIU asserts that the Company was imprudent in making its selection of a long-term water supply project in one month.[75] The various parties argue that UWNY was imprudent for continuing to pursue the Haverstraw Project after the release of the USGS Study,[76] as opposition grew,[77] as demand shrank,[78] as costs grew,[79] or because the Project is not yet approved by the State.[80]

These arguments ignore the fact that UWNY was ordered by the Commission to identify and pursue a long-term water supply source and faced financial penalties for failing to do

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[73] Id.
[74] LILCO, at 143.
[75] UIU Motion, p. 7.
[76] UIU Motion, p. 11; Cornell Motion, p. 1.
[77] Cornell Motion, p. 2.
[78] Town Motion, p. 19; UIU Motion, p. 6; Cornell Motion, p, 2.
[79] UIU Motion, pp. 13-15. The UIU's arguments regarding LILCO's imprudence in constructing the Shoreham Nuclear Plant ignores the fact that LILCO was not under Commission mandate to pursue the project and could stop any time it chose to do so.
[80] Cornell Motion, p. 2.

so[81] until the penalties were removed in the 2010 Rate Order.[82] Specifically, pursuant to a joint proposal that UIU was a signatory to, UWNY was ordered to submit its choice of project within 30 days.[83] Moreover, the Company was directed to develop a major long-term supply with construction to commence May 2013.

Numerous arguments touch on the DEIS's content and DEC's SEQRA review process. Some motions criticize UWNY's DEIS and assert it be considered grounds for finding imprudence.[84] Ms. Kurtz and Mr. Dillon argue that the DEIS's consideration of alternatives is insufficient, or lacked specific alternatives. In a similar vein, UIU argues that the Company's "decision to withhold information about project alternatives caused a profound loss of confidence on the part of the public, which is another indication of imprudence.[85]" In addition, UIU and Chairwoman Cornell both argue that it was imprudent for UWNY to choose a single project, as opposed to multiple smaller projects.[86]

Less directly related to the DEIS, UIU and Chairwoman Cornell both argue that UWNY was imprudent because the proposed desalinization plant would be too expensive to operate efficiently,[87] while Ms. Kurtz alleges that no cost benefit analysis was performed by UWNY. In addition, Ramapo and UIU raise arguments related to the Project's consumption of electricity and the state's energy policies but do not demonstrate that the Company is bound by the policy or how the

[81] 2006 Rate Order, Joint Proposal, Exhibit 11, p. 2.
[82] 2010 Rate Order, p. 15.
[83] See 2006 Rate Order, Joint Proposal, p. 11.
[84] Cornell Motion, p. 2; UIU Motion, p. 8; Town Motion, pp. 6-8, 11-12, 14-19.
[85] UIU Motion, p. 8.
[86] UIU Motion, p. 7; Cornell Motion, p. 2.
[87] UIU Motion, pp. 8-10; Cornell Motion, p. 2.

alleged violations of the policies result in imprudent expenses.[88]

Under SEQRA, the DEC, as lead agency, has the sole authority to evaluate the DEIS and approve the project.[89] That evaluation includes a cost benefit analysis that incorporates operating costs, the project's impact on the state's energy policy, and consideration of alternatives. Given its statutory responsibility and depth of review, the Commission will not second guess the DEC's approval of the DEIS.

Furthermore, UWNY's choice of a single project over multiple projects cannot be considered imprudent because, "if more than one course of action was reasonable at the time of decision making, the utility may choose among them,[90]" and DEC's approval of the DEIS at a minimum casts serious doubt on arguments that the single project was unreasonable, and that the consideration of the alternatives was inadequate.

All parties argue that the Company's failure to adequately document expenses related to the Haverstraw Project justify a prudence investigation.[91] Ramapo argues that the Company's failure to pursue federal research and development grants for the Haverstraw Project was imprudent.[92] Ramapo also argues that the Company's choice of contractor was imprudent, given the existence of more experienced alternatives. UIU also argues that the Company's outreach and education spending was wasteful and imprudent because it resulted in broader opposition to the Project. Finally, parties have requested a forensic audit of the Company's expenses.[93]

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[88] UIU Motion, p. 10; Town Motion, p 13.
[89] Environmental Conservation Law §8-0111(6).
[90] National Fuel, at 369.
[91] County Motion, p. 2; Cornell Motion p. 3; UIU Motion, pp.14-19; Town Motion, p. 9.
[92] Town Motion, p. 14.
[93] Cornell Motion, p. 3; UIU Motion, pp. 21-22.

Given the existence of the Surcharge Case, which is dedicated to reviewing the reasonableness of the Company's expenses and determining the appropriate level of recovery, instituting a prudence investigation into the Company's alleged lack of documentation would be needlessly duplicative.

On the issue of potential grants, we note Ramapo does not identify what grants the Company should have pursued, nor did it demonstrate that the Company was likely to receive them. Thus, Ramapo failed to present a prima facie case for imprudence. Similarly, Ramapo's criticism of UWNY's choice of contractors[94] fails to demonstrate imprudence because a utility is free to choose from reasonable alternatives in making decisions[95] and Ramapo failed to demonstrate that the Company's choice was unreasonable.

Addressing UIU's outreach and education claim, assuming arguendo that the outreach spending was ineffective, the claim fails to demonstrate imprudence because UIU does not argue that, when UWNY decided to spend this money, it knew or should have known it would be ineffective. Finally, the reasonableness of any particular expenses will be evaluated in the context of the surcharge proceeding or a subsequent rate recovery proceeding.

Ms. Kurtz and Mr. Dillon allege UWNY acted improperly by concealing information (the USGS report, excess releases from Lake DeForest, conservation information) from the Commission and other parties. Ms. Kurtz and Mr. Dillon also allege that UWNY has acted on the orders of its corporate parents, and contrary to the interests of Rockland County, in choosing a desalinization project. The conclusory claims that UWNY acted

[94] Ibid., pp. 20-21.
[95] See National Fuel, at 369.

improperly, or out of some ulterior motive, are inadequate to justify a prudence investigation.

While the demand anticipated in 2006 has not materialized, and we have altered our requirements for a new water supply source as a result, such hindsight has no bearing on the prudence of the Company's actions. UWNY was pursing the additional long-term supply in furtherance of Commission Orders and, based on our review in this proceeding, long-term need still appears to exist. Although new circumstances (recession induced reduction in need and the formation of the Task Force) are leading us to further explore alternatives, they do not justify a prudence proceeding. We also find that the parties have failed to meet their burden of presenting a prima facie case of imprudence, and that UWNY's decisions to pursue a long-term water supply source were reasonable and therefore prudent, at the times they were made.

CONCLUSION

For planning purposes, we find Staff's forecast to be a reasonable assessment of future demand at this time subject to further updating as additional study is conducted. Based on that forecast, the need for new supply is delayed, but there is still an ongoing need for additional long-term water supply. Additional supply may be needed by approximately 2020, and by 2035, approximately 5 mgd may be needed, absent a reduction in water usage in UWNY's territory. That said, our overarching concern is that a margin of reserve is maintained between demand and safe yield supply. All efforts should be directed to keeping demand below that level or otherwise securing additional supplies so as to raise that threshold.

Thus, there is a small window of opportunity to further explore whether significant conservation measures can be

identified and executed to produce reductions that can be relied upon, and whether smaller increments of supply can be identified to complement conservation measures and ensure adequate supply. We direct UWNY to provide reports on conservation and supply alternatives within six months of the issuance of this order and will require UWNY to submit quarterly reports providing data on actual usage to monitor the gap between supply and demand. We also call upon the Rockland County Task Force on Water Resource Management to report on its plans for adopting feasible conservation options and the demand reductions associated with these measures.

We find that the parties have failed to meet their burden of presenting a prima facie case of imprudence, and that UWNY's decisions to pursue a long-term water supply source were reasonable and therefore prudent, at the times they were made.

The Commission orders:

1. United Water New York, Inc. (UWNY) shall not pursue any further permitting activity for the Haverstraw Project at this time, but shall not abandon it.

2. UWNY shall submit quarterly reports to the Secretary commencing in January 2015 describing the actual average day production and average day demand by month and the monthly rainfall levels. The reports must note any additions to average day supply and safe daily yield as described in the body of this order. UWNY shall provide a copy of the quarterly reports it files to the Chair of the Rockland County Joint Task Force on Water Resource Management (Task Force).

3. UWNY shall 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 (mgd) and shall file a report with the Secretary within six months of the issuance of this order identifying the feasibility, cost and estimated demand reductions associated with each identified measure.

4. UWNY shall conduct a study and file a report with the Secretary within six months of the issuance of this order describing 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.

5. The Secretary in her sole discretion may extend the deadlines set forth in this order. Any request for an extension must be in writing, must include a justification for the extension, and must be filed at least one day prior to the affected deadline.

6. This proceeding is continued.

By the Commission,

Kathleen H. Burgess

Digitally Signed by Secretary
New York Public Service Commission

KATHLEEN H. BURGESS
Secretary

Figure 1:
Actual and Projected UWNY Annual Average Water Demand

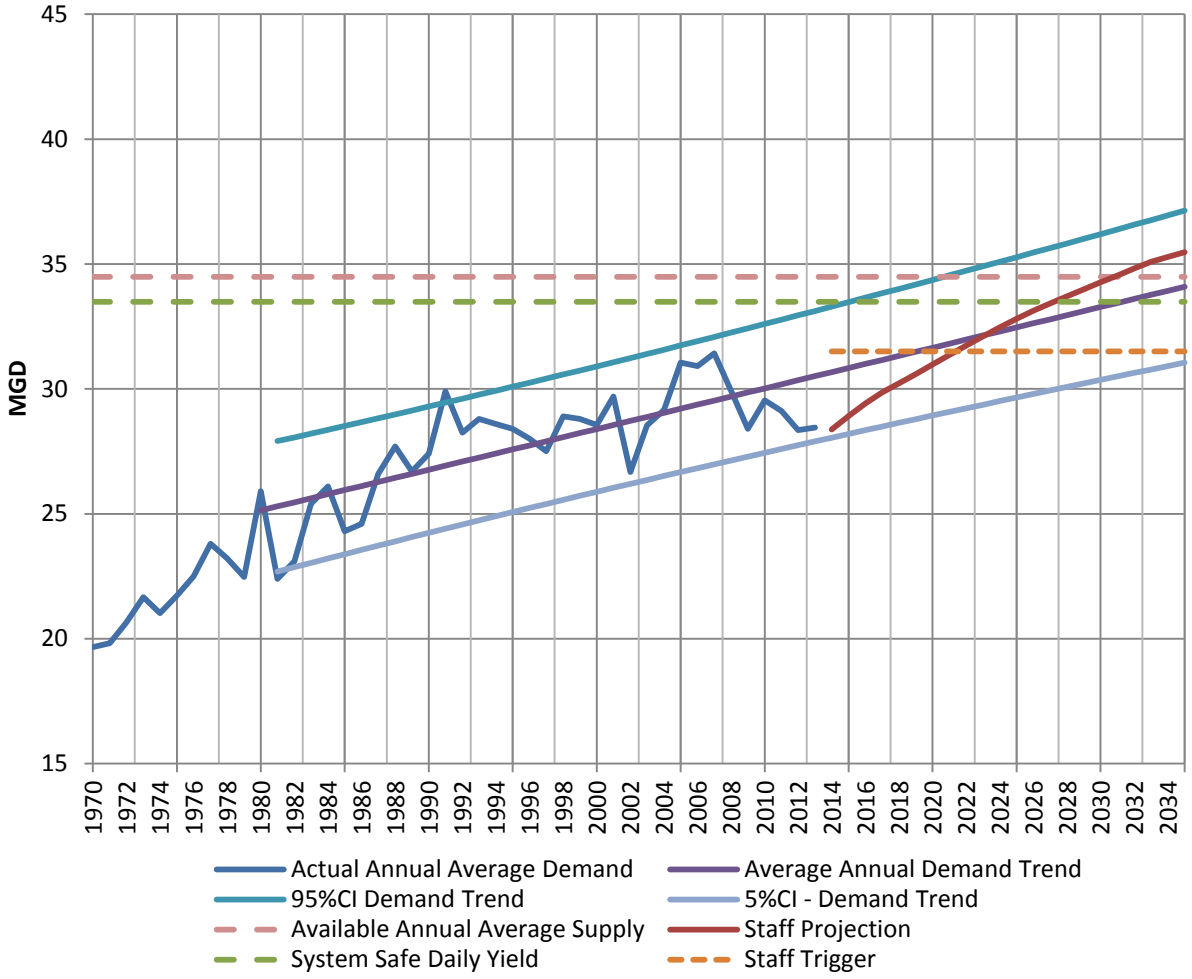

Figure 1 includes the following information:

- **Actual Annual Average Day Demand—**This line is the actual annual average demand each year (the total amount produced in a year divided by the days in the year). This information has been updated to include more recent actual average demand data through year end 2013.
- **Average Annual Day Demand Trend Line—**This line is an updated trend line based on actual annual average demand from 1981 through 2013. The trend line was developed as a linear regression analysis of past data, which was then continued into the future as an indicator of future demand trends. This line is not appropriate for forecasting future water supply needs, because it does not account for the significant weather induced variability in average day water demands from year to year.
- **UWNY Updated Demand Forecast (95 Percent Confidence Interval)—**Using the updated trend line, UWNY's water demand forecast, which is based on a 95 Percent Confidence Interval, has been recalculated. The 95 Percent Confidence Interval represents the upper limit of anticipated variation and was used in the 2006 Rate Case proceeding for water supply planning purposes.[1]
- **UWNY Updated Demand Forecast (5 Percent Confidence Interval)—**This line represents the lower limit of anticipated variation in water demand. Together, the upper and lower confidence interval bands should account for the variability due to weather effects on consumption.
- **Available Annual Average Day Supply—**This line represents the actual supply of water available, on an annual average basis, in UWNY's Rockland County system. UWNY was required by the 2006 Rate Order and Joint Proposal to increase its average annual water supply capacity to 34.5 mgd by December 31, 2015. Per UWNY's filing with the PSC on December 23, 2013, the average annual supply capacity was 34.49 mgd. The line on the chart is shown as a constant 34.5 mgd for readability, although the actual supply was lower in past years before UWNY added capacity to its supply system.
- **System Safe Daily Yield**—This line represents the Safe Daily Yield of total available water supplies for supply planning purposes on an annual average basis in UWNY's system. As defined in the *Ten-State Standards* document used by the PSC and NYSDOH as a regulatory standard,[2] the quantity of water that should be maintained in all surface and groundwater sources shall equal or exceed the design maximum day demand with the largest producing well out of service. The annual average supply of UWNY's largest producing well, New Hempstead #18, is approximately 1 mgd, based on the annual average supply capacity approved by RCDOH. Therefore, as of December 23, 2013, the available safe daily yield of UWNY's Rockland County system is 33.5 mgd. The line on the chart is shown as a constant 33.5 mgd for readability, although the actual supply was lower in past years before UWNY added capacity to its supply system.

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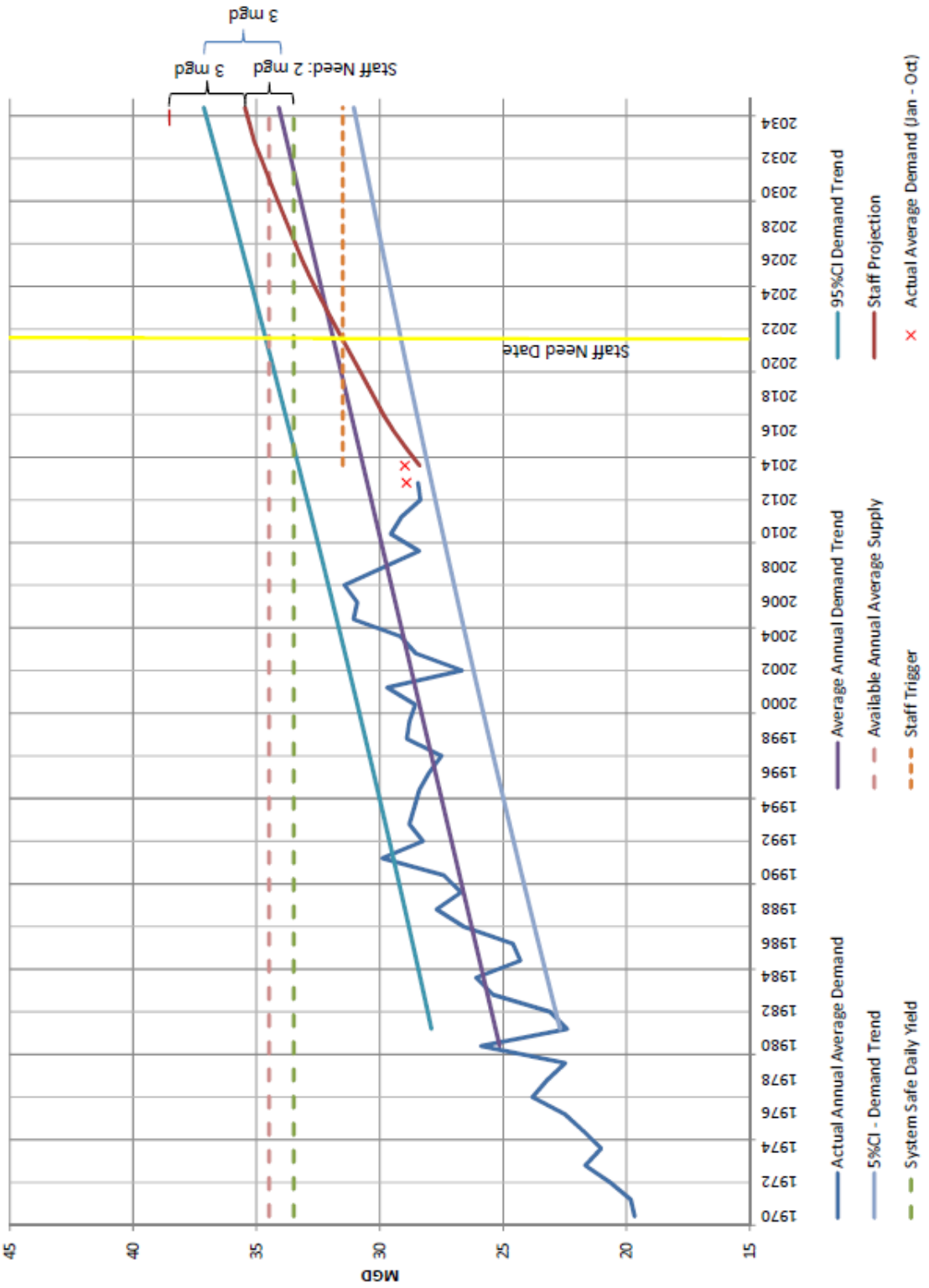
[1] The lines shown as the 95 Percent Confidence Interval and the 5 Percent Confidence Interval are determined using the statistical average (i.e., the average annual demand trend line) and the standard deviation of observed values from this average. The confidence interval level is defined as the probability of an event occurring outside the range of the confidence interval pair.

[2] *Recommended Standards for Water Works, Policies for the Review and Approval of Plans and Specifications for Public Water Supplies*, 2012 Edition, Part 3.

- **Staff's Average Annual Demand Forecast---**This line utilizes the County's population forecast updated for the actual 2010 census data that estimated growth at five year intervals to 2035. Staff used the Company's estimated percentage of people served as a subset of the total population which included the fact that systems within the service territory continue to migrate to the Company. Using the most recent three years of consumption data a gallons per day per person (per capita) consumption was determined. This was then multiplied by forecast population for each of the different user types - residential, non-residential and other. Adjustments to the per capita consumption were made to reflect resumption of economic growth (residential per capita was adjusted to match the 10 year average and non-residential was adjusted based on Moody's April 2013 employment forecasts for Rockland County) and continuing Company conservation activities to account for the continued turn-over of fixtures and new water use technology and an annual level of non revenue water reduction over the next decade based upon the Company's roll out of district metering.

Figure 1:
Actual and Projected UWNY Annual Average Water Demand



Abbatecola, Vincent
Abraham, Channah
Abraham, Sally
Accetta-Pugh, Teresa
Acevedo, N. Jose
Adamski, K.V.
Adamy, Paul
Adelson, Mark
Adzema, Robert
Agro, Joan
Albrecht, Doug
Alesi, Greg
Alessi, Rose
Alfano, Joseph
Alfano, Patrick
Algranati, Michael
Ali, Donald
Alice
Amatuzzo, William and Karen
Andersen, Judy
Andi
Andrea
Andrea
Andrews, Margaret
Annunziata, Elaine
Antony, Agin (Youth Sierra Club of Rockland County)
Appelbaum, Laura
Appleton, Albert
Appleton, Albert F.
Aragao-Famularo, Maria
Arena Jr., Joseph
Arena, Joseph
Arin, Theodore
Arin, Theodore (AARP Chapter 1577)
Arp, Katherine
Arthur, Diana
Artin, Thomas (Artin Arts)
Artmfasolino
Ashford, Brad
Auyang, Czerny
Avery, Jessica
Aviles, Diego
Baade, C.
Bagatta, Joanna
Baitler, Susan
Balban, Kenneth
Baldasare, Dolores
Bankey, Chris
Bankey, Christopher
Barclay, Suzanne
Barczak, Annamaria
Barhydt, Liz
Barjon, Pierre
Barker, Mina
Barletta, Beth
Barletta, Caroline
Barletta, Devin
Barletta, Hilary
Barletta, Kevin
Barnard, Patricia
Barnett, Jeffrey
Barry, Kathryn A.

Bartholomew, Alice
Baruch, Lois
Bastone, Paul
Baum, Marvin
Baver, Sherrie L.
Baxter, Susan
Beattie Jr., Artemas
Beck, Deborah
Beckerle, Joe
Becnel, A.
Beichel, Helen
Belitsky, Elizabeth
Benary, Barbara
Benedick, J.
Benfield, Richard
Berat, Gilbert
Berger, Rena and Charles
Berkowitz, Bennett
Berlinghof, Erika
Bernfeld, Ellen
Bernhardt, Angela
Bernhart, Peter
Berry, Ed
Berson, Joan and Daniel
Berwanger, Cory T.
Betancur, Carlos
Bidon, Marc
Binder Selover, Nancy
Birnbaum, Jacqueline
Bissell, Stephen
Blake, Michael
Blattstein, Barbara
Bloom, Loren and Mayra
Bodkin, Cora
Bohcke, Theodore
Boutsikar, Dennis
Bowen, Jessica
Bowman, Robert
Brady, Jim
Braman, Stuart (Lamont-Doherty Earth Observatory of Columbia University)
Braun, Steve
Breithaupt, Mark
Breithaupt, Mark K.
Brennan, Ann
Brennan, Anna Maria
Bressler, Joyce
Brew, Grace
Briccetti, Heather C. (The Business Council of the State of New York)
Brizzi, Paul
Brociner, Gill
Brock, Howard
Bruen, Gayle
Brunn, Jim
Bruno, Daniel
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Bucciarelli, Nancy
Buchbinder, Janet
Buckley, Eileen

Bulin, Tara
Bundersen, Nan and Bob
Burak, Coletta
Burd, Stan
Burger, Keith
Burke, Bill
Burke, William
Burns, Kathy
Burzinski, Kathryn E.
Busse, Judith
Butler, Edward
Buxbaum, Diane
Buxbaum, Diane D.
Byne, Ann
Byron, Debra
C., Cariel
Cables, Alex
Cairo, Sonia
Calegari, Louis
Cally, Lori
Camorati, Nancy
Camorati, Nancy A.
Campadonico, Helen
Campbell, Kelly
Campbell, Lisa M.
Campisi, Patricia
Candela, Mariano
Cant, John
Capria, Barbara
Carey, Edward
Carlock, Hayley (Scenic Hudson)
Carlucci, David (NYS Senator)
Caropelo, Camille
Carreras, Shannon
Carroll, Marianne
Cartamil, Jorge O.
Carter, Khalia
Castelluccio, Louise and Michael
Cavuoto, John
Cavuoto, John and Lauren
Chaffee, Tom
Chambers, Gwendolyn
Chanin, Amy (Youth Sierra Club of Rockland County)
Charmak, Shiela
Chazal, Matthieu
Chazin, Al
Cho, Dean
Christensen, Jordan
Christensen, Jordan (Citizens Campaign for the Environment)
Christie, Jerry
Cimmino, Anthony
Cirilli, John
Cirone, Gail
Citizens Campaign for the Environment
Ciuccio, Damien
Clair, Paula
Clark, Allan
Cleveland, Marilyn

Clifford, Michael J. (Bricklayers and Allied Craftworkers Local 5)
Cline, Suzannah
Clinton, Daniel
Co, Elizabeth
Cochran, Kathleen
Cohen, Janice
Cohen, Lisa
Cohen, Susan
Coker, Connie
Coker, Connie L.
Collins, Geraldine
Colon, Paul
Connery, Thomas
Connor, Janet
Connor, Liliana
Conra, N. Dean
Conrad, N. Dean
Conrad, Nancy
Cooper, Susan
Coplon, Sherry
Corbin, Jonathan
Corbin, Jonathan (AARP Rockland County Chapter 1577)
Cordero, Frank
Corish, Michele
Cornell, Harriet
Cornell, Harriet D. (Chair, Rockland County Legislature)
Corvaja, Carlo
Corvino, Sherry
Cosgrove, Owen F.
Courtney, William and Jane
Cozza, Laurrie
Cressman, Kara
Criscuolo, Connie
Crowley, Zara
Crunden, Leslie
Cumbe, Wilson
Cunneen, Jim
Cutul, Peter
D'Errico, Bob
Dabrush, Joan
Daly, John
Danner, Lawrence D.
Darbonne, Deborah
Darcy, Thomas
Davis, Joyce
Davis, Sam
Day, Ed
Day, Edwin J. (Rockland County Executive)
De Lisser, Dave
De Lucca-Connor, Liliana
Deane, Michael (National Association of Water Companies)
DeAngelo, Anthony
Deats, Mark
Deby
deCamp, Amy
DeCrescenzo, Jocelyn
Degenshein, Jan

Del Valle, Vivian
Delisio, Michael
Deluise, Mary
DeMeo Boesch, Veronica
(Mayor, Village of Airmont)
Dempsey, Ed
DeNicola, Rick
Denker, Marcy
Dentico, Penny
Derven, Marjorie
Dery, M.
Dery, Mark
Devan, Fred
Devlin, Kelly
DeVries, Brian
DiAngelo, Mike
Dickey, Joanna
Dickey, Joanna (Strawtown Art
& Garden Studio)
Didrichsen, Susan
Diederich Jr., Mike
Diederich, Mike
DiFrancesco, Laurie
Dillon, Robert
Dilon, Robert
DiLorenzo, Dennis
DiLorenzo, Joanne
DiRocco, Steven
Doherty, George
Doherty, Nancy
Donlon, Marie
Donovan, Ellen
Dos Santos, Jack
Doviak, Todd
Downs, Roger (Sierra Club
Atlantic Chapter)
Drapkin, Jonathan (Hudson
Valley Pattern for Progress)
Drechsler, Jacquelyn
Drexler, Terri
Duffy ceile Leidy, Colleen
Duffy, Colleen
Dugandzic, Stephen
Durkin, Catherine
Duthie, Dan
Edelstein, Miriam
Egan, John
Egazarian, Shelley and Adam
Egloff, Elizabeth
Eisen, Nancy
Eisen, Noam
Eisen, Rachel
Ekker, Susan
Elder Yassky, Bonnie
Elder, Carole Lynn
Ell, Rick
Elliott, Janet E.
Elton, Anne
Emiller2
Engelhardt, Neil
Engle, Althea
Esteve, Gregory
Esteves, Carmen

Estrin, Daniel E. (Pace Environmental Litigation Clinic, Inc.)
Etherton, S.
Evans, Harold
Fagelman, Mark
Falzone, Don
Farrell, Joseph A.
Fasolino, Art M.
Fast, Wendy
Fellows, Thelma
Fenner, Benjamin
Fernandez, Noel
Fiedler, Barbara
Fiedler, Barbara and Walter
Filgueras, Susan
Filgueras, Susan (Stony Point Action Committee for the Environment)
Filippone, John
Fine, Scott
Finn, Geoffrey (Town of Stony Point Supervisor)
Finnell, Rebecca
Firestone, Debbie
Fischer, Kate
Fisher, Connie
Fitch, Athena
Flanagan, Lynn
Flaxman, Martin
Flowers, Bobbie
Flowers, Bobbie Dee
Fowler, Margaret
Fox, Vicki
Frank, Debby
Frank, Deborah
Fratto, Sam (International Brotherhood of Electrical Workers Local 363)
Freidrich, Nora
Freud, Olive (Committee for Environmentally Sound Development)
Fried, David
Friedrich, Nora
Friedrich, William
Frosch, Suzanna
Fuchs, Sister Lorelei
Furlong, Mary Ellen
Fursich, Rob
G., Hank
Gaffney, Mary Pat
Gale, Lori J.
Galli, Barbara
Gamboli, Vincent (Town of Haverstraw Councilman)
Garabed, Steven
Garofalo, Patricia
Gavin, Joyce
Gaw, Cary
Gaydos, Michael (International Association of Bridge Structural Ornamental Reinforcing Ironworker)

Gaydos, Michael (Ironworkers Local 417)
Genser, Jeffrey
Gerard, Alice
Gerstein, Sid
Giannakou, Mary
Gilbert, David
Gilbert, David and Nancy
Giles, Sally
Gill, Mary
Girardin, Josephine
Glidden, Suzannah
Glozzy, James
Gluck, Michelle
Goebel, Jane
Golden, Joan
Goldfarb, Janice
Gomez-Rolls Romonita
Gonzalez, Janet
Gonzalez, William G.
Goodman, Diane
Gordon, Matt
Gottlieb, Laurence P. (Hudson Valley Economic Development Corporation)
Gould, John (Town of Haverstraw Councilman)
Gould, Laura
Gould, Warren
Grady, Peter
Grech, Tom
Greco, Maria
Greco, Tony
Green, Lenore
Greenblatt, Robert
Greene, Manna Jo (Hudson River Sloop Clearwater, Inc.)
Greiner, Gail
Griggs, Joyce
Grinshpun, Dina
Grishman, Joan
Gromada, John
Gromada, John (Piermont Marsh Conservancy)
Grotheer, Kurt
Gruber, Simon
Gruber, Simon (CUNY Institute for Sustainable Cities)
Gszmom
Guarasci, Tina
Gunn, Brian
Gunn, Jean
Gunther III, Arthur Henry
Gunther IV, Arthur H.
Gussow, Joan
Gustofson, Mary
Gyantfan
Haas, Margaret
Habas, Don
Habif, Jack
Halverson, Cecilia
Hancock, Tracey
Hannapple, Richard
Hansinger, Ian

Hanson, David
Harrigan, John
Harrington, Richard
Harris, Susan
Harris, Tom
Harvey, Dermot
Hatala, Mary Ann
Havan, Artineh
Hawkins, Gil
Hawkins, Gil (Hudson River Fishermen's Association)
Hazynski, Chris
Heaney, Ed
Heaning, Richard and Jo
Heffron, Joshua
Hegarty, Elizabeth
Hegarty, Mary
Hegeman, E.
Heider, Catherine
Heinzen-Hackett, Mary Ann
Heller, Phyllis
Henderson, Kim
Henderson, Richard
Hendry, Bruce
Henig, William
Hernandez, Roberto
Hertzberg, Triny
Higgins, Gini
Hill, Betsy
Hill, Christopher
Hill, Geoffrey
Hill, Lorinda
Hiller, Rachel
Hindin, Jeffrey
Hirsch, Meryl and Roger
Hito Shapiro, Susan
Hoffman, Alison
Hoffman, Miriam
Hohlfeld, Heidi
Hohlfeld, Katrina
Hohlfeld, William D.
Holmes, Gaylord
Holmes, Gaylord C.
Hood Jr., Jay (Legislature, District 3)
Hopkins, Steve
Horn, Jack
Houghton, Beverly and Robert
Houghton, Robert W.
Houst, Steven
Hovey, Gail
Howard, Bruce
Howe, David
Huang, Jason
Huber, Christina
Huberman, Warren
Hughes, Stephanie
Hunt, Frances
Hurwitz, Maryellen
Hushin, Kelly
Hyams, Harriet
Iarocci, Carla
Idoni, Robert
Imbornoni, Herb

Jackie
Jackson, Craig
Jackson, Robert
Jacob, Klaus H.
Jacobs, Jake
Jacobson, George
Jaffee, Ellen C.
(Assemblymember)
Janovic, Mark
Javenes, Karl
Jaxel, Carol
Jen
Jenkins, Judy and Mike
Jensen, Theona
Jindal, Swaraksha
Johnson, Margaret and Rod
Johnson, Sarah
Jones, Richard R.
Joosten, Michael
Joshua
Joslin, Daphne
Judelson, Mark
Kaess, Lisa
Kagel, Janaki
Kaggen, Marilyn
Kahn, Laurie
Kantrowitz, Edith
Kaplan Robins, Leah
Karpel, Ruth
Kartzmer, Susan and Michael
Kaufman, Louise
Kecskes, Robert
Kecskes, Robert A.
Keene, Glen and Susan
Kelly, Eileen T.
Kelly, Patrick
Kenna, Laura
Kent, Mercedes
Kesselman Bertoli, Jessica
Khan, Kanwer
Kilner, Kevin
King, Ben
Klein, George (Sierra Club
Lower Hudson Group)
Klein, Nan
Klint, Rolfe
Knyfd Jr., Edmund
Knyfd, Ed
Knyfd, Edmund
Kohls, Carl
Kohut, Michael (Village of
Haverstraw Mayor)
Kolwicz, Kenneth
Konopko, Luanne (Town of
Stony Point)
Koshy, Abraham
Koster, Fred
Kostis, Steven
Kozen, John
Kraus, James
Krause, Allan
Kuiper, Tammy
Kurtz, Peggy
Kwasnicki, John

Kyle, Thomas M.
Kynast, Michael
Kyriacou, Sophie
Lackey, Mercedes
Lagana, Joseph
Lagomarsino, Lois
Lall, Upmanu (Columbia Water Center)
Lane, Barry
Lapidus, Debi
Lasker, Shirley (Town of Clarkstown Deputy Supervisor)
Lavatelli, George
Lazaro, Andrew
Lee, Benjamin
Lee, Steven
Leff, Kenneth M.
Lefkowitz, Gary and Sande
Leighty, Jill
Lenart, William
Leonardo, Stephen
Leonardo, Stephen and Tina
Lerner, Sheryl
Lettre, Jamie
Letzter, Ann
Levart, Lisa
Levin, Alan
Levine, Jonathan
Levine, Joseph
Levine, Josephine and David
Levitt, Jeffrey A.
Libitz, John
Lima, Jennifer E.
Lin, I-Chyang
Lin, Peiling
Linke, Thomas
Litoff, Toby
Litwak, Mona
Long, Jeffrey
Longyear, Sharon
Louie, Rita J.
Louis, Tracy
Lovera, Mary C.
Lowenstein, Barbara
Low-Hogan, Nancy (Rockland County Legislator)
Lowney, Hannah
Lozito, Susan
Lucanera, Vincent
Luckhardt, Carol
Luongo, John
Lupfer, Pamela
Luxenberg, Larry
Luzi, Silvia
Lynn, Michele
Lyons, William
MacDermott, Amy
Mackinnon, Geraldine
Madalasa Mobili, Elizabeth
Madronero, Dorice
Madronero, Dorice A.
Mahecha, Ishtariam Natalia
Mahecha, Nathalia
Maher, Kevin P.

Mahoney, Nancy S.
Maia
Maldonado, Patricia
Malina, Matt
Mancini, Alaina
Mandel, Michael
Mandel, Michael and Dianne
Maniscalco, Linda
Mapelli, Margaret
Maraia Jr., John
Marco, Timothy
Marcoccia, Laura
Marcus, Christina
Markiet, Carol
Markiet, Vicki
Marshall Mrakovcic, Margaret
Marshall, Margaret F.
Martin, Gina
Martinez, Eva
Mase, Jon
Maslowski, Jennifer
Mason, Soia
Mason, Sona
Mason, Sosa
Massetti, J.
Matsumoto, Margaret
Maud Lindsay, Sara
Maxfield, Randy
Maxwell, Dorothy
Maybeck, Paul
Mayer, K.
Mayer, Kathy
Mayer-Bakall, Connie (Putnam Highlands Audubon Society)
Mazza Howat, Jane
McCarter, Melissa
McCarthy, Gerald
McCarthy, Gerald A.
McDonnell, Susan
McEvoy, Paula
McGarvey, Charles
McGlynn, Frank
McGowan, Helen G.
McKearney, Karen
McKoy, Mark
McLane III, Charles F.
McLaren, Malcolm G. (McLaren Engineering Group)
McLaughlin, Brian
McLaughlin, John
McLaughlin, Kathleen
McMann, Betsy and Robert
McNally, Joanne
McQueeney, Lorraine
Mednick, Christine
Megdanis, Andy
Meisler, Betty
Members of the Stony Point Conference Center
Memmert, Jonathan
Menon, Raj
Mercurio, Greg
Meric, Laurent
Messina, Kathryn

Messinger, Laurie
Metzler, Peter
Meyer, William (Sierra Club Lower Hudson Group)
Michaelson, Tim
Midelton, Gary
Miller, Diane
Miller, Earl
Miller, Ed
Miller, Gordon
Miller, Sylvia
Minton, Joanne
Mirsky, Nancy
Mistry, Hetal
Mitchell, Christine
Mocio, Rosemary (Better Homes and Gardens Rand Realty)
Model, Ellen
Modra, Debora
Moetzinger, Steven
Mohapatra, Tamanna
Molina, Dimas
Molina, Miguelina
Montana, Raymond
Montemorano, Susan C.
Moolick, Jean
Moolick, John
Moore, Sharon
Morales, Francia
Moreno, Jamie
Morgan, Vin
Morgan, Vincent S.
Morrison, Daniel
Morrison, Richard
Morton, John
Moynihan, Janet (Citizens Campaign for the Environment)
Muhlenberg, Jerome
Muller, Theresa
Muller, Timothy (IUOE – Local 825)
Mulligan, Ann
Muni, Brian W.
Munitz, Deborah (ROSA 4 Rockland Inc.)
Murdock, Chad
Murdock, K.C.
Murphy, Michael
Murphy, Peter
Nachstein, James G.
Nadboy, Walter
Naples, Jean
Narciso, Andrea
Narciso, Robert
Nardella, Carmel
Naughton, Linda
Naughton, Linda M.
Needell, Laurie
Neffinger, G G
Negron, Carmen V.
Neil, David
Nelson
Nelson, Jon
Nemeth, JoAnne

Neumeister, John
Newman, Janet G.
Nicolau, Anthony
Nissen, Elsie
Nolting, Sharon
O'Brien, Alice
O'Connor, Kevin
O'Leary, Kevin
O'Neill, Jim and Eve
O'Reilly, Thomas J.
O'Reilly, Tom
O'Rourke, Ann
O'Rourke, Eileen
O'Sullivan, Andie
O'Sullivan, Taylor
Occhiogrosso, Deborah
Ofeldt, Richard
Ohayon, Frances
Oldenburger, Francine
Olori Jr., Ronald
Orangetown Environmental Committee
Orichio, Nicholas
Orlando, Robert
Ostrom, Tana
Ottogalli, Bruce
Owens, Sophia
P, Gale
P, Louis
Pakaln, Laura
Palacio, Sheryl
Palines, Christopher J.
Palmer, Charlene
Papandrea, James
Papay, Paul
Papo Cancel, Isidro (Town of Haverstraw Councilman)
Paras, Carol
Parker, Catherine
Patasaw, Natalie
Patasaw, Natalie (The Rockland County Environmental Management Council)
Pearson, Barbara and Kenneth
Pedersen, Rusty
Peek, Laurie
Pelcak, Laura
Pendleton, Albert W.
Pensabene, James
Pepe, Ross J.
Pepper, Zelda
Perimutter, Martha
Perlmutter, Alvin
Perry, Betty
Perry, Betty and Win
Perry, Dwaine C.
Peteet, Dorothy
Peterson, Douglas
Petrazzuolo, Michelle
Petruzzi, Maryke
Petry, Brenna
Phenix, Roger
Phillips, Howard (Town of Haverstraw Supervisor)

Pisha, Gayle
Pistolesi, Linda
Pitkofsky, Robert L.
Platan, Patricia
Plotkin, Brad
Polentz, Mary Ellen
Pollitt, Barbara
Pomerantz, Rhonda S.
Porcu, John
Potanovic Jr., George (Stony Point Action Committee for the Environment)
Potanovic, Jr., George (Rockland Water Coalition)
Pousette-Dart, Jon
Power, Madeline
Prehoda, Bill
Prince, Liz
Prouty, Dave
Public Health and Sustainable Energy (PHASE)
Putko, Anne
Pyun, Lydia
Quiros, Vince
Rabbitt, Annie (Assemblymember)
Raccioppi, Rose Marie
Raczko, Bob
Radkiewicz, Wiska
Raglin, Cherie
Raimondo, Michele
Ramapo River Committee
Ramundo Jr., John F. (Village of West Haverstraw)
RD
Reers, Rita
Reers, Rita Mary
Regan, Yvonne and Charles
Regina, Angelo
Reich, Stephen
Reich, Stephen J. (Laborers' International Union of North America Local 754)
Reichlin-Melnick, Elijah
Reinhardsen, David
Relis, Diane
Remsen III, Gerard
Renfroe, Harris
Rhodes, Robert I.
Rice Gerstein, Bernice
Rice, Laura
Richards, Paul G.
Rimland, Mel
Riso, Barbara
Ritt, Elinor
Rizzi, Deborah
Robins, Jon
Robins, Jonathan
Rockland AARP
Rockland County AARP Chapter 1577
Rockland Residents Against Flooding Tomorrow (RAFT)
Rockland Sierra Club

Rodriguez, Angela
Rodriguez, Donna
Roland, Aubrey (Youth Sierra Club of Rockland County)
Roling, Michael
Roman, Kelvin
Romano, Mary
Rones, Linda A.
ROSA
Torne Valley Preservation Association
Rosario, Erik
Rose, Laura
Rose, Laura and Jeffrey
Rose, Stephen
Rossi, Michele
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