

Executive Summary

At the end of 2006, the New York State Public Service Commission ordered United Water of New York (UW), the Rockland County water utility, to take measures to meet a projected long term shortfall of water for Rockland County. One month later, UW proposed meeting this need by building, at a cost in excess of \$150 million, a 7.5 million gallon a day (mgd) desalination plant (desal plant) on Haverstraw Bay, to treat the brackish waters of the Hudson River Water and make them suitable for use as drinking water.

In the six years that have followed, the proposal for a desal plant has faced steadily growing opposition, from local stakeholders, Rockland and Hudson River environmental interests, and a mounting number of elected officials. The concerns expressed by opponents include negative impacts on the Haverstraw Bay environment, the high energy consumption of the plant and its contribution to global warming, the introduction into Rockland drinking water supplies of water contaminated by radioactive wastes from the Indian Point Plant, the rate shock the plant will inflict on Rockland water uses and the Rockland economy given that it will drive a doubling of current water rates, and the lack of serious consideration of alternatives to the plant that would be lower cost, lower impact, and easier to implement such as water conservation.

In 2008, many of those concerned about the desal plant organized themselves into the Rockland Water Coalition (the Coalition), a coalition of thirty environmental and civic organizations committed to finding a better, lower cost solution to Rockland's water needs than the desal plant, and to seeing that the question of Rockland's water future was addressed through development of a comprehensive water resource management plan for the future, organized around the concept of sustainable water management. Early this summer, the Coalition asked this author to review the desal plant debate and the issue of whether there are alternatives to it. This report is the result of that review.

In reviewing the desal debate, this report found it has four key elements. The first is the question of long term water demand in Rockland, the second is what alternatives are available to meet it, the third is whether the desal plant will be an economic white elephant, and the fourth has been the lack of due diligence in assessing the desal plant and alternatives to it.

With respect to the first question, long term water demand, the report notes, as did UW in its August 19th submission to the PSC, that water use over the last five years has fallen considerably short of the demands projected when the PSC first ordered a new water source for Rockland. This means first, that there is time to systematically address the issue, both the question of need and alternatives to it and, second, that a new analysis of future demand should be carried out. Moreover, that analysis must factor in the impact on demand of the rapidly changing rate environment of Rockland County. To assume

that water demand will be unaffected by the over 50% water rate increases UW has already requested or the doubling of water rates that would be inevitable if the desal plant was built would be to defy economic reality, historic experience and virtually ensure that future demand needs will be overstated.

Second, with respect to alternatives, the debate over the desal plant is a classic example of choosing between a supply side solution, adding a new source of water, and a demand side solution, making do with existing water resources, either by better managing them, or by eliminating wasteful and uneconomic uses of them. Increasingly, in American water management, the emphasis is on finding demand side solutions, which have proven to be cheaper, have less environmental impacts, and be more flexible and easier to implement. The question is whether the Coalition is correct that there are practical demand side solutions for Rockland County that can meet its future water needs.

This report concludes advocates for a demand side solution are correct. Taking the 7.5 mgd a day the desal plant would provide as a planning target, this report finds a combination of three demand side measures: i. a better operating rule for the DeForest Reservoir; ii. reducing water main leakage; and, iii. reducing consumer water use could provide 8.5 mgd, in short more water faster and far more cheaply than the desal plant.

The report discusses each of those proposals in detail. First, with respect to DeForest Reservoir, far more water is being sent downstream in what is called passing flow than is necessary to meet New Jersey's legitimate needs. Adjusting that passing flow to the level that would be necessary would obtain for Rockland 4 mgd in additional water. The Coalition's letter to the County Executive, attached to this report, prepared with the assistance of New Jersey water expert Robert Kecskes, details the basis of this conclusion and calls for the County to ask the New York State Department of Environmental Conservation (DEC) to resolve this issue and to meet the commitments made in response to the County Executive's initiatives in the past that they would do so.

Second, the report points out that UW could, on the basis of statements made in the EIS prepared with respect to the DEC permits needed for the desal plant, save 1.5 mgd a day by accelerating its programs to reduce water main leaks, an amount that represents a modest target of a 30% reduction in the current water main leakage rate.

Third, with respect to consumer water use, the report finds that a 10% reduction in consumer water use would save 3 mgd a day, a figure that, by targeting excessive lawn watering, along with targeted measures for selected water use sectors should be easy to meet and is well below what other water conservation programs both regionally and nationally have obtained.

Overall, this demand management program, which sets relatively modest and unambitious targets could produce more water (8.5 mgd) than the desal plant (7.5 mgd) faster and at a fraction of the nine figure cost of the desal plant.

Third, the report highlights the prospect that this desal plant, like so many others worldwide, could become an uneconomic white elephant, a valueless burden on the ratepayers and economy of Rockland. What this author found to be one of the most striking parts of the desal plant debate has been the virtually absence of any consideration of what would be the impact on water demand of the rate increases that would be required to pay for the plant. As noted above, if the plant is built, charges for water in Rockland County will at least double. The apparent assumption that the Rockland County ratepayer is going to quietly pay this level of increased water charges and will not adjust his water use to try and offset these additional costs has no basis in economic reality or common sense.

The operative economic concept here is elasticity, how much does a change in price alter the demand for the product? For example, an elasticity of .2 means that for every 10% increase in price, demand will drop 2%. Recent academic research has provided estimates of how much price changes in water will alter demand, finding estimated elasticities as high as .4 to .6. But, this report, to be conservative, takes an elasticity of .3 and asks what that would mean. This would mean that if Rockland's water rates double in response to the desal plant, demand for water will drop 30%, or 9 mgd a day. Be even more conservative and use an elasticity of .2 and water demand still drops 6 mgd a day. In short, if the desal plant is built, the rate impact on water use of doing so will likely eliminate any need for the plant. It is critically important for the economic welfare of Rockland County that this incongruous result, which creates a classic white elephant problem, be systematically assessed by the PSC, in order to avoid creating a major problem of stranded investment.

Next, this report notes the stubborn resistance of the advocates of the desal plant to doing the kinds of systematic planning studies, sector by sector water conservation analysis, rate impact modeling and aggressive search for alternatives that one would have expected before a water utility embarked on a course that would irrevocably commit it to a nine figure investment that would double the price of its product. In the corporate world, the process of systematically analyzing a proposed investment to determine if it is suitable and prudent is called due diligence. The due diligence scrutiny of the desal plant proposal has notably failed, and the forthcoming PSC process should address that concern.

The report then details the many benefits of using a demand side alternative instead of a supply side alternative to meet Rockland's future water needs, including far lower water prices, more job creation, far more compatibility with environmental needs such as

reducing energy use, maintaining existing water quality, conserving capital assets to invest in modernizing Rockland's water infrastructure, and protecting the Hudson River environment among them.

Lastly, the report concurs with the Coalition goal of development of a long term water resource management plan for Rockland. There are many proposals for better water management in Rockland that have surfaced in the desal debate and are detailed in the report. While the report finds that they are not suitable for developing an immediate demand side alternative, it also points out that they deserve serious study in any plan for long term management of Rockland's water resources. This report recommends that the County Executive begin that process by assembling an informal task force of public and private stakeholders to organize a plan for a plan, carried out by impartial experts in a transparent way with full public participation. Such plans should then be presented to the PSC and DEC for their ratification and support through their regulatory processes.

The report concludes by noting the economic and environmental consequences of this decision for the future of Rockland County, the importance of a planning process that gives them full consideration, and that the failure of the PSC and DEC to support such a process in their forthcoming reviews of the issue will be a major institutional failure by the State's water regulators.