

Introduction

On December 14, 2006, the New York Public Service Commission granted United Water New York permission to raise its rates for three years in a row, starting in 2007. As part of this agreement, United Water committed to coming up with a long term water supply project for Rockland County. A month later, United Water submitted a plan to build a desalination plant on the Hudson River, with the stated intent of using that plant to fulfill its commitment to the state.

Today, concerned citizens of Rockland County have come together to urge policymakers to oppose the desalination plant. While residents of Rockland County are paying higher bills, United Water's plan could damage the environment and public health, does not solve Rockland County's long term water needs, and fails to evaluate alternatives that could.

The Haverstraw Water Supply Project

United Water's proposed Haverstraw Water Supply Project would draw water from the Hudson River and distribute it throughout Rockland County. Like other water supply projects, it would involve a new water intake, intake pumping station, treatment facility, and new distribution mains. Unlike traditional facilities, however, the plant must be able to remove salts, PCBs, strontium, radionuclides and other industrial chemicals from the water before distributing it to its customers. This means that the facility will include a step for reverse osmosis desalination—the only treatment on the market today that can reduce those chemicals in water enough to meet safe drinking water standards.

What is desalination?

Unfortunately, reverse osmosis technology comes along with many risks to the public. The concept of desalination is simple in theory, but in practice involves a lot of money, energy, pollution, and other risks.

Simply put, desalination removes salt and other minerals from water. There are actually multiple methods to accomplish this. In ancient times, Aristotle observed that you could separate salt and water by heating the water and collecting the steam, which was salt free after it cooled. Centuries later, engineers figured out that the same process works on a large scale, although it takes so much energy, money and pollution that only money rich and water poor nations, such as Saudi Arabia, or islands without viable freshwater supplies, such as Aruba, saw it as a practical water supply.

In the past 50 years, the United States developed a new technology to remove salt from water called reverse osmosis. Reverse osmosis pumps water over membranes with tiny holes in them that block the passage of salts and other chemicals. While less expensive and energy intensive than distillation, it is still the most expensive and energy intensive water production in the U.S. And, when used on a large scale, the technology comes with a range of social and environmental problems.

One of the biggest costs associated with the technology is the amount of energy it requires, which incurs both financial costs and contributes to global warming. And global warming is not the only environmental concern. On its way into a plant, the water often brings with it fish and other organisms that die in the machinery. Then, only a portion of the ocean water that enters the plant actually reaches the consumer. The remaining water ends up as a highly concentrated solution that contains both the salt from the source water and an array of chemicals from the industrial process. One of the biggest challenges associated with the technology is disposing of this waste in a way that does not further contaminate our water systems—some plants release it back into the ocean, toxins and all. Meanwhile, since the source water is often seawater, brackish water or contaminated water, the portion of the water that reaches the customer can contain unregulated chemicals not present in normal drinking water, which may endanger public health.

To complicate matters, desalination plants, like any construction projects, often don't live up to the promises made by contractors. Many larger plants currently built for municipal drinking water purposes do not operate at their stated capacity, if they operate at all. In fact, the first large-scale ocean desalination plant for municipal use in the United States, built in Tampa Bay, was fraught with failures and now produces less water than originally promised, at a higher cost.

Desalination in Rockland County

United Water's Haverstraw Water Supply Project will not likely be immune to the risks seen in desalination projects around the country. Already, the plant is sure to be expensive, and likely to cause further rate increases. It will also require a lot of energy. Energy prices fluctuate, so this might mean even more rate increases later on, and regardless will keep operating costs up, and contribute to global warming. The project does plan to mitigate the intake of fish and other aquatic life by building its intake under the surface of the river, although the construction may still have negative impacts on the region's fisheries. Meanwhile, the toxic chemicals removed from the water must be disposed of. United Water plans to send its waste to the Joint Regional Sewage Treatment Plant (2-18), where it may overload the already taxed system.

As for whether Hudson River water is safe to drink, most technical experts agree that the technology can reduce the chemicals to acceptable levels, but many citizens have concerns that trace amounts in drinking water will pose human health risks. And average citizens aren't the only folks concerned about the project. In order to approve the plant, the state Department of Environmental Conservation says it would need to see additional studies, including but not limited to more detailed alternatives, zoning, impact mitigation studies, studies on the landfill site and other technical issues.

Is it worth it?

Will the plant be worth all these costs to the public? United Water promised the state of New York that in order to provide a long term water supply for Rockland County, it

would produce an additional 1.5mgd average daily supply and 7.1mgd peak supply by the end of 2015. The company says it can do that by building a desalination plant in stages—at first it will provide smaller amounts of water but will reach a capacity of 7.5mgd by the time demand reaches that much, sometime after 2021.

This plan sounds simple enough, but it does not fully address Rockland County's water needs. In fact, a closer look at Rockland County's water history reveals that even if the desalination plant does supply that much water, it will not likely produce a viable long term water supply for Rockland County.

To understand why a desalination plant is not a long term answer for Rockland County, one must look at the assumptions that United Water made to come to its conclusion. It turns out that the estimate of how much water the county needs is not based on how much water current residents use, but rather on how much water the county will use if new developments come to town. The company predicts that increased development will create 15,540 new connections in the water system between 2008 and 2025. (1-12)

Tapping into the Hudson River to quench the thirst of these new developments will not create a sustainable supply of water because this new water supply will encourage further development—which will likely create an even larger demand for more water. This is a problem because Rockland County has finite water resources that cannot sustain endless development. Already, in 2002, the state determined that water resources were strained and required that developers go through the department of health first before making requests to United Water. (need cite)

And development isn't just straining water resources because it increases demand. It also interferes with the natural processes that ensure the safety of the water system in the long term. When rainwater hits paved surfaces, it cannot trickle through the ground to replenish the aquifers that feed the wells of the water system. Instead, it is diverted through drains into the Hudson River.

The desalination plan does not take into account the importance of understanding and protecting existing water supplies before creating new developments. Before United Water proposed its plant, the county was actually taking steps to do exactly that, by partnering with the United States Geological Survey to assess exactly how much water exists naturally in Rockland County's aquifers. Yet Untied Water plans to move forward with a new water project that encourages development without first collecting this data to understand the potential impacts of such an action.

Fails to evaluate alternatives

While United Water's plan does not question the wisdom of new development, it also does not include an analysis of conservation measures that could be taken instead of building a new plant. Conservation measures are almost always cheaper, and more environmentally friendly, than desalination. However, the company says that it cannot consider conservation in its planning because it is a private company, not a public

agency, which means it cannot enforce conservation measures. While this is technically true, it fails to mention that as a private company, United Water actually has incentive to pursue this expensive project for reasons that have nothing to do with providing a safe long term water supply for Rockland County.

Since United Water is a corporation, it must produce profits to distribute to its shareholders—who are not necessarily citizens of Rockland County. While the citizens of Rockland County are paying higher water rates, the company is collecting more money, which boosts its revenues. Encouraging conservation actually means less profit for the company.

What's more, the company has no financial incentive to conserve water itself as an alternative to constructing a new project. The company could actually save 2 mgd a day just by fixing leaks in its infrastructure. This fix would be practical, future-minded, and environmentally friendly—and, it would produce almost as much as the desalination plant in its initial years of operation. However, it won't look as good on the company's financial report. Due to the rules of accounting, the investment that the company would make in its own infrastructure would be recorded as a maintenance cost, while the desalination plant, which produces new water, would be recorded as an investment. So, while fixing the leaks might be better for United Water's customers in Rockland County, it won't appear as attractive to the company's shareholders.

Rockland county is not alone.

This story is not unique to Rockland County. Many communities around the country, fearing water shortages, are considering desalination proposals without fully assessing the costs, consequences or alternatives. And, while some public utilities are considering desalination as well, projects are often pushed hardest by corporations who stand to profit from the project.

As long ago as 1991, Santa Barbara and the Montecito and Goleta Water Districts constructed a \$34 million plant during a drought. However, the drought ended before it came online, and the city found that conservation measures implemented during the drought were successful in reducing demand, and officials ultimately shut down the plantⁱ

In the 1990s, officials fearing water shortages in Tampa Bay, Florida, commissioned the first and only large-scale seawater desalination plant to come online for drinking water use in this country. Bankruptcies and contract transfers, technical failures, and lawsuits brought the plant online years behind schedule and millions of dollars more than planned. Meanwhile, Tampa Bay Water built a new reservoir and treatment plant, and implemented conservation programs, which decreased groundwater pumping from 192 million to 121 million gallons per day, despite increased population.ⁱⁱ This meant savings of 71 million gallons a day—almost three times as much as the 25 million gallons a day that the desalination plant was supposed to produce.

Today, the Marin Municipal Water District in California, is looking at building a seawater desalination plant as well. Yet conservation projects in Marin could produce the water Marin needs at a fraction of the price of desalination. In fact, the cost of simply reducing leaks in existing pipes, reducing landscape irrigation waste and increasing the efficiency of household appliances comes out to roughly a third of the cost of producing that same amount of water with a desalination plant.

Most public agencies are turned off by the high costs of desalination projects. Seabrook, New Hampshire considered investing a plant until they realized they would have to raise rates from \$2.80 a gallon to more than \$8.00. The Brownsville Public Utilities Board, in Texas, considered a seawater desalination plant, but abandoned the project because it was too expensive.

Private companies, however, are less phased by the high costs to consumers—in fact, they can see desalination as an opportunity to make a buck. Poseidon Resources, Inc. wants to build a huge desalination plant in Carlsbad, California and sell the water to the San Diego Water Authority. Similarly, Inima USA, a division of Spain-based OHL, is building a plant in Brockton Massachusetts to treat Taunton River water. Regardless of whether the town receives any water, Brockton will pay a fixed fee of \$3.2 million per year for the first three years, which will increase annually thereafter. On top of that, the town will pay a fee for the actual water, depending on how much it receives.ⁱⁱⁱ

Conclusion

Many proposed desalination plants around the country today raise rates for the consumer, pose additional risks, and fail to encourage long term sustainable measures such as better land use planning and conservation. United Water's proposed desalination plant is no different. It is not a long term solution for Rockland County, and may cause more problems than it solves. To truly address Rockland County's water supply, citizens and policymakers must take a comprehensive approach to water management that includes conservation and land use planning, rather than allowing corporate interests to drive water policy.

Take Action!

Join the Rockland Coalition for Sustainable Development in opposing the United Water Hudson River desalination project.

Contact

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ⁱ Cooley, Heather, Gleick, Peter and Wolff, Gary. "Desalination, with a grain of salt." Pacific Institute, Oakland, California, June 2006. p. 28.

ⁱⁱ Barnett, Cynthia. "Salty Solution?" *Florida Trend Magazine*, May 1, 2007.

ⁱⁱⁱ Pateakos, Jay and Elaine Allegrini. “After more than a decade of work, desalinated water to begin flowing soon to Brockton.” *The Enterprise* (Brockton, MA), May 21, 2008.