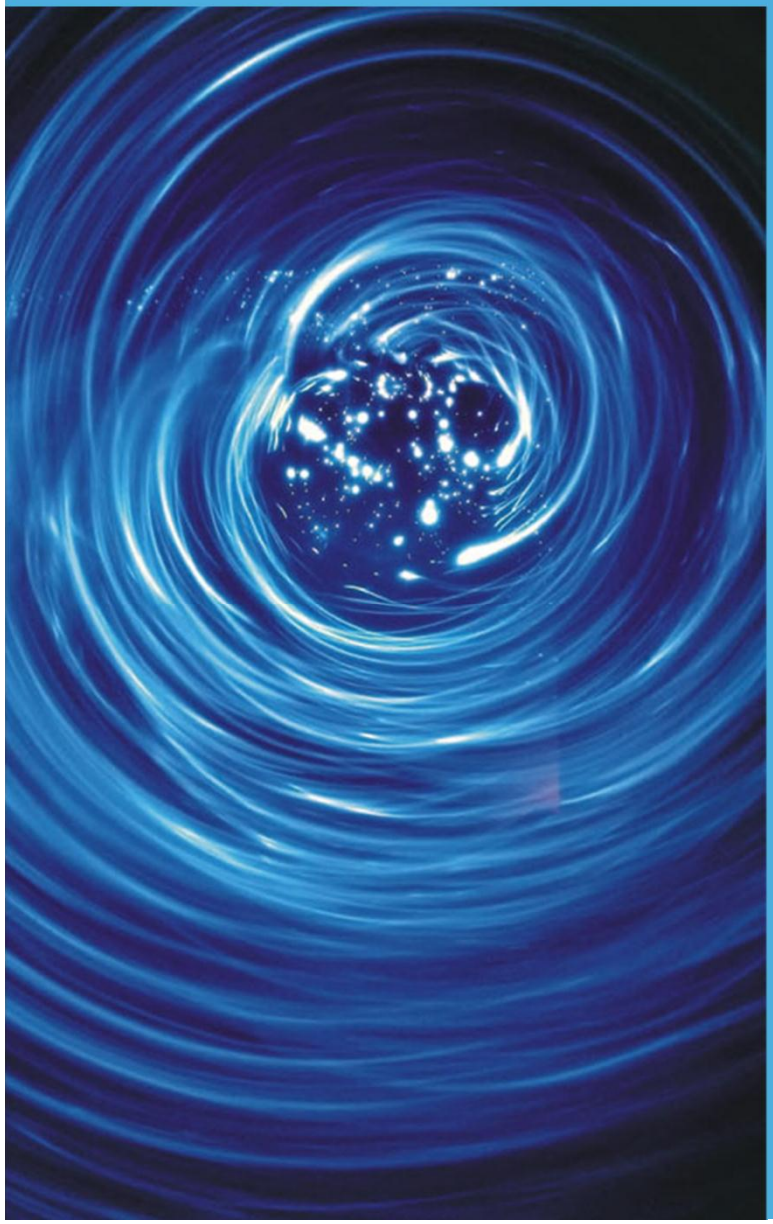
The Haverstraw Water Supply Project

Ensuring the Future of Rockland's Water

NAWC – Orlando, Florida
October 13, 2009

www.unitedwater.com/hwsp

Key Statistics - United Water New York



- Regulated by:
  - New York State Public Service Commission (PSC)
  - New York State Department of Health (NYSDOH)
  - New York State Department of Environmental Conservation (DEC)
  - Rockland County Department of Health (RCDOH)
- Population served: More than 270,000
- In Rockland County for over 100 years
- Average Day Demand: 30 mgd
- Peak Day Demand: 46.5 mgd

Current Water Supply

- Peak day: 46.5 mgd in 2001

- Existing Sources of Supply as of 12/31/06
  - Peak sustainable supply: 45.5 mgd
  - Sources of supply
    - System Wells (20.5 mgd)
    - Ramapo Valley Well Field (4 mgd/7 mgd)
    - Lake DeForest WTP (20 mgd)

- Additional Sources Added as of 6/15/09 (> 4 mgd)
    - Well Improvements
    - Letchworth Treatment Plant
    - Sparkill

By Order of the Commission

- On December 14, 2006 a New York State Public Service Commission Order adopted a three-year rate plan for United Water New York.

- An agreement (Joint Proposal) signed and adopted as part of the order ***requires*** United Water to develop, among other things, a long-term water supply to meet the growing needs for water in Rockland County.

- Parties to the Joint Proposal
  - United Water New York
  - PSC Staff
  - Town of Ramapo
  - County of Rockland
  - Rockland County Fire Chiefs
  - Rockland County Legislator Ellen Jaffee (now New York State Assembly Member)
  - Others

Milestone Requirements

- 2006 Rate Order* included a Joint Proposal that requires United Water to develop a long-term water supply according to established milestones
- Failure to meet milestones will result in financial penalties

Milestone	Date
Project Description to PSC	January 15, 2007 **
Preliminary Conceptual Design	September 30, 2007 **
Submit DEIS and all required environmental permit applications	September 30, 2008 **
Complete pilot plant studies, if required	December 31, 2009
Obtain Environmental Permits	September 30, 2010
Complete 50% design	September 30, 2011
Begin Construction	May 31, 2013
In-service	December 31, 2015

* State of New York Public Service Commission, Case 06-W-0131, Exhibit 11

** Milestone achieved

Background

- United Water has worked hard to keep pace with the fast-growing demand for water in Rockland County.
  - Comprehensive water-conservation programs resulting in a per capita consumption of 75 gallons per day consumption rate in Rockland
    - National average is 90 gallons per day*
    - New York City is over 100 gallons per day
  - Gained additional supply by improving existing wells and expanding treatment plants.
- But this will not be enough to ensure a safe, reliable supply of water for the future.

(Water on Tap – What You Need to Know. EPA 816-K-03-007, October 2003)

Major Water Supply Project Alternatives

- Several long-term sources of supply evaluated, including:
  - New reservoir, i.e., Ambrey Pond
  - Hudson River
  - Additional groundwater supplies
  - Reuse of wastewater
  - Increased use of Lake DeForest
  - Use of Suffern Quarry
- Determined that two sources were viable
  - A new reservoir, i.e., Ambrey Pond
  - Hudson River

Weighing the Best Alternatives

Criteria	Ambrey Pond	Hudson River
Drought Tolerance	Average	High
Dam Safety Concerns	High	Low
Environmental Impact	High	Moderate
Sustainable Supply	Low	High
Construction Complexity	Complex (major civil works project)	Average
Capital Cost (7.5 mgd, before sale of land)	$203,000,000	$116,400,000
Operating Cost	$1.30/1,000 gallons	$1.51/1000 gallons
Annual Revenue Requirement	$44.3 M	$25.1 M
Net Present Value	$524 M	$314 M

* All costs in 2008 $'s

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Hudson River Supply

- The Hudson River is currently being used as a drinking water source by several communities.
- United Water is sensitive to the natural, cultural and scenic values of the Hudson River and the Haverstraw Bay.
  - Extensively considered the river's resources, including its fisheries and biology.
- Treatment plant will draw between 3 and 10 million gallons of water from the river.
  - In comparison, the Bowline generating plant draws an average of 783 millions gallons per day.

Hudson River Supply, cont'd

- Water quality tests on the Hudson River since April 2007.
  - Quality similar to other rivers.
  - One exception is salinity.
  - For some parameters, the Hudson has better water quality than other rivers used for drinking water supply. (cryptosporidium, giardia, nitrate, nitrite, e.g.)
- United Water will use an early warning system to detect any significant change in river water quality.
- Pilot plant will test and optimize water treatment process and continue gathering information on water quality.

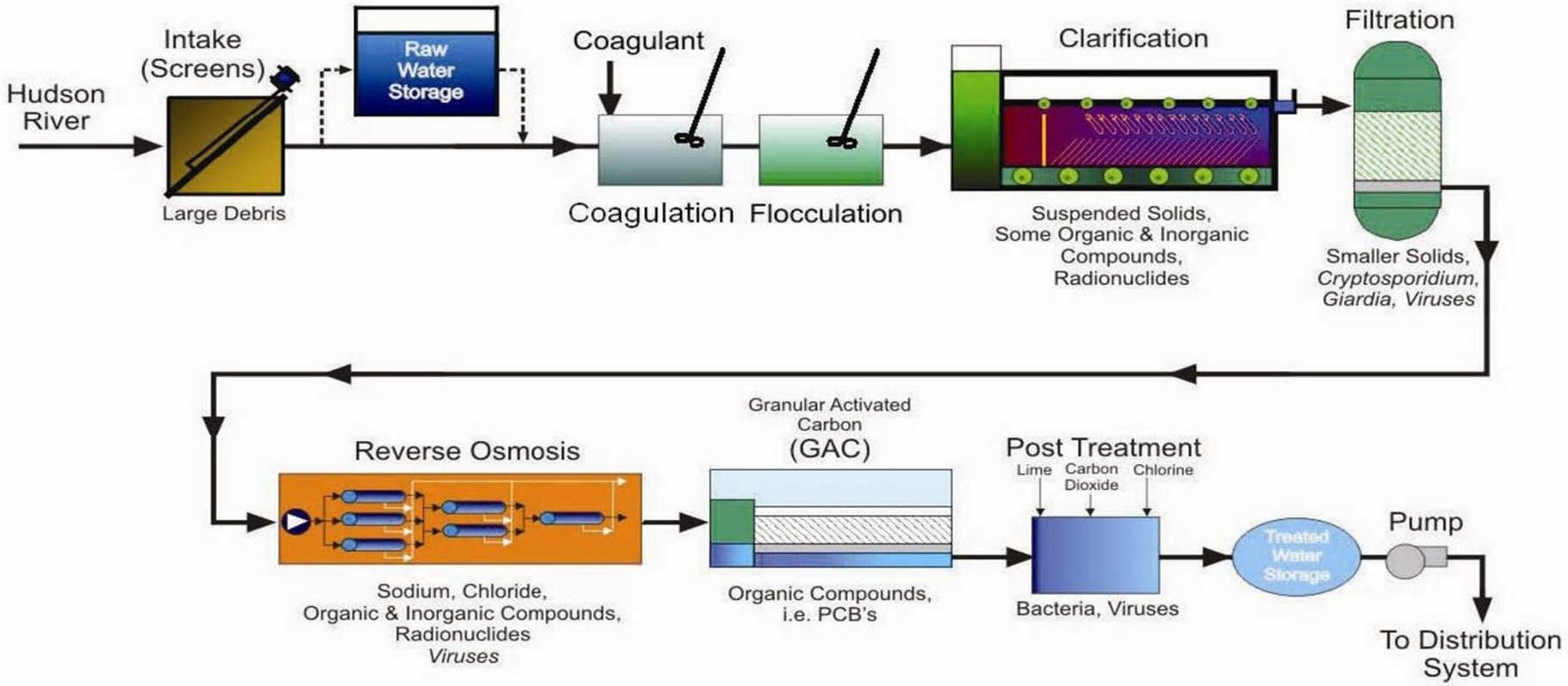
Project Overview

- Standard treatment facility with addition of membranes to remove salt.
- Treatment system will provide potable water that will meet or exceed all environmental and drinking water standards.
- Will initially produce 2-2.5 mgd of purified drinking water.
- Expansion can be phased in to keep pace with demand.

Proposed Water Treatment Process

- Plant will produce high-quality water supply at quantities and pressure needed to meet projected future demands.
- State-of-the-art, multiple barrier approach
  - Standard technologies found in water treatment plants all over the world.
  - Addition of reverse osmosis to remove salinity.
- Solid waste products to be disposed of according to all regulations.
  - Alternatively, could be piped to Haverstraw Joint Regional Sewage Treatment Plant.
- Concentrate would be combined with the freshwater effluent of the sewage plant to match the salinity of the river.

Proposed Water Treatment Process, cont'd



Project Benefits

- A reliable and diverse water supply portfolio
  - A supply that is less dependent on climate conditions.
- A science-based treatment process
  - Meet NYSDOH and federal EPA rules and regulations
- Cost-effective
  - Less expensive alternative than others
- Energy
  - Incorporate measures to reduce project's energy demands and carbon footprint

Project Benefits (cont.)

- Significant real estate tax revenues for the Town of Haverstraw, the North Rockland School District and the County of Rockland:

  Estimated:

  - 2016: $2.6 M
  - 2021: $3.5 M
  - 2030: $5.6 M

- Expandability
  - Plant can be expanded to keep pace with future demand, providing from 2.0 mgd to 7.5 mgd of purified drinking water.

- Environmental impacts
  - Significantly less than the next best alternative, the Ambrey Pond Project

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