

New York State Environmental Quality Review Act (SEQR)

FINAL SCOPING DOCUMENT

For a Draft Environmental Impact Statement (DEIS)

United Water New York, Haverstraw Water Supply Project

Town of Haverstraw, Rockland, NY

SEQR CLASSIFICATION: TYPE 1

LEAD AGENCY: New York State Department of Environmental Conservation
Region 3
21 South Putt Corners Road
New Paltz, NY 12561-1620

LIST OF INVOLVED AGENCIES

- Town of Haverstraw Town Board
- Town of Haverstraw Planning Board
- Town of Haverstraw Zoning Board of Appeals
- Town of Haverstraw Architectural Review Board
- Town of Haverstraw Highway Department
- Town of Stony Point
- Rockland County Public Health Department
- Rockland County Highway Department
- Haverstraw Joint Regional Sewer Board
- New York State (NYS) Department of Environmental Conservation
- NYS Department of Health
- NYS Office of General Services

LIST OF INTERESTED AGENCIES

- Rockland County Solid Waste Management Authority
- NYS Department of Public Service
- NYS Department of State

- NYS Office of Parks, Recreation and Historic Preservation
- United States (U.S.) Army, Corps of Engineers
- U.S. Fish & Wildlife Service
- U.S. Coast Guard
- U.S. Environmental Protection Agency
- U.S. Department of Commerce, National Marine Service Fisheries

Introduction

This Scoping Document is adopted by the NYS Department of Environmental Conservation (DEC), as lead agency for the environmental review of the proposed United Water New York, Inc., (UWNY) Haverstraw Water Supply Project (water supply project) under the NYS Environmental Quality Review Act (ECL Article 8; “SEQR”). This document is intended to serve as the foundation for the identification and evaluation of all potentially significant adverse impacts that are pertinent to the proposed action, and to identify appropriate mitigation measures including available alternatives. It is also intended to eliminate consideration of any impacts that are irrelevant or non-significant.

Description of the Proposed Action

The project is a proposal by UWNY, a United Water Resources Inc. (United Water) company whose ultimate parent is Suez Environnement (Suez), to construct a multi-facility water supply project in the Town of Haverstraw, New York, to produce potable water from the Hudson River. The project would withdraw up to 10 million gallons per day (mgd) of water from the Hudson River. The proposal includes: a raw water intake unit and pumping station that would be located in and along the Hudson River, near a dock operated by U.S. Gypsum; a water treatment plant with desalination capability which would be located upslope, on lands of the former Haverstraw Landfill; a raw water transmission line between the two facilities; potable water main route(s) connecting the water treatment plant to existing water utility infrastructure; and pipelines to transmit effluent from the water treatment plant to the Haverstraw Joint Regional Sewage Treatment Plant (regional sewage plant). A temporary pilot intake and desalination operation will be constructed and operated for a 12-18 month period to gather data in support of design and operation assessments and decisions.

General Scoping Considerations

DEC, as lead agency, has determined that the proposed UWNY water supply project may have a significant adverse impact on the environment and a Draft Environmental Impact Statement (EIS) must be prepared. Significant environmental issues which the DEC has preliminarily identified include, but are not limited to: effects on aquatic species and habitats; water quality in the reach of the Hudson River where the intake is proposed; water supply allocation, including cross-watershed transport; suitability of the landfill site as the location for the water treatment plant; ability of the regional sewage plant to handle the proposed effluent; energy demands of pretreatment, desalination and treatment technologies, including greenhouse gas (GHG) and climate change implications; and a comparison of impacts and viability of possible alternatives to desalination for providing water supply augmentation in the UWNY service area, including demand reduction.

DEC conducted two public scoping meetings on May 7, 2009, from 1:00 p.m. to 4:30 p.m. and 6:30 p.m. to 9:30 p.m. The scoping meetings were held at the Haverstraw Town Hall, One Rosman Road, Garnerville, NY 10923, in order to identify issues of public concern and permit inclusion of relevant, substantive public issues in the final written scope. Written comments were accepted until May 22, 2009.

Contents of the DEIS

UWNY prepared and submitted a document to DEC and other involved and interested agencies titled, "Haverstraw Water Supply Project, Draft Environmental Impact Statement, United Water New York, September 26, 2008". DEC, as lead agency, treated that preliminary draft EIS as the draft scope for the Water supply project. The following outline identifies topics which should be added to or expanded upon in developing the Draft EIS, and follows the chapter sequence of UWNY's preliminary draft EIS. Accordingly, the Final Scoping Document which will govern content and preparation of the Draft EIS for the proposed UWNY Haverstraw Water Supply Project is composed of this document added to the preliminary draft EIS of September 26, 2008. The Final Scoping Document, including the full preliminary draft EIS, will be made available via the DEC Website at <http://www.dec.ny.gov/permits/6061.html> , and at www.haverstrawwater.com/deis .

ADDITIONAL INFORMATION TO BE PROVIDED

The Draft EIS will expand upon the preliminary draft by including the following topics.

1. The discussion of need for the proposed action and anticipated demand for water beyond 2015 will be expanded. This discussion will specifically include:
 - Population growth projections for the UWNY Rockland County service area assuming full build-out under existing as-of-right zoning; projected market conditions and environmental factors that constrain development (such as the presence of wetlands) may also be considered. The methodology for the analysis will be presented;
 - Demand growth projections on which the NYS Public Service Commission (PSC) order of December 2006 was based, including a synopsis of the methodology used by the PSC to develop those projections; and
 - All existing UWNY water conservation and leakage management programs, including quantification of possible water savings achievable by 2015.

2. The discussion of the existing water supply system for the UWNY Rockland County service area will be expanded. This will include:
 - Description and quantification of the system's current capacity and safe yield;
 - Water supply permit conditions that affect the system;
 - Descriptions and analyses of connections with other interconnected water supply systems of United Water, including:
 - A diagram or model that provides an explanation of the relationship of all water supply sources and delivery systems that are interconnected water supply systems of United Water in both New York State (NYS) and New Jersey (NJ); and
 - A descriptive listing of all existing water sharing agreements between and among United Water systems;
 - Obligations to support stream flows, including each waterbody supported, descriptions of the release requirements and thresholds, and quantification of each required release;
 - Expanded discussion of limits to siting new wells;
 - Water production volume records for the prior ten years, including analyses to accurately depict how the management and allocation of water supplies within the interconnected water supply systems of United Water has historically affected the

available water resource and production rate within each component water supply system;

- Provide anticipated rates of water production from the proposed water treatment plant at differing times of the year, in response to fluxes in the hydrologic cycle (drought v. abundance), and in response to management of or releases to other water systems controlled by United Water in both NYS and NJ;
 - Analyze water allocation and balances of Hudson River water, within the UWNY Rockland County service area, and across the interconnected NYS and NJ United Water entities, specifically including:
 - Report and assess results from the initial year's filings of all reportable withdrawals from the Hudson River below the Troy Dam, per ECL Art.15 Title 33 (effective Apr.1, 2009); and
 - Identify and analyze the conditions under which augmentation of the UWNY Rockland County service area's water supply with Hudson River water could lead to direct export of Hudson River water to other watersheds (directly or via wastewater treatment plant discharge), or to that Hudson River water supply enabling export of other NY waters outside of NY state waterways; and
 - Fully explain the management of Lake DeForest water levels, including legal requirements as well as any operational demands generated by interrelationships of the interconnected NY and NJ United Water entities, specifically:
 - Analyze implications for Lake DeForest water level management if UWNY Rockland County service area's supply is augmented by the proposed water supply, as well as by each of the other evaluated supply alternatives.
3. The analyses of the United Water peak water commitments and the short-term water supply program will be quantified, updated and expanded, including but not limited to:
- Effectiveness in meeting safe yield; and
 - Description and evaluation of the effectiveness of the Potake Pond project for augmenting flow in the Ramapo River.
4. Expand and clarify the discussion of the PSC December 2006 Rate Order, including:
- Provide a plain-language summary of the joint proposal upon which the proposed water supply project is based;
 - Summarize each party's primary contentions, including supporting documentation, where appropriate and available;
 - Provide a plain-language summary of the PSC December 2006 order; and
 - Describe and analyze the reasons that the rate case order did not allow consideration of water conservation and efficiency as crediting toward the requirement for increased water volume.

5. Provide a discussion of UWNYS corporate status, and describe the authority of PSC, NYS Department of Health, DEC, and other relevant agencies to maintain regulatory control of water resources of the State in light of that status.

ADDITIONAL INFORMATION TO BE PROVIDED

The Draft EIS will expand upon the preliminary draft by including the following topics.

1. Provide additional discussion and documentation of the site selection process for the proposed water treatment plant and intake facility. This information should be coordinated with the expanded discussion of potential restrictions on the landfill site to be provided in Chapter 10 as well as with discussions of project alternatives to be provided in Chapter 18.
2. The discussion of existing water quality of the Hudson River, and the effects on that water quality from relevant industrial or municipal wastewater discharges and other relevant activities, will be expanded. Specific information to be provided will include:
 - Based on data from prior operations by U.S. Gypsum, analyze the potential for impacts on intake water quality resulting from periodic U. S. Gypsum dredging:
 - Describe frequency, depth, and areal extent of dredging allowed by U.S. Gypsum's permit;
 - Provide maps or plans showing location of dredging areas relative to the location of the proposed in-river intake structure;
 - Include and assess available information on water and dredge spoil quality collected during previous dredging activities; and
 - Describe physical and operational measures which could be implemented to avoid adverse effects on intake water quality related to dredging operations, including but not limited to modifying operations at the intake or water treatment plant during dredging operations.
 - Assess potential contaminants reaching the intake site as a result of upstream dredging of PCBs, including data from the proposed pilot operation as well as any water quality sampling data available from the PCB dredging operations;
 - Evaluate possible contamination at the proposed intake site by groundwater flow from the former Haverstraw landfill, based on sampling data from landfill monitoring wells as well as sampling data from proposed intake or pilot operation; modeling may be used to augment or support conclusions, but may not be substituted for sampling;
 - Identify and assess potential contaminant load at the proposed intake site from discharges to the river by other industrial operations, including waste water treatment plants and power generation facilities; location maps and discharge profiles will be provided for all such discharges within 25 miles of the proposed water intake site, and pilot plant sampling will specifically test for constituents of those identified discharges;

- Identify and assess impacts on water quality at the proposed intake site of existing, significant non-point water pollution sources within 25 miles of the proposed intake site, including but not limited to agricultural or landscaping operations adjoining the shoreline, and storm drain discharges; and
 - Based on available water quality data and information gathered during operations of the pilot plant, provide a full chemical and contaminant profile of Hudson River water at the intake; analysis of data should reflect changes over time, including but not limited to tidal and seasonal variations as well as any effects of large precipitation or storm water flow events (such as spring runoff).
3. Analyze potential for contamination of the raw water transmission line by groundwater flow from the former Haverstraw landfill, based on sampling data from landfill monitoring wells and discussion of the design for the raw water transmission line; data from pilot plant operation may be used to augment this analysis.
4. Expand the discussion of the water treatment process by providing more detail about each step in the process, and analyzing each of the disposal options under consideration for management of pretreatment and desalination residuals and effluent. Data from pilot plant operations will be included in this analysis but need not be the sole basis for it. Specifically:
- For each pre-treatment, desalination and post-treatment step proposed for use in the full-scale water treatment plant:
 - Characterize the chemical composition of the entering water stream;
 - Describe the treatment step including chemicals and processes used as well as contaminants removed;
 - Characterize the chemical composition of the exiting process water stream;
 - Provide a complete chemical analysis of the aggregate wastes produced; and
 - Calculate the volumes of wastes produced. (If wastes will be dewatered, also calculate cubic feet of dewatered solid waste which would be produced.)
 - The analysis of contaminants and waste characteristics shall include, at a minimum, volatile organics, pathogens, pharmaceuticals, radionuclides, PCBs, mercury and other heavy metals, and pH.
 - Provide the analytical information listed above for each overall treatment protocol, combination or variant under consideration for use in the full-scale water treatment plant, including pre-treatment, desalination and post-treatment options, supported by any information derived from pilot operations;
 - For each potential waste stream identified in the two analyses above, describe available waste management alternatives, including any constraints on the ability of designated or potential solid waste or wastewater management facility/-ies to accept the wastes. Analyze any facility modifications or operational changes which could be

- required to enable either the regional sewage plant or the Rockland County Solid Waste Management Authority (Waste Authority) facility to handle the wastes generated by the water supply plant, including estimated costs for or generated by those modifications; and
- Discuss the necessity of and techniques proposed for blending of the end-product water from the proposed water treatment plant with other treated waters from UWNY's distribution system.
5. Expand and provide more detail on all safety measures proposed to be included as part of standard operations. Specifically:
- Provide additional details about the proposed monitoring and notification program, including but not limited to identification of specific parameters or contaminants which will be monitored by the proposed early detection/warning system for the intake, proposed UWNY responses, and threshold levels which would trigger those responses;
 - Describe specific measures to prevent migration of any landfill contaminants to the treatment plant site, raw water line, potable water main connections, and effluent line to regional sewage plant, during both construction and operation;
 - Explain standard operating procedures and safety protocols, including emergency response coordination with local providers, for all aspects of the water supply project; and
 - Describe anticipated emergency response protocols which would be used in an unforeseen event such as a spill in the Hudson River, unplanned release from Indian Point, floods, or other natural disaster.
6. Describe UWNY's proposed plans for operations within its service area in the event that the water supply project must be shut down, specifically including contingency plans for replacement supplies, emergency rationing, or other responses.
7. Evaluate the proposed facility's likely reliability as a water supply, including a study of comparable facilities that examines actual production vs. design capacity over time, including the percentage of downtime for repair and maintenance. Specifically:
- Provide an overview of comparable water treatment plants, and comparable desalination plants, and discuss how they may provide an indication of expected performance for the proposed project;
 - Provide available operation performance profiles for comparable plants, including annual summary tables of operating times that indicate the percentage of time that plants operated at full capacity versus operations at partial or no supply over a previous five year history; and
 - Analyze the reliability of comparable desalination plants as reliable water supplies.

The Draft EIS will expand upon the preliminary draft by including the following topics.

1. Expand the analysis of the proposed water supply project's conformity with existing plans by assessing the proposal's compatibility with existing, adopted regional, state, and national designations and plans. Specifically, identify all applicable regional, state and national designations, land use plans, and other relevant natural resource or energy plans and evaluate the consistency of the proposed project with the goals of those plans or designations. These shall include, at least:
 - Most recent NYS Open Space Plan (last adopted 2006; 2009 revision under public review as of 6/2009);
 - Most recent NYS Energy Plan (last issued 2002; under revision as of 6/2009);
 - Hudson River Estuary Action Agenda;
 - Greenway Compact, Smart Growth Principles, and land use plans;
 - Hudson River Valley National Heritage Area Program;
 - Water Resources Planning Council - - "Delaware-Lower Hudson Region Water Resource Management Strategy, January 1989" (or more recent revision);
 - Ramapo Watershed Intermunicipal Council goals and initiatives;
 - Governor Paterson's "45 X 15" initiative;
 - U.S. Mayors' Climate Protection Agreement, as adopted by municipalities within the UWNY Rockland County service area;
 - NYS "Climate Smart Community" pledge, as adopted by municipalities within the UWNY Rockland County service area; and
 - Final Report of the New York Oceans and Great Lakes Ecosystem Conservation Council, *Our Waters, our Communities, Our Future: Taking Bold Action Now to Achieve Long-term Sustainability of New York's Ocean and Great Lakes*

In evaluating consistency of the project with any designation or plan, specifically address recurring goals of sustainability and conservation of water, land, fish, wildlife and air resources; protection of marine resources, coastal resources, wetlands, estuaries, and shorelines; promoting sound practices for river valleys and other uniquely valuable areas; preservation of natural beauty and scenic areas; and reductions of waste generation and energy consumption.

ADDITIONAL INFORMATION TO BE PROVIDED

The Draft EIS will expand upon the preliminary draft by including the following topics.

1. Revise the rendering of the water treatment plant and site to conform the drawing of the projected plant to narrative and plan specifications for the plant, and to reflect existing site conditions at and surrounding the proposed plant site.

ADDITIONAL INFORMATION TO BE PROVIDED

The Draft EIS will expand upon the preliminary draft by including the following topics.

1. Compare projected increases in water rates as a result of the proposed water supply project with projected rates for other feasible and reasonable long-term supply alternatives. This analysis will include a discussion of potential effects on water rates for the desalination option based on future fluctuations in the price of electricity.
2. Assess effects on relative costs to users for the proposed water supply project and other feasible and reasonable long-term supply alternatives if potential additional fees for water withdrawals are imposed (*see* ECL Art. 15 Ch. 33, and background memos). Specifically include outcomes of any consultations or agreements with any NYS agencies concerning such fees or payments for private withdrawal of a public resource.

ADDITIONAL INFORMATION TO BE PROVIDED

The Draft EIS will expand upon the preliminary draft by including the following topics.

1. Expand and update the geology and seismology analysis of the proposed water supply project, and any reasonable and feasible alternatives, based on the most current United States Geologic Survey (USGS) seismic hazard maps. The expanded discussion will evaluate potential risks to each component of the proposed water supply project associated with potential seismic activities. Where feasible, analyses should be supported by maps or diagrams.
2. Summarize the data, conclusions and recommendations of the approved report, if available, from the Rockland County Water Resource Assessment, being finalized by the USGS as of 6/2009. Specifically, re-analyze the ability of the evaluated resources to meet the projected water demands of the UWNY Rockland County service area to 2015 and beyond using that information.

ADDITIONAL INFORMATION TO BE PROVIDED

The Draft EIS will expand upon the preliminary draft by including the following topics.

1. Expand the analyses of potential impacts of construction of the proposed intake on aquatic resources as follows:
 - Provide more precise delineations of habitat areas for the species which overwinter in Haverstraw Bay;
 - Characterize additional distinct or significant aquatic habitat areas and the species which use them, in the vicinity of the proposed intake location;
 - Evaluate potential effects of the intake construction on each these species and habitats, including but not limited to identifying vulnerable life stages or species, essential habitat areas, and critical seasons; and
 - Provide specific details as to the timing of piling and dredge works for the intake facility and assess species-specific impacts based on that timing.

2. Expand the analysis of potential impacts of operation of the proposed intake on aquatic resources:
 - Based on data in the *Hudson River Annual Year Class Reports*, augmented by population and habitat analyses from Ch. 9, #1, above, describe the species, life stages and sizes of aquatic organisms likely to use the habitat at and around the proposed intake location, including any regular tidal and seasonal patterns or fluctuations;
 - Analyze and predict potential for entrainment and impingement by the proposed water supply project intake for each of the species and life stages as identified above;
 - Conduct an entrainment study to further investigate the effectiveness of the 2 mm wedgewire screen proposed for use during full-scale operations to exclude ichthyoplankton; sampling windows will be selected based on the *Hudson River Annual Year Class Reports* analysis above; initial results may be reported while additional testing continues; and
 - Based on the literature review supplemented by early information from the entrainment study, describe and quantitatively assess the probable effectiveness of the proposed full-scale water supply intake's entrainment and impingement protection measures.

3. Based on available information, assess commercial, subsistence and recreational fishing pressure in the vicinity of the proposed water supply intake, and estimate potential impacts of both construction and operation of the intake on those fishing uses.
4. Based on available data and the entrainment study described above, provide a more extensive analysis of potential cumulative impacts to fisheries of the proposed water supply intake by evaluating losses of key species within the context of current losses due to impingement and entrainment from other existing water withdrawals in the lower Hudson. Additionally, assess potential additional losses or long-term impacts to fisheries or the Haverstraw Bay Significant Coastal Fish and Wildlife Habitat as a result of altered regional sewage plant discharges in combination with existing and proposed water supply project intakes. Based on the above and readily available scientific and economic literature, estimate the total number of fish lost and estimate the value of potential fisheries and habitat losses based on generally accepted valuation systems.
5. Evaluate potential justification for and impacts of reclassifying the Hudson River in Haverstraw Bay as a drinking water source, including but not limited to:
 - Provide historic water quality data (20 year minimum) for the reach of the Hudson River including Haverstraw Bay which is currently classified as “SB” under NY’s water quality classification standards;
 - Generally describe any wastewater discharges added or discontinued within 20 miles of the proposed water supply intake for same period of record for which historic water quality data can be provided;
 - Analyze potential impacts on holders of existing NY State Pollutant Discharge Elimination System (SPDES) or federal EPA National Pollutant Discharge Elimination System (NPDES) wastewater permits for discharges within or near the reach which could be re-classified, specifically addressing the consistency of the terms of major discharge permits, such as that for the Indian Point power plant and municipal wastewater discharges, with such a reclassification, and generally identifying likely changes which might be necessary in the terms of those discharge permits should a reclassification occur; and
 - Describe and analyze potential impacts to other Hudson River users resulting from re-classifying Haverstraw Bay a drinking water source.

ADDITIONAL INFORMATION TO BE PROVIDED

The Draft EIS will expand upon the preliminary draft by including the following topics.

1. The boundaries of the area covered by consent orders related to the former Haverstraw Landfill include the proposed site for UWNY's water treatment plant. Explain and analyze the actual suitability of the site for that use, including but not limited to an analysis of legal constraints the prior landfill use may place on future uses of the site; physical limitations which the prior landfill use or closure treatments may impose on the proposed use of the site; and potential for any form of contamination from the proposed landfill to affect any phase or facility of the water supply project. As part of this evaluation, the potential for landfill gases such as methane and hydrogen sulfide to migrate into enclosed structures associated with the proposed site use, and the associated health and safety risks, must be addressed. Impacts of the proposed site use on the closed landfill must also be explained and evaluated, including potential changes in surface drainage, site hydrology, physical integrity of the landfill cap, groundwater monitoring wells, and the ability of the landfill's responsible party to carry out required post-closure monitoring and maintenance activities.

2. Based on the expanded discussion of operating procedures at the water treatment plant to be provided in Chapter 2, discuss all chemicals that would be used in each phase of water treatment, including:
 - A sequential, comprehensive description of each treatment process or step indicating chemical additions at, and waste stream from each step;
 - Specifications for handling, labeling and storage of process chemicals;
 - Descriptions and chemical analyses of process waste products as well as any aggregated post-treatment wastes which UWNY proposes to create for waste management purposes, including effluents, dewatered sludges, and other wastes;
 - Detailed discussions of handling and proposed disposal of waste products, including any necessary pretreatment as well as specific disposal methods and facilities proposed to be used; if multiple waste management options are still under consideration, provide this information for each.
 - Analyze potential disposal options and facilities for water treatment plant wastes and effluent and address potential impacts on their receiving facilities and surrounding ecosystems. Include assessment of each potential disposal facility's capacity to handle the amount of wastes to be generated, plus calculations of the costs associated with disposal of all desalination waste and byproducts, including whether those costs

would be borne by UWNY and its water users or by publicly-operated disposal or treatment facilities.

3. Based on process descriptions and analyses in Chapter 2, expand the discussion of the potential use of the regional sewage plant to treat water treatment plant wastes by:
 - Characterize, in detail, the predicted composition of the potential waste stream from the water supply treatment plant to the regional sewage plant;
 - Analyze and assess the ability of the regional sewage plant to process all effluent constituents, including discussing whether facility or permit modifications (or both) would be necessary for the regional sewage plant to treat the wastewater stream;
 - Compared to current operations, predict and characterize likely changes in the composition of the permitted discharge from the regional sewage plant should it accept wastes, including brine, from the water treatment plant;
 - Assess potential impacts to the Hudson River and its resources of discharge of altered regional sewage plant effluent including added volume and constituent from the proposed project, and specifically considering contents and concentrations of brine's non-saline components, and their potential impacts on aquatic biota;
 - Analyze changes in chemical composition of sludge and other wastes from the regional sewage plant based on constituents which would be added by treating wastes from the water supply plant; and
 - Assess disposal constraints and options for management or disposal of regional sewage plant waste products based on how their composition would be altered by processing water treatment plant wastes.

4. Evaluate potential impacts to Waste Authority facilities which now handle regional sewage plant wastes. The evaluation will:
 - Identify potential effects of added salt and chemical contaminants from the proposed project in the regional sewage plant's wastes on the Waste Authority's equipment and infrastructure;
 - Analyze potential composition changes in the Waste Authority's recycled end product, compost, because of the process wastes generated by the proposed water treatment plant;
 - Assess the continued ability of the Waste Authority to accept regional sewage plant wastes if water supply project-generated waste constituents result in compromised compost composition based on current requirements; and
 - Assess potential changes in the Waste Authority's ability to deliver existing services, including impacts on County-wide rate structure, if project generated waste

constituents prevent the Waste Authority from accepting regional sewage plant wastes.

5. Evaluate potential impacts of flooding on the proposed facilities, with emphasis on the intake site, including:
 - Potential for contamination of each component facility during a flood event;
 - Available means to avoid that contamination; and
 - Potential for predicted increases in sea level rise related to global climate change to increase the probability or frequency of such flooding events.

6. Evaluate potential contamination to the raw water supply line and the processed water distribution lines along the entire route of each, specifically analyzing potential for contamination and means to avoid such contamination, based on each proposed route and considering at least the following possible contaminant sources:
 - U .S. Gypsum facilities and operations;
 - Insul-X/Former Kay-Fries Inc. site;
 - Town of Haverstraw Landfill (former and present); and
 - Regional sewage plant facilities and operations.

7. Based on the detailed characterizations of water treatment process wastes to be developed in Chapter 2, specifically assess the fate of any detectable PCB contaminants throughout water treatment and waste disposal. Specifically discuss available disposal options (including landfills, hazardous waste landfills, composting, and/or incineration) related to actual levels of PCB at each process or waste management step, including legal as well as technical constraints. Provide sufficient background on general properties of PCB for the general reader to understand the alternatives assessed.

8. Evaluate potential for water supply project components to contaminate their surroundings, and precautions to be taken to avoid such contamination. Elements to be considered include:
 - The pump assemblies at the intake station, particularly regarding releases of lubricants, fuels and the like during normal and high water episodes;
 - Water treatment plant buildings and process components, particularly considering potential ground contamination from below-grade chlorine contact basins, process chemical storage, and finished water storage reservoirs; and
 - Evidence that bedrock wells in the vicinity of the plant are isolated from the unconsolidated overburden aquifer.

ADDITIONAL INFORMATION TO BE PROVIDED

The Draft EIS will expand upon the preliminary draft by including the following topics.

1. Expand on the discussion of the regional sewage plant in Chapters 2 and 9, by describing the existing and available capacity of the sewage treatment plant; future expansion capability of that plant; and ability of the sewage treatment plant to treat all of the regulated potential components of waste water which would be produced by the water supply project (as identified and quantified by the analyses required for Ch. 2 and 9, specifically including but not limited to data from pilot plant tests). Also address potential legal and economic consequences if the regional sewage plant were to fail to meet applicable water quality standards or SPDES permit conditions due to effluent received from the proposed water treatment plant.
2. Analyze the availability of alternative energy sources to provide electricity to the proposed project, including but not limited to potential for onsite generation; assess how emissions from the project's energy source(s) would be affected based on which energy source(s) are used; and describe which energy source(s) will be proposed for final project design.
3. Expand the Energy section to explain in greater detail how Orange & Rockland Utilities would supply or deliver the electricity to meet the project's electrical demand. Based on information provided by Orange & Rockland Utilities, discuss any infrastructure requirements required to provide electricity to the water supply project, particularly the water treatment plant, including the need to construct new or upgraded substations, transmission lines, or distribution lines.
4. Additionally, evaluate how the required electricity and means to supply it will impact congestion on the Mid-Atlantic National Transmission Corridor.

The Draft EIS will expand upon the preliminary draft by including the following topics.

1. Based on responses in Chapter 3, item 1 (analysis of the proposed water supply project's conformity with existing plans), specifically consider and evaluate consistency of the proposed project with the energy use and climate change goals of each plan which contains those elements.
2. Consider possible increases in salinity at the location of the proposed water intake which are projected to occur as a result of unavoidable, ongoing global warming over the expected operating life of the proposed project. Specifically analyze any resulting process changes as well as effects on electricity consumption over the projected life of the water supply project based on possible need to treat source water with changed saline content. Based on those projections, calculate any increased indirect greenhouse gas (GHG) generation as a result of increased electricity demand.
3. The DEIS will include in the evaluation of global climate change any additional GHG emissions from the regional sewage plant resulting from processing effluent from the proposed water supply project
4. The DEIS will include an evaluation of the risk of greater flooding to the proposed facilities as well as the facilities' impact upon the floodplain, considering predicted sea level rise generated by global climate change.

ADDITIONAL INFORMATION TO BE PROVIDED

The Draft EIS will expand upon the preliminary draft by including the following topics.

1. The analysis of consistency with coastal zone policies in the DEIS will be revised to reflect changes to the scope of the enhanced analyses provided in other chapters of the DEIS, as appropriate.
2. In coordination with Chapter 18, Item 19, ensure that the discussion of alternative sites for the proposed water treatment plant and intake facilities considers and evaluates locations outside of the Haverstraw Bay Significant Coastal Fish and Wildlife Habitat.

ADDITIONAL INFORMATION TO BE PROVIDED

The Draft EIS will expand upon the preliminary draft by including the following topics.

1. The discussion of the No Action Alternative will be expanded to clearly describe all component projects and tasks being undertaken as part of United Water's short-term water supply program.
2. Describe potential measures for enhanced water conservation and implementation of green infrastructure in the UWNY service area as an alternative to the Proposed Action. This may include, but will not be limited to, relevant case studies of planning and legislative measures that have been implemented in study communities (the communities) that were intended to conserve water, including the following:
 - Discuss structural and operational measures implemented in the study communities for the purposes of water conservation;
 - Evaluate the outcomes of efforts in the communities in terms of actual water savings achieved from campaigns to promote water conservation among consumers;
 - Assess land use regulations governing the communities which were intended to alleviate future deficiencies or accommodate future water demands, and discuss the potential applicability and effectiveness of similar regulations for the UWNY Rockland County service area, particularly considering the level(s) of government with appropriate authority to enact and enforce such regulations;
 - Assess the potential applicability and effectiveness of implementing green building and infrastructure codes with water conserving elements for structures and landscaping, which could be enacted by municipalities within the UWNY Rockland County service area; and
 - Evaluate potential water demand reductions from incentive based alternative pricing models, such as increased cost for greater water consumption and discounts for minimization of consumption. Case studies from the communities where alternative pricing models have been implemented should be referenced.
3. Evaluate potential water savings in the existing United Water service area system from feasible actions to minimize existing water losses, including but not limited to losses through leaks in the distribution system.

4. Expand the Reuse of Wastewater Alternative to describe the possibility of distributing treated water (i.e., gray water) from Rockland County wastewater Treatment plants for industrial use or private irrigation. In addition, consider the possibility of recharging the aquifer to contain and supply grey water as well as water that could be treated, including volume estimates.
5. Evaluate the alternative of installing an additional gray water piping network for treating and delivering captured runoff (i.e., rain water) for irrigation or other non-potable uses. This alternative will also consider the combination of gray water and rain water for irrigation or other non-potable uses, including aquifer recharge.
6. Evaluate the Suffern Quarry, Tompkins Cove Quarry, and Congress Haverstraw Quarry, each independently as well as cumulatively, for potential use as water supplies. Evaluation of each quarry will include:
 - More thorough discussion of the factors affecting the potential use of the quarry;
 - The ability, including volume estimates, to use the quarry to capture and store stormwater; and
 - The ability of waters directed to the quarry to recharge aquifers, including volume estimates.
7. A thorough investigation of the implementation of preliminary draft EIS Alternative F, Use of the Suffern Quarry, was not provided due to a claimed *potential* conflict with “possible use” of the quarry for flood mitigation by the U. S. Army Corps of Engineers (USACE). Include a more thorough discussion of the potential use of the quarry for flood mitigation, including information concerning land ownership, probability of use by the USACE, the feasibility of dual-purpose use of the quarry for flood mitigation and reservoir storage, and any anticipated effects on coastal uses and resources of quarry use for flood or reservoir storage.
8. Include a discussion of surface water storage options other than Ambrey Pond, with estimates of achievable water volumes, including:
 - Capture and storage of high water spilling over reservoirs for either direct use or recharge of aquifers.
9. The discussion of the Hudson River Flood Skimming alternative will be expanded to describe the potential storage options for this alternative other than surface water storage, such as water towers or underground storage.

10. The DEIS will include an assessment of the Ramapo River High-Flow Skimming Alternative as included in the 1979 Ambrey Pond Reservoir Draft Environmental Impact Statement (Ambrey Pond DEIS, Alternative G). Update information to enable current comparison of this alternative to the proposed water supply project.
11. Additional detail on the Ambrey Pond Alternative will be provided, including identification of any remaining private properties which would still need to be acquired; estimated costs of those acquisitions; the required buffer area; life-cycle (operational and maintenance) costs of this alternative; and effects on water rates.
12. The discussion of the Ambrey Pond Alternative will include background concerning the evolution of the design for this alternative, specifically including reasons that the larger reservoir originally proposed was later reduced in size.
13. Evaluate the lands currently owned by UWNY (or any related business entity/-ies) surrounding the existing Upper and Lower Ambrey Ponds and within the designated buffer area of the potential reservoir area, specifically:
 - Provide a current land use and general cover type map, noting such things as successional and mature woodlands, wetlands, agricultural areas, developed/settled lands, and any highly disturbed or waste areas;
 - Provide an inventory of any rare/special concern, threatened or endangered species (plants and animals) potentially found or known to occur on the lands; and
 - Describe existing use by wildlife, including resident and migratory species.
14. The description of the Ambrey Pond Alternative (preliminary DEIS Alternative K) indicates that the Ramapo Fault alignment is in close proximity to the proposed dam for the Ambrey Pond Reservoir, and that there is a possibility of fracture in the event of a large earthquake. The DEIS should include more information regarding the alignment of the proposed dam and impoundment relative to the fault; the potential or likelihood of fracture; associated hazards of such an event, including identification and characterization of downstream hazard areas; and any additional effects of such an event on coastal uses and resources.
15. Evaluate the potential of alternative management practices of the reservoir system in Rockland County, specifically including modifying Lake Deforest water releases to supply more water to Rockland County.

16. Evaluate water conservation and management strategies which could be implemented in the Hackensack watershed, with the goal of maintaining higher flows in the Hackensack River and, therefore, resulting in less discharge of water from the Lake Deforest Reservoir to New Jersey waters. Include an examination of NYS and NJ water release laws as well as any interstate agreements, for the possibility of altering water releases to NJ.
17. Discuss possible alternative or beneficial uses for wastewater, solid wastes and brine produced by the water treatment plant.
18. Utilizing chapter 16 of the preliminary draft EIS as a model, specifically including tables 16-2 and 16-3, provide an analysis of energy consumption and potential GHG emissions from each feasible and reasonable alternative, and expand the discussion of comparisons among alternatives of energy use and GHG emissions.
19. The discussion of alternative sites for the proposed water treatment plant and alternative sites for the proposed intake within the river will be expanded, and will include a discussion of intake locations considered outside of the Haverstraw Bay Significant Coastal Fish and Wildlife Habitat as well as bases for choosing the former Haverstraw Landfill as the proposed water treatment plant site.

ADDITIONAL INFORMATION TO BE PROVIDED

The Draft EIS will expand upon the preliminary draft by including the following topics.

1. Include a discussion of a reasonable range of potential future uses of the Ambrey Pond lands, including parkland, if the proposed Haverstraw Water Supply Plant is completed.
 - For each of those possible uses, address potential impacts on water supply demand, flooding, aquifer recharge, and loss of forest lands (including carbon sink value).
 - Discuss viable management alternatives for these lands should the desalination-based water supply project proceed; and
 - Assess predictable potential impacts of each management option, including relative probability of each occurring, plus impacts of each on land use, wildlife, rare, threatened or endangered species, and GHG gas sequestration (due to potential loss of carbon sinks).
2. The potential effects of the proposed water supply project on drinking water supplies in other watersheds will be considered, and the relationships of the water supplies in surrounding watersheds will be discussed (in coordination with the expanded discussion to be provided in Chapter 1).
3. Analyze the impacts of the proposed water supply project on communities outside of the NYS boundary.
4. Discuss the potential effects of the proposed water supply project on flooding in the watershed and surrounding area.

ADDITIONAL INFORMATION TO BE PROVIDED

The Draft EIS will expand upon the preliminary draft by including the following topics.

1. Discuss all anticipated growth-inducing effects resulting from the Proposed Project, including:
 - The capacity of all existing public services and facilities to support anticipated population growth based on growth projections as described in expanded Chapter 1;
 - An assessment of population growth and corresponding water demand as a result of the project, with an evaluation of the role of the proposed project in facilitating all potential developments in the region that cite or otherwise rely on the proposed water supply project as a long-term source of water; and
 - An evaluation of the potential effects of induced growth upon water demand, flooding and aquifer recharge in the United Water service area.

2. Evaluate the effects that additional growth enabled by the water supply project would have on air quality and traffic issues within the proposed water supply project's service area, including potential for exacerbating traffic-based GHG generation.

ADDITIONAL INFORMATION TO BE PROVIDED

The Draft EIS will expand upon the preliminary draft by including the following topics.

1. Based on additional and expanded analyses of potential impacts as required within the prior and following chapters, re-assess the potential for the proposed water supply project to result in unavoidable permanent, significant adverse environmental impacts.

ADDITIONAL INFORMATION TO BE PROVIDED

The Draft EIS will expand upon the preliminary draft by including the following topics.

1. Evaluate the impact on rates to consumers for water from desalination versus all other alternatives, specifically including the ability of residents in identified environmental justice communities of concern within the UWNY Rockland County service area to support long-term rate increases.
 2. Provide information on local subsistence anglers who may utilize the river in proximity to the proposed project. Evaluate how subsistence fishing activities may be impacted. Explain information sources; non-statistical, observational methods may be used.
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