

US EPA ARCHIVE DOCUMENT



Preparing for Climate Change at New England Wastewater Utilities

U.S. EPA | CLIMATE CHANGE OUTREACH AT EPA NEW ENGLAND

WATER RESOURCES:

Future changes to temperature and precipitation patterns will have a significant effect on the way we manage our water resources. Based on the Northeast Climate Impacts Assessment report from 2006, New England will experience the following over the next century: longer, hotter, drier summers; shorter, warmer winters; fewer rain events with more frequent and intense storms; and, rising sea level.



INTRO:

Climate change is already occurring and is expected to have a wide range of consequences on wastewater treatment in New England. By considering the potential effects of climate change, we can make improvements today to decrease our risks in the future. The following information is intended to assist New England wastewater utilities in preparing to effectively anticipate and respond to the relevant issues that they can expect to face in the coming century.

IMPACTS ON WASTEWATER UTILITIES:

Wastewater utilities should be aware of the following impacts that climate change will have on their sector:

- Increased risk of flooding
- Increased likelihood of combined sewer overflows (CSOs)
- Higher risk of inundation and storm damage for coastal facilities
- Higher effluent treatment levels

WHAT WASTEWATER UTILITIES CAN DO:

Preparing for the impacts of climate change begins by first identifying the particular risks and concerns for your utility (e.g., insufficient capacity to produce more highly-treated effluents, heightened risk of flooding, increased likelihood of combined sewer overflows, etc.). You can find models that work on small geographic scales (i.e., downscale models) at <http://northeastclimatedata.org>. Once this is done, there are certain cost-effective measures that you can take to minimize those risks while providing additional benefits to your utility.

You can use opportunities such as periodic larger-scale system evaluations and the contemplation of planned upgrades or new construction to incorporate

climate change considerations into your facility design. For example, the Massachusetts Water Resources Authority's Deer Island Treatment Plant was built on an elevated foundation to accommodate projected sea level rise.

Compiling an inventory of utility assets (i.e., any component with an independent physical and functional identity and age, such as pumps, motors, intakes, tanks, or mains) can help you determine the location, importance and condition of each asset. This knowledge will ultimately lead to an improved response in emergency situations, more predictable maintenance and capital replacement budgets, and improved security of your system.

Implementing measures for energy efficiency can help to both save money and reduce greenhouse gas emissions. You can make your utility more energy efficient by making improvements to infrastructure (e.g., pumping stations, collection systems), getting an energy audit to improve efficiency, or by using renewable energy sources.

Investing in green infrastructure projects, such as low impact development (LID), can help manage wet weather to improve water quality, reduce hydraulic loads on combined sewers, and reduce the risk of flooding. More information on green infrastructure projects can be found at http://cfpub.epa.gov/npdes/home.cfm?program_id=298.

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