

ENVIRONMENTAL LAW

Expert Analysis

New York's New Sea Level Rise Projections Will Affect Land Use, Infrastructure

As required by a 2014 state statute, the New York State Department of Environmental Conservation (DEC) has issued official sea level rise projections effective February 22. They reflect a range of possible scenarios; at the high end, sea level in the New York City area could rise 75 inches (6.2 feet) by the year 2100.

Now that they are embodied in a formal regulation (6 NYCRR Pt. 490), these projections may begin to affect a broad range of decisions in building and infrastructure siting, design, construction and materials; insurance and financing; securities disclosure; and estate planning.

Projections

DEC issued three separate sets of projections—one each for New

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York City and the Lower Hudson region; the Mid-Hudson region; and the Long Island region. However, they differ only slightly from each other. For each region there are five

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ranges of projections, ranging from low to high. The low projections reflect historical rates of sea level rise; but we know that these rates have increased in recent years. The high projections are associated with high rates of melting in Greenland and Antarctica and are depicted as very unlikely, though how unlikely

is not quantified. Under the high projection for the New York City/Lower Hudson region, the amount of sea level in the 2020s would be 10 inches, in the 2050s, 30 inches, in the 2080s, 58 inches, and in 2100, 75 inches. The baseline for the projections is the average level of marine or tidal water over the years 2000 through 2004.

To put this in perspective, over the last century New York City has experienced around 12 inches of sea level rise, and even that contributed to the damage caused by Superstorm Sandy in 2012.

Properties higher than 75 inches are not necessarily safe. Storm surge, wave action, erosion, and increased frequency and severity of events create added dangers. Moreover, the seas will not stop rising in 2100. One set of calculations cited by DEC shows that the greenhouse gases in the atmosphere today have already committed the planet to more than six feet of sea level rise, though we do not know when that

will happen. Rises well above six feet are likely, though probably not before well into the next century.

The projections are based on a study prepared by Dr. Radley Horton of Columbia's Center for Climate Systems Research and colleagues, undertaken for the New York State Energy Research and Development Authority and also known as the ClimAID report. The projections are based on the outputs of more than 20 global climate models, down-scaled to New York, and supplemented by information about ice melt that cannot yet be more rigorously included in the quantitative models.

Statutory Basis

The statutory basis for these projections is N.Y. Environmental Conservation Law Sec. 3-0319, which was enacted as part of the Community Risk and Resiliency Act (CRRRA), signed into law by Gov. Andrew Cuomo in September 2014. This section required DEC to issue the projections by Jan. 1, 2016. DEC was a little over a year late, as it issued two successive versions of the draft regulation and subjected each to a notice and comment period. The statute also requires DEC to update the projections at least every five years.

The CRRRA also added mitigation of climate risk to the criteria to be considered under the Smart Growth

Public Infrastructure Policy Act of 2010, which aims to reduce sprawl by requiring state agencies, authorities and public corporations to evaluate public infrastructure projects that they approve, undertake, support or finance for consistency with smart growth criteria. The CRRRA also requires consideration of climate change in connection with funding under the Water Pollution Control Revolving Fund; the siting of commercial hazardous waste and hazardous substances and petroleum bulk storage facilities; state acquisition of parkland; municipal landfill closure; state funding for drinking water projects; and several other programs.

DEC is now preparing a document to be called the New York State Flood Risk Management Guidance to fulfill CRRRA's requirement that DEC develop implementation guidance. It will provide a framework of flood-risk management criteria that each permit or funding program can incorporate. DEC is also preparing guidance for public infrastructure agencies for consideration of sea level rise and flooding. In further compliance with CRRRA, the Department of State is preparing model local laws that municipalities may adopt if they wish.

SEQRA

The CRRRA does not explicitly mention the State Environmental Quality Review Act (SEQRA), which requires

the preparation of environmental impact statements for state or local actions that may significantly affect the environment. However, on Jan. 20, 2017, DEC released a set of proposed revisions to its regulations under SEQRA, which have not been significantly amended since 1995. One of the proposed revisions would require that environmental impact statements must discuss "measures to avoid or reduce both an action's environmental impacts and vulnerability from the effects of climate change such as sea level rise and flooding." This will require discussion of the sea level rise projections in impact statements for projects in vulnerable areas.

Some such analysis is already being conducted. New York City's technical guidance under City Environmental Quality Review (the City's program for implementing SEQRA) has for several years called for analysis of the effect of climate change on projects, and most impact statements for coastal projects in the City and some in other parts of the state are addressing these issues. The DEC Commissioner also issued guidance in 2009 saying that when DEC is the lead agency, it should consider future climate change impacts.

Implications

DEC's projections will have much different implications for different

kinds of individuals and entities. Hazards that may not get much worse for decades may be of little concern to issuers of short-term loans and insurance, builders who are hired to erect a structure but do not retain an interest, or to short-term tenants. However, more difficult issues of risk management and fiduciary responsibility face those with longer-term interests (and their counsel), such as:

- Providers of infrastructure that is designed to be permanent (e.g., airports, highways, railroads) or at least long-lived (e.g., power plants, public housing)
- Owners of expensive facilities that could cause major damage if flooded (e.g., oil and chemical storage tanks)
- Owners of campuses intended for permanent use (e.g., universities, hospitals)
- Tenants in or contemplating long-term leases
- Trustees of estates holding real property that is intended to benefit future generations

There is a large uncertainty range for the degree of sea level rise that will occur in the latter part of the century. We know it will go up, but just how much depends on several variables that we cannot now predict, such as aspects of the dynamics of ice in the polar regions that scientists do not yet fully understand; the

urgency and consistency with which the governments of the world work to reduce greenhouse gas emissions (the most recent U.S. election not being a grounds for optimism on this point); the possible emergence of technologies that could accelerate solutions; the future development path of places like India. In the face of such unknowns, should those with long-term perspectives assume

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a rate of sea level rise at the high end of the DEC range (which itself is not literally the worst case), or something less? At what point do securities disclosures need to reflect the possibility of catastrophic losses, or of a decline in asset values due to fear of such losses?

Local planning and zoning officials will also need to consider what uses are allowable (or allowed to be rebuilt if damaged) in areas now known to have a significant risk of flooding in the decades to come. What degree of risk to land is required before a government may limit the permissible use of that land without subjecting it to a “takings”

claim? How do municipalities balance the possible reduction in tax and employment base against the risks to life and property posed by extreme flooding? How should building codes reflect these risks?

Architects, engineers and other design professionals have an obligation to take precautions against known risks. Is it enough for them to rely on building codes that may lag many years behind the science, or do they have greater obligations to the safety of those who will occupy what they design?

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