

Regulatory Impact Statement Summary
6 NYCRR Part 490, Projected Sea-level Rise

INTRODUCTION

On September 22, 2014, Governor Cuomo signed into law the Community Risk and Resiliency Act, Chapter 355 of the Laws of 2014 (CRRA). CRRA is intended to ensure that decisions regarding certain State permits and expenditures consider climate risk, including sea-level rise. Among other things, CRRA requires the Department of Environmental Conservation (Department) to adopt regulations establishing science-based State sea-level rise projections. Therefore, the Department is proposing to establish a new 6 NYCRR Part 490, Projected Sea-level Rise (Part 490). Part 490 will establish projections of sea-level rise in three specified geographic regions over various time intervals, but will not impose any requirements on any entity.

STATUTORY AUTHORITY

The statutory authority to promulgate Part 490 is found in Environmental Conservation Law (ECL) § 3-0319, which was added by CRRA. ECL § 3-0319 requires the Department to adopt regulations establishing science-based State sea-level rise projections by January 1, 2016. The promulgation of Part 490 by the Department will fulfill this statutory requirement.

LEGISLATIVE OBJECTIVES

CRRA was enacted with the purpose of ensuring that decisions regarding certain state permits, regulations, and expenditures include consideration of the effects of climate risk, including sea-level rise, and extreme weather events. Part 490 will implement one component of this objective by providing a common source of sea-level rise projections for consideration within these programs

NEEDS and BENEFITS

CRRA enumerates several permitting, regulatory and funding programs in which the applicants, the Department, or other relevant State agencies shall be required to consider future climate risk, including sea-level rise. Adoption of Part 490 will help to ensure that sea-level rise projections are incorporated into these decision-making processes in a consistent, transparent manner and will contribute to regulatory certainty.

Stakeholder Outreach

The Department conducted outreach to stakeholders in several fora prior to proposing Part 490. This outreach included interaction with the authors of various reports regarding sea-level rise in order to gain understanding of the most current and applicable science. For example, the Department held a teleconference with the authors of two reports on March 6, 2015. Moreover, the Department held individual discussions with certain particularly interested stakeholders, such as the City of New York on June 1, 2015. In addition, the Department's stakeholder outreach included five public informational and listening sessions, at which Department staff presented background on CRRA and the scientific information the Department considered in developing Part 490. These meetings were advertised through Departmental press release and in the Department's Environmental Notice Bulletin, and were held on June 23-25 at locations in Albany, New York City, and Nassau and Suffolk Counties. At these meetings, the Department received input from stakeholders on Part 490.

Summary of Projection Format

Based in part on this input, the Department proposes to adopt five projections for each of three regions of the State. The three regions of the State are Long Island, New York City and the Lower Hudson River upstream to Kingston, and the Mid-Hudson River from Kingston upstream to the federal dam at Troy. These three regions exhibit small differences in relative sea-level rise due to local conditions. The five projections for these three

regions are low, low-medium, medium, high-medium and high. These qualitative terms refer to the rate of rise, not to ultimate water levels, as warming of the Earth system has already resulted in a long-term commitment of at least six feet of global sea-level rise (Strauss, 2013¹). In other words, while there is some uncertainty regarding the precise rate at which sea level will rise, there is relative certainty that global sea level will ultimately rise at least six feet over current levels. Finally, each of these projections is presented for four different time periods: the 2020s, 2050s, and 2080s, and the year 2100.

Revisions to Part 490

The Department made substantial revisions to Part 490 in response to public comments received on the initial notice of proposed rulemaking. First, the Department substantially revised the definition of “high projection” in subdivision 490.3(i). Pursuant to this revision, in addition to being “very unlikely” to occur, the “high projection” is defined as being “associated with high rates of melt of land-based ice.” This revision is intended to acknowledge the fact that, if the high projection is reached by a given time interval, it would be associated with high rates of melt of land-based ice. Second, the Department substantially revised the definition of the term “low projection” in subdivision 490.3(m). Pursuant to this revision, in addition to being “very likely” to be exceeded, the “low projection” is defined as being “consistent with historical rates of sea-level rise.” This revision accounts for the fact that future sea-level rise is not projected to be consistent with historical trends, but is instead projected to accelerate with increased warming. In addition, the Department made changes to Sections 490.1 and 490.2 to expand upon the purpose and applicability of Part 490.

ClimAID Report

The Department’s proposed sea-level rise projections in Part 490 are based on sea-level rise projections

¹ Strauss, B. 2013. Rapid accumulation of committed sea-level rise from global warming. Proc. Natl. Acad. Sci. USA. doi: 10.1073/pnas.1312464110

included in Horton et al. (2014²), prepared for the New York State Energy Research and Development Authority, also known as the ClimAID report. ClimAID's projections are based on the outputs of more than 20 global climate models, downscaled to New York, using the Intergovernmental Panel on Climate Change's (IPCC) Representative Concentration Pathways (RCP) 4.5 and 8.5 as inputs. RCP 4.5 describes a scenario in which global greenhouse gas emissions increase only slightly before declining around the year 2040, leading to a stabilization of atmospheric greenhouse gas concentrations shortly after the year 2100. RCP 8.5 assumes no significant global emission-reduction policies are implemented and emissions increase, leading to higher atmospheric greenhouse gas concentrations.

Comparison of ClimAID Report to Other Reports

As required by ECL § 3-0319, the Department considered various sources of information in proposing to adopt projections in Part 490 based on the ClimAID report. This includes projections prepared for the National Climate Assessment and the New York State Resiliency Institute for Storms and Emergencies (RISE).

The Department has considered numerous factors in proposing to base Part 490 on the ClimAID projections rather than on more conservative, less protective projections based primarily on process modeling. First, adoption of projections based on the ClimAID report ensures that regulators, planners and others have access to projections developed specifically for New York State and accounting for regional and local factors not considered in development of global sea-level rise projections. Second, the ClimAID research was conducted by the same research team that provided the NPCC projections, using the same methodologies, which have been peer reviewed and published in established scientific journals. Third, ClimAID provides projections for the entire tidal coast of the state, including the Hudson River upstream to the federal dam in Troy, rather than just Long Island

² Horton, R., D. Bader, C. Rosenzweig, A. DeGaetano, and W. Solecki. 2014. Climate Change in New York State: Updating the 2011 ClimAID Climate Risk Information. New York State Energy Research and Development Authority (NYSERDA), Albany, New York.

and New York City. Fourth, New York City has already adopted the NPCC/ClimAID projections for its planning purposes; a State regulation based on alternative projections could create confusion among the public, planners and regulated community.

Finally, the proposed projection distribution (low, low-medium, medium, high-medium and high) constitutes a range suitable for risk-based planning and review of projects of varying projected life times and criticality. Although unlikely to occur in the more immediate future, the inclusion of higher sea-level rise projections in Part 490 allows for decision makers to consider the possibility in the context of the programs specified by CRRA.

Perhaps most importantly, the question for decision makers is not if a critical sea level will be reached, but when. Strauss (2013³) calculated that historic greenhouse gas emissions have already committed the globe to a mean sea-level rise of 6.2 feet over current levels. Even more conservative projections of rates of sea-level rise indicate sea-level rise of approximately six feet within the next 150 years. Thus, a full range of projections in Part 490 that includes higher values is appropriate to allow for consideration of a level of sea-level rise that will likely occur at some point, even if the timing of such occurrence is uncertain.

COSTS

Part 490 will not impose any costs on any entity because the regulation consists only of sea-level rise projections and does not impose any standards or compliance obligations. Therefore, there are no costs associated with Part 490. Likewise, the regulation will also not impose any additional costs on the Department or local government entities.

³ Strauss. 2013. Op. cit.

LOCAL GOVERNMENT MANDATES

Part 490 will not create any mandates for local governments, including any additional recordkeeping, reporting, or other requirements.

PAPERWORK

No additional record keeping, reporting, or other requirements will be imposed under this rulemaking.

DUPLICATION

This proposal does not duplicate, overlap, or conflict with any other federal or State regulations or statutes.

ALTERNATIVES

Alternatives to this proposal include: (1) No action, or not establishing Part 490, (2) basing the adopted projections on other scientific reports, and (3) using an alternative projection format.

- 1) No Action - Not establishing Part 490 is not an available alternative because ECL § 3-0319 requires the Department to adopt a regulation establishing science-based State sea-level rise projections.
- 2) Other Reports – The Department considered basing its proposed projections on several alternative scientific reports other than the ClimAID report, including Parris et al., (2012⁴), completed for the National Climate Assessment, and Zhang et al., (2014⁵), prepared for RISE. The Department also

⁴ Parris, A., P. Bromirski, V. Burkett, D. Cayan, M. Culver, J. Hall, R. Horton, K. Knuuti, R. Moss, J. Obeysekera, A. Sallenger, and J. Weiss. 2012. Global Sea Level Rise Scenarios for the US National Climate Assessment. NOAA Tech Memo OAR CPO-1. 37 pp.

⁵ Zhang, Minghua, Henry Bokuniewicz, Wuyin Lin, Sung-Gheel Jang, and Ping Liu, 2014: Climate Risk Report for Nassau and Suffolk, New York State Resilience Institute for Storms and Emergencies (NYS RISE), NYS RISE Technical Report TR-0-14-01, 49 pp.

reviewed and considered information contained in reports of the Intergovernmental Panel on Climate Change (Church et al., 2013⁶), New York State Sea Level Rise Task Force⁷ and the New York City Panel on Climate Change.⁸ The Department rejected basing the projections in Part 490 on any of these other reports because, among other reasons, the ClimAID report covers the entire tidal coast of the State, accounts for local and regional variations in sea-level rise, and incorporates the possibility of rapid ice melt.

- 3) Other Formats – The Department considered using a different projection format in Part 490, such as different geographic regions or time intervals. The Department is proposing Part 490 in a format that includes five projections for each of three geographic regions based on stakeholder input and because it is consistent with the format of the ClimAID report.

FEDERAL STANDARDS

There are no federal rules or other legal requirements relevant to Part 490. Therefore, this proposal does not result in the imposition of requirements that exceed any minimum standards of the federal government for the same or similar subject areas.

COMPLIANCE SCHEDULE

There is no compliance schedule required by the establishment of Part 490 because the rule does not impose any compliance obligations on any entity.

⁶ Church, J.A. 2013. Chap. 13: Sea level change, in climate change 2013: The Physical Science Basis, edited by T.F. Stocker, D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y.xia, V. Bex, and P. Midgley, pp 1137-1216. Cambridge Univ. Press, Cambridge, U.K.

⁷ New York State Sea Level Rise Task Force: Report to the Legislature. 2010. New York State Department of Environmental Conservation. 103 pp.

⁸ Horton et al. 2015. Op. cit.