COLUMBIA LAW SCHOOL
SABIN CENTER FOR CLIMATE CHANGE LAW

December 19, 2016

Mark Lowery
NYSDEC, Office of Climate Change
625 Broadway St.
Albany, NY 12233

Re: Proposed 6 NYCRR Part 490, Projected Sea Level Rise

Dear Mr. Lowery,

The Sabin Center for Climate Change Law submits these comments in support of the Department of Environmental Conservation (DEC)'s proposed sea level rise projections for New York State (6 NYCRR Part 490).

We commend DEC for proposing sea level rise projections that reflect the full range of plausible scenarios for the region. Importantly, DEC has included a "high projection" which accounts for the possibility of higher rates of sea level rise due to accelerated melting of land-based ice (71-75 inches by 2100). DEC recognizes that this projection may be "unlikely" but that the "[i]nclusion of unlikely but plausible projections provides benchmarks against which long-term decisions, e.g., those regarding critical infrastructure and land-use change, can be evaluated for low-probability but high consequence events."[1] This precautionary approach is precisely what is needed to guide planning and development in areas that will be affected by sea level rise.

Some commenters have asserted that this high projection is not plausible because it does not fall within the range of more conservative global sea level rise projections, such as those published in the latest IPCC report[2] and in a regional study that used the IPCC models to develop projections for New York State.[3] But the IPCC projections (and projections based on the IPCC models) only provide a range of "likely" sea level rise scenarios – they "focus on the central distribution rather than the high-risk tail of [global mean sea level] change" – and they do not account for the possibility of rapid ice melt.[4] Indeed, the IPCC has explicitly recognized that "there is still a 0-33% possibility of sea level rise beyond this range, and *coastal risk management needs to*

[1] NYS DEC, *Part 490, Projected Sea-Level Rise - Regulatory Impact Statement*, http://www.dec.ny.gov/regulations/103889.html .
[2] CHRISTOPHER FIELD ET AL., CLIMATE CHANGE 2014: IMPACTS, ADAPTATION, AND VULNERABILITY. PART A: GLOBAL AND SECTORAL ASPECTS. CONTRIBUTION OF WORKING GROUP II TO THE FIFTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (2014).
[3] Minhua Zhang et al., *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 (2014).
[4] Jochen Hinkel et al., *Sea-level Risk Scenarios and Coastal Risk Management,* 5 NATURE CLIMATE CHANGE 188, 188 (2015). *See also* Robert M. DeConto & David Pollard, *Contribution of Antarctica to Past and Future Sea-level Rise* 531 NATURE 591 (2016) (finding that previously underappreciated processes linking atmospheric warming with hydrofracturing of buttressing ice shelves and structural collapse of marine-terminating ice cliffs could lead to substantially greater levels of sea level rise than what is predicted by the IPCC).

consider this."[5] Other scientists have similarly concluded that projections based on the IPCC models are "not tolerable from a risk-averse perspective" and therefore unsuitable for coastal risk management.[6] It is therefore reasonable and necessary for DEC to adopt sea level rise projections with an upper bound that exceeds the IPCC projections as this provides decision-makers with a more complete picture of the full range of plausible sea level rise scenarios.

It is also worth noting that the federal government has taken the same approach as DEC in establishing sea level rise projections for the United States in the National Climate Assessment (NCA). The NCA recognizes that sea levels could rise by as much as 6.6 feet (79.2 inches) by 2100, taking into account upper-bound high risk scenarios.[7] The scientists who prepared the NCA projections specifically noted that "[c]oastal management decisions based solely on a most probable or likely outcome can lead to vulnerable assets resulting from inaction or maladaptation" and that "[g]iven the range of uncertainty in future global [sea level rise], using multiple scenarios encourages experts and decision makers to consider multiple future conditions and to develop multiple response options."[8] The New York City Panel on Climate Change has also determined that it is appropriate for planners to consider upper-bound sea level rise scenarios when evaluating project risks and vulnerabilities, and has adopted projections based on the same models used to produce the DEC projections.[9]

Finally, further evincing the reasonableness of this high projection is the fact that it is based on the 90th percentile of the distribution of different sea level rise scenarios projected by Horton et al. (2014).[10] This means that 10% of the model outputs actually predicted *higher* levels of sea level rise. DEC could more clearly state this in the final regulation to ensure that decision-makers are fully aware of the possibility that sea level rise could exceed the high projection.

In sum: we believe that DEC has proposed a reasonable distribution of seal level rise projections that is suitable for risk-based planning in New York State. We encourage DEC to adopt these projections and corresponding guidance on how they should be used when reviewing specific types of projects as quickly as possible. As noted in a recent report from the Regional Plan Association (see attachment), the region "faces a severe threat from sea level rise, yet relatively little has been done to address the inevitable permanent inundation of buildings, infrastructure and communities."[11] The prompt adoption of the projections and corresponding guidance will help to ensure a coordinated and consistent approach to preparing for the risks of sea level rise.

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[5] Field et al., *supra* note 2, at 369 (emphasis added).
[6] Hinkel et al., *supra* note 3, at 188.
[7] JERRY MELILLO ET AL., CLIMATE CHANGE IMPACTS IN THE UNITED STATES: THE THIRD NATIONAL CLIMATE ASSESSMENT (U.S. Global Change Research Program 2014) at 45.
[8] Adam Parris et al., *Global Sea Level Rise Scenarios for the United States National Climate Assessment*, NOAA Technical Report OAR CPO-1 (2012) at 1.
[9] *Building the Knowledge Base for Climate Resiliency: New York City Panel on Climate Change 2015 Report,* 1336 ANNALS OF THE NEW YORK ACADEMY OF SCIENCES 1 (2015).
[10] Radley Horton et al., *Climate Change in New York State: Updating the 2011 ClimAID Climate Risk Information Supplement to the NYSERDA Report 11-18* (NYSERDA 2014) at 10.
[11] Regional Plan Association, *Under Water: How Sea Level Rise Threatens the Tri-State Region,* Report of the Fourth Regional Plan (2016) (attached) at 2.

We also encourage DEC to periodically review its sea level rise projections in light of observed increases in sea levels, updated information about greenhouse gas emission trajectories, and new scientific assessments on future sea level rise, and revise the projections when warranted by new information. That said, we do not think the adoption of the proposed projections and accompanying guidance should be delayed by the development of a review and revision plan – such a plan could be prepared at a later date.

If you have any questions about our comments, please do not hesitate to contact me.

Sincerely,

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