

Mark Lowery
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625 Broadway
Albany, NY 12233-1030

SUBJECT: NEW YORK STATE SEA LEVEL RISE TASK FORCE REPORT: PORT AUTHORITY OF NEW YORK AND NEW JERSEY'S COMMENTS

Dear Mr. Lowery,

Thank you for the opportunity to comment on the New York State Sea Level Rise Task Force Report (report). The Port Authority of New York and New Jersey (Port Authority) respectfully submits the following comments on the report and looks forward to future collaboration with the Department of Environmental Conservation (DEC) and the Task Force.

The Port Authority applauds the report's environmental stewardship and call to protect coastal ecosystems. Overall, however, the report's emphasis and recommendations appear to be more applicable to coastal areas in Nassau and Suffolk Counties, such as the Great South Bay, the Peconic Bay, and south shore barrier beaches, than the highly engineered coastline of metropolitan New York. New York City is home to approximately 43%¹ of New York State's population, with approximately 18 million² people a day from the tri-state metropolitan area relying on New York City's extensive transportation, communication, and utility infrastructure. Much of this infrastructure, including Port Authority airports, port terminals, mass-transit systems, bridges, and tunnels, is located in close proximity to the coast, without the benefit of natural systems, such as wetlands, to mitigate the effects of climate change. While the Port Authority supports protecting and restoring coastal ecosystems in the New York City area, the report should also include a greater emphasis on engineered strategies to protect urban infrastructure. Port Authority recommends a multi-pronged approach to sea-level rise adaptation planning that acknowledges distinct regional differences and develops multiple adaptive strategies to protect both the built and natural environments.

¹ 2009 US Census Bureau

² 2009 US Census Bureau

Report:General Comments:

1. In addition to releasing this Report, New York State also released the *Climate Action Council: Climate Action Plan Interim Report*, which included a section on sea level rise and adaptation planning. The Port Authority recommends adding a discussion on how New York State will coordinate findings and recommendations contained in the two reports.
2. One of the assignments of the Task Force in the authorizing legislation was to develop adaptive strategies for the built environment. Other than what appears on pages 35 and 47, this part of the report needs further development and explanation. This element is particularly critical to planning any response in the New York City built environment. While the Port Authority agrees with the report's goal to conserve natural systems such as barrier islands, tidal wetlands, and dune systems, we are concerned that the report presents few recommendations or solutions to protect urban infrastructure where such natural systems are not available. For more urbanized areas, the report should both discuss how non-structural approaches could work to protect coastal infrastructure, including concrete examples, and how to prioritize using hard engineering for situations where soft engineering will not apply.
3. Any non-structural measures recommended and/or implemented near airports should be consistent with Federal Aviation Administration (FAA) standards for mitigating risk of wildlife strike hazards. While the Port Authority supports protecting and restoring natural habitat, care must be taken near airports to limit potential wildlife and airport interactions.
4. With regard to: "*Over the long term, costs associated with "hard" structural protection measures such as seawalls, dikes, and beach nourishment will be several times more expensive than non-structural measures such as elevation of at-risk structures and planned relocation away from the coastal shoreline*". This statement appears to be somewhat speculative, especially given the varied landscape of New York's coast. The Port Authority recommends adding a cost-benefit analysis to quantify the costs associated with non-structural measures and hard structural protection as an appendix. In addition, the Port Authority would argue that relocating urban infrastructure in New York City would be prohibitively expensive, cause huge social disruption, and may not be technically feasible. The Port Authority owns, operates and maintains over thirty-one facilities in the New York metropolitan area, with half of those resources vulnerable to sea level rise and/or storm surges including JFK International Airport, LaGuardia Airport, the Holland and Lincoln Tunnels, PATH, the Brooklyn Cruise Terminal, and the World Trade Center. Such infrastructure is vital to the region's economy, public transportation system, and goods movement network and must be protected. Structural measures may be required to protect Port Authority facilities from significant damage and/or extended periods of inoperability. While the report acknowledges that New York City may be an area where shoreline protective structures may be necessary, as discussed previously, the Port Authority requests an expanded discussion on how soft and hard engineering strategies could be adapted to the New York urban area to protect both existing natural habitats and infrastructure.
5. The report recommends limiting new development in the coastal zone. There is limited open space in the highly urbanized area of New York City. Limiting further development in New York City's coastal zone would greatly limit growth potential and would be inconsistent with other sustainability-related goals, such as compact development and maximum use of alternative modes

of transportation. Instead, the report should provide recommendations for smart development in such areas. For example, new buildings or retrofits in this zone should include flood protection standards as part of building codes.

6. There should be more discussion on “accommodation plans”. There may be areas identified as high flood areas that are allowed to flood. For example, instead of trying to prevent flooding on a coastal highway through soft or hard engineering, the adaptive strategy might be to develop an established detour route along with a comprehensive communications network to close the road ahead of the flooding event and alert drivers of change. These types of plans are particularly important because available funding might limit the complete implementation of non-structural (or structural) solutions.

Specific Comments:

Page 10: *“Coastal Risk Management Zone: areas to be classified as currently at significant risk of coastal flooding due to storms and areas projected to be at high risk of flooding from projected sea level rise and strong storms.”* Please add that this zone is a recommendation and not an existing FEMA classification.

Page 15: *“There are low-cost, high-benefit actions that can be taken now to reduce vulnerability along New York State’s coastline.”* Please provide examples of such actions to protect urban infrastructure.

Page 16: *“Reduce vulnerability in coastal areas at risk from sea level rise and storms. Support increased reliance on non-structural measures and natural protective features to reduce impacts from coastal hazards”*. Please add “where applicable” to the end of this statement.

Page 26: *“Conversely, non-structural solutions, such as elevation and strategic relocation, can reduce or eliminate the long-term threat of flooding at a much lower long-term cost and with fewer impacts to natural systems. In light of these factors, federal and state agencies are beginning to incorporate non-structural solutions into their long-term coastal protection planning and management.... Where shoreline stabilization is absolutely necessary to protect investment in essential public infrastructure, appropriate “soft engineering” or “living shoreline” techniques should be implemented, rather than structural shoreline protection measures”*. Please provide examples of non-structural solutions for the urbanized environment and please add “where applicable” to the end of this statement.

Page 31: *“Hurricane Katrina prompted the National Academy of Engineering and National Research Council to declare that: “... because of the possibility of levee/floodwall overtopping—or more importantly...failure—the risks of inundation and flooding never can be fully eliminated by protective structures no matter how large or sturdy those structures may be.”* The Port Authority questions the use of references specifically written for New Orleans for this report. New Orleans’s geography is much different from New York, and relies on a levy system not present in New York. While certain general lessons can be learned from Hurricane Katrina, the Task Force should use caution in using site-specific references. The report cited was specifically discussing protective measures for New Orleans and the full passage is as follows: *“There are many inherent hydrologic vulnerabilities of living in the greater New*

*Orleans metropolitan region, especially in areas below sea level. Post- Katrina repairs and strengthening have reduced some of these vulnerabilities. Nevertheless, because of the possibility of levee/floodwall overtopping—or more importantly, levee/floodwall failure—the risks of inundation and flooding never can be fully eliminated by protective structures no matter how large or sturdy those structures may be*³.

Page 32: *“As these protective measures are eventually undermined or destroyed, the public investment will be lost. However, there will be some areas where shoreline protective structures may be necessary, such as New York City. In such cases, it may be appropriate to integrate soft engineering techniques and elevation of critical facilities into the design of shoreline protection projects”*. Please provide examples of soft engineering techniques. The Port Authority also recommends expanding this discussion (please see earlier comments).

Page 33: *“Of the major airports in the New York metropolitan area, both LaGuardia and JFK are at risk of flooding from powerful coastal storms and sea level rise. LaGuardia is at greatest risk. Even without sea level rise, a ten-foot storm surge, similar to that of Hurricane Donna in 1960, would begin to overtop its protective barriers. Water levels above 13 feet would cause significant flooding at the airport. However, such flooding is not expected to affect the airport’s structures and equipment uniformly; a more detailed study is needed to evaluate which areas would be most vulnerable”*. The Port Authority agrees that more studies are needed for LaGuardia and JFK, however preliminary studies have shown that JFK may not be vulnerable to sea level rise (using projections from the ClimAid effort). We also question references to Hurricane Donna and the projections used in this section. The Port Authority requests that more information be added on whether Hurricane Donna affected La Guardia and, based on current projections, whether 13+ foot storm surges are expected in that area.

Page 36: *“Due to their escalating capital and maintenance costs and the incentives they create for new development in high-risk areas structural protection measures and funding for them should be significantly reduced over time. In areas where structural protection is warranted, such as some areas of New York City, the state should develop guidance to enhance the ecosystem value of structural protection measures (Recommendation 8). At the same time, the state must coordinate with federal agencies like the Federal Emergency Management Agency (FEMA) and the U.S. Army Corps of Engineers (USACE) to reduce incentives for new development and redevelopment in high-risk areas (Recommendation 5, 14)”*. Please see earlier comments, the Port Authority recommends an expanded section on addressing urban infrastructure. Most of New York City would likely be considered a high-risk area. Reduced funding and incentives for redevelopment in such area would likely put billions of dollars of important infrastructure at risk.

Recommendations:

General:

³ National Academy of Engineering and National Research Council: The New Orleans Hurricane Protection System, Assessing Pre-Katrina Vulnerability and Improving Mitigation and Preparedness, 2009

The Port Authority suggests moving Recommendation 6 (“develop maps and tools”) between Recommendations 2 and 3. In doing so, the recommendations could also serve as a broad outline for an eventual plan.

Recommendations 1 and 6:

The Port Authority supports developing state adopted climate change projections and subsequent maps and tools for use in adaptation planning. However, such maps and tool should be made available to agencies for consideration only. Mandating the use of such tools may limit agencies that have more detailed modeling needs, such as the Port Authority in highly engineered areas in metropolitan New York. In addition, the Port Authority requests feedback on whether the Task Force will consider the rapid ice-melt scenario as part of the projections. The inclusion of such scenarios would have major implications for facility planning. The Port Authority also suggests developing a short-term (to 2050) and a long-term (to the 100-year time horizon) projection indicating both the level of uncertainty and probabilities associated with each projection.

Recommendation 2:

The Port Authority agrees that sea level rise projections and associated impacts should be figured into agency decision-making. However, the Port Authority suggests that the Task Force maintain flexibility for agencies to use their own site-specific assessments if the available projections are too general for use in site planning and design. In addition, the Port Authority that the Task Force maintain flexibility for agencies to choose how projections are used. For example, planning and design efforts to prevent inundation may be different from planning to limit the damage or respond to inundation.

Recommendation 3:

Please provide a methodology for determining the use of the stated FEMA zones (V, V 1-30, or VE zones) for creation of "coastal risk management zones." Please provide further information on how the zones will be coordinated with current FEMA flood zones. It is also of concern that current FEMA maps do not always reflect changes in landforms due to development and may provide and inaccurate accounting of risk zones.

Recommendation 4:

The Port Authority agrees with this recommendation in general; however, there are major implications of being within a high-risk area, such as changes to insurance rates and potential capital funding issues. Therefore, the risk mapping should be as accurate and specific as possible. In addition, as a new recommendation, or as part of Recommendation 4, the Port Authority recommends that New York State develop an “Adaptation Toolbox” that communities/municipalities/agencies could use when designing/redesigning infrastructure and buildings in the coastal zone. The toolbox would present basic adaptation strategies specific to different coastal regions, including hard engineering strategies where necessary, and include information on when such strategies are applicable.

Recommendation 5:

The Port Authority's airports, maritime ports, bridges, tunnels and PATH system qualify as "areas where structure protection is justified to protect significant public investment...and critical infrastructure..." "Non-structural measures such as elevation and relocation" may, therefore, not protect such resources. For example, changing the elevation of our airfield facilities to fully incorporate sea level rise projections would not be feasible, and relocation sites are both not available and cost prohibitive. Therefore, the Port Authority recommends expanding Recommendation 5 to include adaptive strategies for urban infrastructure that both explains how soft engineering could work for such areas and integrates hard engineering solutions.

Recommendation 7

It appears that existing wetlands within our airport facility boundaries could receive an enhanced designation because of this recommendation. The Port Authority requests that any change in wetland designation be based on an analysis of existing and potential wetland functions and considers adjacent land uses, such as airports. In addition, many of the proposed changes to laws and regulations could materially affect scope, cost, and project delivery schedules. Such changes should be acknowledged.

Thank you for the opportunity to comment on the report. Please contact Lena DeSantis of my staff at (212) 435-5467 with any questions. The Port Authority would welcome the opportunity to discuss our comments with DEC and other member of the Task Force.

Sincerely,

Christopher R. Zeppie
Director, Office of Environmental and Energy Programs