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To: Matt Baumgardner & Emily Goldstein, NJDEP

From: Eric Fang and the ACCR Consulting Team

Date: February 23, 2022

Re: **Resilient NJ Atlantic County Coastal Region (ACCR)**
Overview of Scenarios

Overview

Our team has organized the three scenarios to help the Steering Committee and Stakeholders clarify their thinking about the different approaches to addressing the region's most salient adaptation challenges, and as a tool to help determine regional priorities.

While these scenarios encompass a diverse suite of actions, each scenario addresses the seven challenges facing the region, as identified through the engagement process, risk assessment and planning analysis:

- Shoreline Protection
- Stormwater Management
- Access and Transportation
- Power and Communications
- Equitable Economic Development
- Public Facilities
- Vulnerable Populations

The three scenarios also embody the key elements of the ACCR vision: "The Resilient New Jersey Atlantic County Coastal Region is a resilient and sustainable place where protections from natural disasters, flooding, and sea level rise enable the region to thrive; residents' sense of belonging and pride in their communities is enhanced by advancing quality of life through fair housing, accessible transportation, infrastructure improvements, and a diversified economy; and visitors are offered inviting recreational and cultural experiences that honor the ocean and optimize the waterfront, public space, and regional assets that make the region an iconic destination."

These actions are focused on building the region's capacity as a region, which we believe is fundamental in addressing long term resilience of the region's seven municipalities.

Each of the three scenarios is structured around a different conceptual approach to adaption and implementation. Each includes implementable actions incorporating ongoing initiatives as well as more innovative methods and visionary strategies for long term resiliency.

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All Scenarios

Common to all three are a set of six actions that address shared challenges in a way that would yield multiple benefits.

- The Absecon Bay Living Bay Master Plan provides a framework to establish conditional monitoring, prioritize actions for habitat restoration, and create a means to streamline permit reviews.
- Establishment of the "Absecon Bay Keepers", a non-profit organization dedicated to stewardship of Absecon Bay, and working on behalf of the people and wildlife that depend on the Bay through environmental action, advocacy, and education.
- Implement a regional initiative to translate all emergency preparedness materials to multiple languages spoken in the region. Atlantic City is one of the country's most diverse communities in terms languages spoken and this initiative would entail translation to over eight languages.
- Implement a program focused on the evaluation and improvement of preparedness actions for socially vulnerable populations focusing on Shelters, Evacuation, Outreach, and Education and Social Services and Wellness.
- Adaptation Action Plan for all Atlantic City Housing Authority and Pleasantville Housing Authority Communities and the region's Senior Communities. The Action Plan would include measures such as elevating electrical and mechanical equipment, installation of solar panels, reprogramming vulnerable ground level residential units, and developing long term strategies for the most vulnerable communities, such as Walter Buzby.
- Raise approaches to all bridges to maintain the viability of the five evacuation routes servicing Absecon Island and Brigantine.

Scenario 1

Scenario 1 is oriented toward gray infrastructure solutions. This scenario relies on a mix of actors for implementation, but is more centralized in nature, looking primarily on Federal and State-led partnerships with local municipalities to address coastal protection.

On the Absecon Bay side, this scenario calls for the implementation of the recommendations featured in the USACE's Back Bays Study which proposes a Cross-Bay Barrier, a continuous floodwall along the northern edge of Absecon Island in Atlantic City, and the construction of the Great Egg Harbor Inlet Storm Surge Barrier adjacent to the Downbeach area. This scenario adopts this same approach along the entire length of Brigantine's Absecon Bay shoreline, which is not within the line of protection in the Back Bays Study Plan. On the ocean side, this scenario calls for installing a sheet pile dune core to fortify the dunes in the Absecon Island municipalities and Brigantine. It also calls for constructing a sea wall on the northern end of Brigantine, which has been identified as a critical gap.

Stormwater is perhaps the risk the community feels most acutely on a regular basis. To address the increasing frequency of more intense rain events, Scenario 1 proposes

a combination of new pump stations and raising selected roads with a focus on those that feed into evacuation routes.

To maintain post-disaster continuity of electrical and communications service, this scenario proposes a suite of three actions: a) hardening all above ground utility poles and burying power lines where possible; b) installing new generators at selected public buildings and using these to power new microgrids; and c) expanding the Midtown Microgrid study, an ongoing, funded initiative, to nearby local merchants on Atlantic Avenue to allow for the continued provision of food and healthcare services in post-disaster situations. Maintaining continuity of services by local retail establishments is also provided for in this scenario through a program to protect each of the area's primary commercial corridors and retail centers.

Scenario 2

Scenario 2 adopts a mix of gray and green adaptation solutions. This scenario also relies on a mix of actors but looks toward the State, County and the region's municipalities to partner on needed resiliency improvements.

On the ocean side, Scenario 2 continues the beach nourishment program with a gradual elevation increase to address surge and sea level rise over time. To address vulnerability on the Absecon Bay side, this scenario proposes utilizing the assets within the control of the individual municipalities. This scenario proposes raising the roads closest to, and paralleling the shoreline in all five Absecon Island municipalities and Brigantine. This would involve linking multiple streets to form a continuous multipurpose levee. This levee is envisioned to include a Greenway trail for pedestrians and/or cyclists, thus offering recreational benefits as well.

As a companion to the Greenway, this scenario proposes a "Absecon Bay Blueway". This would be a network of interconnected kayak/canoe trails connecting different parts of Absecon Bay and potentially linking to the Great Bay to the north and the Great Egg Harbor Bay to the south. The Blueway could not only help raise awareness of the bay and its ecological importance to the region, but also provide a new recreational outlet and contribute to the region's economic development.

For stormwater management, this scenario features a Feasibility Study and Pilot Program "Blue Street," an innovative "smart infrastructure" approach to managing ground water to mitigate flooding. This approach, which couples subsurface sensors coupled with pump stations to lower ground water in advance of major precipitation events has been successfully deployed in similar contexts in the U.S. The purpose of the study would be to identify the locations it might be most effective in this region, and fund a pilot project in Atlantic City.

To maintain post disaster continuity of electrical and communications service, Scenario 2 proposes a community microgrid study to identify optimal locations for microgrids in each of the region's municipalities. The study would focus on public facilities, casino/hotels and other major sites that could support emergency power

generation and microgrids that would supply power to vulnerable populations, essential small businesses, and medical facilities in the immediate vicinity. This study would require coordination with Atlantic City Electric (ACE).

Scenario 3

Scenario 3 is oriented more toward nature-based adaptation solutions. This scenario also takes a more diverse approach to implementation, relying on state, local, non-profit and private sector partnerships, and looking to leverage private investment to help finance needed resiliency improvements.

Scenario 3 takes a public-private approach to bayside protection. The key concept is to allow increased densities and encourage assemblage of individual single family bayfront lots in order to attract private investment. New development projects would be required to implement shoreline improvements that would provide long term protection to upland areas. These improvements could include living shorelines, site raising, etc. This strategy is based on a phenomenon that has been occurring organically in the Downbeach communities and Brigantine, where improvements to bayside shoreline protection have been taking place as individual properties change hands and the northern end of Atlantic City. On the ocean side, Scenario 3 proposes offshore breakwaters to mitigate storm surge.

Scenario 3 also proposes revising the zoning in two corridors within the region to allow for greater density. The two areas identified, along the Black Horse Bike north of Florence Avenue in Pleasantville, and Atlantic Avenue in Atlantic City, are less vulnerable relative to other area neighborhoods, are along major established corridors, and enjoy access to transit. Zoning changes would be coupled with development of vision plans for integrating public realm and flood mitigation improvements to make these areas more attractive for development. Greater density in these areas would allow for economic development opportunities and also expand opportunities for housing for those potentially displaced as more vulnerable areas become too expensive to protect.

This Scenario also encourages rezoning properties adjacent to Atlantic City Harbor for maritime oriented/'blue economy' uses. The goal is to better take advantage of the one location in the entire region with a harbor able to support blue economy related uses. Using zoning ordinance, would allow the area to transform over time while preserving nearby historic neighborhoods. Attracting blue economy enterprises in this area would open the possibility for partnerships with the State, which is actively encouraging these types of industries. Such partnerships would not only create new jobs, but would also attract the private capital needed to make needed improvements in shoreline protection that would protect upland neighborhoods.

The Coast Guard occupies a strategic location on the Absecon Inlet, at the mouth of the Harbor. Should the Coast Guard decide to decommission this site, this study would position the City to ensure that the land is redeveloped for uses that will support maritime related/blue economy uses.

For stormwater management, this scenario features a “Living Streets Feasibility Study and Pilot Project.” This would not only include the “Blue Streets” program described in Scenario 2, but also a focus on “Green Streets” to identify locations where green infrastructure measures such as stormwater streets, swales, as well as porous pavement would be most effective. Incorporating Green Streets would allow for natural infiltration to mitigate downstream flash flood risks taking pressure off municipal storm sewer systems. The “Living Streets Feasibility Study and Pilot Project” would also fund a pilot living streets pilot project in Atlantic City.

To improve the region’s ability to maintain post disaster electrical and communications service, Scenario 3 takes a more decentralized approach, looking to encourage actions by private property owners by requiring installation of solar panels for all renovation and new construction projects above a specified dollar amount to increase energy resiliency during power outage. This scenario also features an incentive program to encourage installation of solar trellises at surface parking lots and batteries at all buildings to increase the capacity for individual property owners to maintain electrical power independently of the grid in post-disaster situations. Encouraging installation of batteries would also allow for bi-directional charging for electric vehicles which would address potential gas shortages in post-disaster situations.