



May 21, 2021

Climate and Flood Resilience Program  
New Jersey Department of Environmental Protection  
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VIA Email to: [climateresilience@dep.nj.gov](mailto:climateresilience@dep.nj.gov)

RE: Comments for consideration of inclusion in the New Jersey Climate Change Resilience Strategy and Coastal Resilience Plan

Climate and Flood Resilience Program Team,

Thank you for the opportunity to provide comments and input to the draft *New Jersey Climate Change Resilience Strategy ("Strategy") and Coastal Resilience Plan ("Plan")* released on April 22, 2021. The New Jersey Coastal Resilience Collaborative (NJCRC) is a partnership of stakeholders and interested parties from all sectors, including state and private universities, non-profit and for-profit groups, national estuary programs and reserves, advocacy groups, state agencies and regional planning groups, established to foster sustainable and resilient coastal communities and ecosystems by generating informed action. We applaud the thoughtfulness that has gone into the Climate Change Resilience Strategy and imbedded Coastal Resilience Plan and appreciate the Program's consideration and integration of many of the comments the NJCRC provided in response to the original vision of the Strategy and Plan.

In response to the Program's request for public comments on the draft Strategy and Plan, we are providing the attached comments for your review and consideration. The attached document developed by the partners of the NJ Coastal Resilience Collaborative do not represent the views of all of the collaborative partners or indicate support for every comment

provided in the document by every partner. We hope that you find our input constructive. The partners of the NJCRC look forward to further dialogue as you continue to develop and implement the strategies and actions contained within the New Jersey Climate Change Resilience Strategy and Coastal Resilience Plan.

Sincerely,

Signed on Behalf of the NJ Coastal Resilience Collaborative Co-Chairs

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p.p.

Tim Dillingham

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**State of New Jersey Draft Climate Change Resilience Strategy, April 2021**  
**New Jersey Coastal Resilience Collaborative (NJCRC) Comments**  
**May 2021**

The *Draft State of New Jersey Climate Change Resilience Strategy (the “Strategy”)* and *Coastal Resilience Plan (the “Plan”)* released on April 22, 2021, focuses on strategies to protect, restore, and responsibly develop New Jersey’s diverse coastal communities and resources in light of the current and future impacts of climate change.

The Strategy and the Plan represent important first steps in providing a general framework, but the implementation steps to follow will be hard and will need to be specific and reflect the interconnectedness of natural systems, risks, ecology and community, and be supported by the resources needed by communities to support recommended actions.

For the Strategy and Plan to be accepted, it needs to be understood by all of the state’s residents. The Strategy and Plan both assume that the general public has knowledge of state programs and how they work. Many communities do not have the wherewithal to investigate and analyze how their communities will be impacted. The NJCRC strongly supports the call for substantially increased technical assistance by NJDEP and other state agencies recommended in the Strategy, and suggest that in the Strategy the state provide a table of state programs along with definitions, explanations and related actions suggested or required. In addition, the state is encouraged to provide a detailed breakdown of the climate survey results – for example, did the survey include private citizens from throughout the state? Also, more explicit explanations for the typical state resident are needed; for example, it may be confusing to read that there have been more extreme rain events but also more frequent droughts.

To bring the state Strategy and Plan in line with federal actions and scientific research, the future planning timeline should extend beyond 2050 and include consideration of longer-term windows to 2075 and 2100.

**Priority 1: Build Resilient and Healthy Communities**

**Strategy 1.2:** Both the Strategy and Plan correctly identify that many of the climate change resilience issues facing New Jersey include climate impacts and governance challenges. As such, Strategy 1.2 focuses on ensuring that every municipality has the opportunity to increase its resilience, regardless of capacity, size, location, or wealth. It recognizes that this will only be achievable with increased capacity at the local level developed through state government leadership, guidance, and support.

The State will need to provide a statewide sea level rise standard and other risk and vulnerability assessment metrics that provide consistency in planning, design, and construction across jurisdictional boundaries.

It would be beneficial for specific funding sources to be listed, including technical assistance for communities, and clear pathways for adaptation and implementation.

**Strategy 1.4:** While the framework for improving resilience in infrastructure is described through a discussion of hazards and issues, there are no plans or references to materials that provide specifics or processes that would aid in this transition. We encourage the state to add references and clarifying materials where required.

## **Priority 2: Strengthen the Resilience of New Jersey's Ecosystems**

Strategy 2 seeks to take actions to strengthen the resilience of New Jersey's ecosystems. Two of the sub-strategies – 2.1 Promote Resource Conservation and Natural Lands Management to Strengthen Ecological Resilience and 2.3 Deploy Natural and Nature-based Solutions for Resilience – are significantly relevant to the resilience of coastal ecosystems and communities and are further expanded in Strategies 6.3 and 6.4 of the Plan.

**Strategy 2.1:** This strategy correctly identifies that the ability of ecosystems to adapt to changing conditions is important to the state's overall resilience to climate change, but more specifics are needed, and it is often not clear how the text reflects the action bullets in a specific manner. We encourage the state to clarify the connection between the strategies and the narrative.

For example, Strategy 2.1 identifies the need to expand protections for waterways, but there is not much related within the text beyond listing current programs, nor how this program would help undeserved communities. Currently, only planting trees in economically depressed regions is the only concrete example, yet often in urban areas, residents are concerned that additional trees will bring bugs and more incidents of asthma. More specific detail is needed to capture the wide array of climate change issues facing undeserved communities.

The Strategy and the Plan are missing a discussion of financial benefits related to the resiliency strategies. To reach the concerted efforts denoted within the Strategy and the Plan, investment capital and ecosystem services need to be a part of the same conversation, and speak to future cost-savings, financial sustainability, and healthy economic relationships. Doing business as

usual cannot be an option, from both a compliance and commerce standpoint. For example, while the State is encouraging homeowners to consider nature-based solutions for shoreline erosion and ecological uplift, there is no guidance for how a homeowner can navigate through permitting and finding a local contractor who has experience and knowledge about natural design and materials. Much like solar installation, we believe the job market can evolve, but there needs to be education, interest, training, and funding at the local level to support the strategies.

The inclusion of nature-based solutions in Strategy 2.1 as a means to stabilize eroding conservation areas and tidal marsh edges is encouraged. One additional restoration action to consider is the conversion of formerly drained tidal marshes back to salt marshes. Research has shown that converting dry land back to salt marsh switches the land from a carbon source to a carbon sink, reducing the greenhouse gas pollution that drives climate change.

With regard to the conservation of areas to allow for marsh migration, research is needed to consider the net benefits of carbon sequestration derived from marsh migration. As freshwater systems convert to saline systems it causes existing vegetation to die, decompose (e.g., Ghost Forests), and release carbon.

**Strategy 2.3** promotes the use of natural and nature-based solutions to complement or act as alternatives to gray or hard infrastructure projects. The Plan identifies that there is a common misperception that natural features, specifically living shoreline projects, are only appropriate for undeveloped or rural areas, and only applicable along low wave energy environments such as back bays. To address these misconceptions, the Plan supports increasing understanding of the continuum of living shoreline stabilization techniques, and other natural and nature-based features, that are appropriate along a variety of shorelines. Specific examples where these techniques have been used in high energy environments would be helpful, such as along the Delaware River at Lardner's Point in Philadelphia. We encourage the inclusion of incentives for homeowners to utilize these techniques rather than bulkheads in this section; specific examples such as simplifying permit requirements and providing homeowners with technical assistance, would be helpful.

Both the Strategy and the Plan seem to limit the use of nature-based solutions for the protection of developed areas and infrastructure of limited shoreline length. We encourage the state to consider broadening the use of natural and nature-based features from softening or replacing hard structures to more substantial stabilization projects and systems in both the Strategy and Plan. Additionally, the use of nature-based solutions at a landscape scale is encouraged to provide system wide stabilization and restoration of shorelines.

### **Priority 3: Promote Coordinated Governance**

The Interagency Council is a good first step in meaningful and effective coordination and intersection among state agencies. Effective implementation of the Strategy and Plan, however, will require a true whole-of-government approach that includes support by the Governor in ensuring that cabinet-level officials lead efforts across diverse state agencies and are united under a common set of policies to ensure that science informed climate resilience strategies are consistently applied across state agencies and from state down to local agencies.

Specific coordination tasks and directives that link the state with local and regional governments are needed. There is little to no discussion of how county governments get involved with the resilience adaptation process, despite the fact that county governments own and manage a great deal of infrastructure across the state. Standard goals and metrics that are understood and for use by all levels of government are needed, and could be incorporated into local master plans.

The Strategy and Plan call out the engagement of academic institutions to advance specific strategies. Reliance on academic institutions alone ignores the experience and knowledge of many other stakeholders and partners that could provide resilience planning and design services. We encourage the state to expand the language in both the Strategy and the Plan to reflect that resilience resources can be provided by a number of partners including non-profits, private interests, trusts, foundations, etc.

**Action 3.2.3** encourages local and regional entities to designate a champion responsible for helping to coordinate and report local resilience work to the state. The NJCRC strongly supports the recommendations, but also recognizes the need for more funding, training and support for communities. This central point of contact will increase communication and coordination at all levels and would help to institutionalize a framework of support, however, the State needs to define a minimum set of standards and skills that champions require to effectively engage in resilience actions.

### **Priority 4: Invest in Information and Increase Public Understanding**

To truly increase the public's understanding of climate change, communication from the State and other agencies needs to speak in a universal language, and address hearts and minds – not just metrics. Residents of New Jersey that live, work and travel to places identified as “perilous” need to be able to connect with the six priorities laid out in the Strategy.

Planning for risk accurately is important, but of equal importance is conveying that risk information to the people that will be affected in a way that they can understand. Typically, before anyone cares about how much risk there is, they want to know that the floodplain managers care. These conversations and decisions will change lives, and they will also save lives. We need to frame the conversations correctly and explain that mitigation and resilience is going to look different in different places.

The Strategy is a good first step, but the hard steps to follow will require consideration of natural systems, risks, ecology, and community in mind. This section contains some specific actions, such as the clearinghouse but there is not much specificity; the communication campaign and other elements need further description and commitment across all participating State agencies.

Incorporating climate change into high school curricula is a clear, discreet action that stands out in this Strategy.

#### **Priority 5: Promote Climate-Informed Investments and Innovative Financing**

**Strategy 5.2** discusses the “innovative funding approaches” but needs some sources referenced and guidance provided so the reader can actively look into each of these mechanisms. A number of sources, such as Wetland Watch, provide concrete examples of innovative practices from around the country.

One concern is that pay for success funding approaches, while innovative for smaller discrete projects, may not work for larger, lengthier projects due to the costs of having to carry the burden for a long period of time.

**Strategy 5.3** would benefit from the addition of a few examples that describe the mentioned underlying inequities facing communities with regards to climate change

#### **Priority 6: Coastal Resilience Plan**

The Plan is laid out as “early steps of a long-term strategy” and “baseline considerations.” While purposing to be forward looking, what is needed are the detailed actions state agencies can and will take to improve the effectiveness, equitability and sustainability of coastal resilience planning and projects. These need to be informed by a set of measurable objectives that frame the ecological, adaptive and resiliency goals.

The Plan incorporates an iterative approach regarding the Plan, looking to re-issue the Strategy every two years, however this will be difficult for the State to implement thereby making it difficult to begin developing the specifics that the Strategy and Plan are now missing. The state is encouraged to consider an intense initial planning window working with communities to develop plans and fill gaps as recognized by this initial plan. Thereafter a five-year plan might be more realistic, and should be aligned with Municipal Land Use Plan revisions.

There is an over-emphasis in the Plan on priorities put forth by non-governmental organizations. The state needs to invest in more industrial and maritime engagement. There are a number of communities that need to be more involved with the successful roll-out and implementation of the Plan including working waterfront and aquaculture communities, as well as building and other trade associations. The state is additionally encouraged to support the implementation of research-based projects at multiple scales and focus on investing/prioritizing multi-sector (diverse expertise) projects to thoroughly evaluate new approaches/technologies.

The Strategy and Plan needs to outline a concrete description of how the public will be made aware of and provide input to subsequent plans and become involved in the iterative process of review and update.

The priorities list on page 82 presents a reasonable compromise between green and grey approaches to resilience, but we encourage the state to make a stronger statement about the adoption of “green” resilience techniques and to provide more information as to how the state will guide the movement of people from threatened areas.

## **6.1 Incentivize and Support Community Resilience Planning**

Both the Strategy and Plan correctly identify that many of the climate change resilience issues facing New Jersey include both climate impacts and governance challenges.

**Strategy 6.1** focuses on ensuring that every municipality has the opportunity to increase its resilience, regardless of capacity, size, location, or wealth and recognizes that this will only be achievable with increased capacity at the local level developed through state government leadership, guidance, and support. The Plan would benefit from including clear examples of the types and levels of support counties and municipalities can expect in terms of state support for community resilience planning. The NJ Frames example is a good one, but it would be more effective if, in addition to the detail on how it was enacted and who coordinated it, there were

details on lessons learned. There also needs to be a cleared commitment to supporting resources needed for implementation of planning recommendations.

In 2020, NJ CRC's Municipal Essential Practices Work Group also identified local capacity building as a necessary step to building resilience in coastal communities. Based on the considerable review conducted by the work group and the professional knowledge of NJ CRC work group members, the work group concluded that even when local leaders want to take decisive resilience action, they are not necessarily able to do so with any certainty that their actions will align with existing local practices or with state or federal policies or incentives.

The Plan recognizes that local government action is critical for effective coastal resilience, yet municipalities and counties often lack the technical and financial means to proactively prepare for and confront sea-level rise and other climate impacts.

**Action 6.1.1** indicates that DEP will expand technical support to communities, including the development of a Regional Resilience Coordinator initiative. This is a good first step but much more needs to be done across all state agencies to increase local capacity and knowledge. To address this issue, we encourage the state to provide aid to communities to establish community resilience officers, recognizing that it is not sufficient to just designate a single local champion to liaise with the State.

It is important for communities to designate a point person with a cross-program resilience team for resiliency matters to make sure that resilience issues are considered along with the typical local government functions and not as a separate siloed activity. As the activities of multiple local departments impact the resilience of a community, examining resilience issues in isolation, or assigning it to a particular department, is unlikely to be as effective as assigning a high-level official that has the authority to coordinate horizontally across multiple departments in a resilience team. As coastal resilience planning responsibility is transferred from the state and county levels to local municipalities, the need for a local resilience officer with specific skill sets to address planning requirements will increase. It is important for the state to develop a minimum set of standards a resilience officer requires to effectively implement a local community resilience in alignment with state and county programs and provide incentives for communities to participate in the planning process.

The Strategy recognizes that community resilience looks different for each community based on their own exposure, vulnerabilities, resources, and capacity to respond. Assistance programs that provide professional and technical assistance to municipalities (e.g., County CRS user groups, NJCRC and NJ Coastal Coalition) has proven to be an effective model for engagement

with diverse community representatives working to meet specific standards for community resilience and may be a role for the proposed Regional Resilience Coordinators.

## **6.2 Update Coastal Management Regulations and Policies to Reflect Sea-Level Rise and Other Climate Change Projections**

Additional specifics regarding sea level rise will be needed. It is understood that this may be in later state guidance, but there needs to be clear connections between the Plan, implementation actions, and sea level rise guidance.

## **6.3 Sustain and Strengthen Tidal Marshes to Provide Ecological and Community Resilience**

**Strategy 6.3** addresses actions the state will take to protect, conserve, restore and safeguard our coastal communities, using the power of nature itself to stem the impacts of climate change. To stem the loss of tidal marsh habitat the Plan is focused on protecting marshes for their habitat, ecosystem, physical resilience and economic (tourism) value. Strategy 6.3 focuses on conservation, protection and acquisition to allow for marsh migration. However, as previously mentioned under Priority 2, both the Strategy and the Plan seem to limit the use of nature-based techniques for the protection of developed areas and infrastructure of limited shoreline length. We encourage the state to consider broadening the use of nature-based techniques in Strategy 6.3 as a means to stabilize eroding conservation areas and tidal marsh edges and be considered for use at a landscape scale to provide system wide stabilization and restoration of shorelines.

There is a need for the implementation and monitoring (for lessons learned) of larger-scale projects to begin to approach green infrastructure implementation at the landscape level. To move forward with these actions, the state is encouraged to commit to learning more regarding the effectiveness of techniques across a multitude of landscapes (i.e., monitoring).

The text in this section could be better tied with the action items provided. For example, it is not explicit that the state is acquiring land for marsh migration and that this action is related to the Blue Acres program. A typical resident will not be familiar with the Blue Acres program and would benefit from additional explanation.

## **6.4 Manage Shoreline Stabilization with Nature-based Features**

The focus on nature-based strategies is a good first step, but while we understand that it takes systematic partnerships and careful examination to plan and implement effective nature-based

projects, nature-based solutions that receive local government support can easily lose traction if accomplishments are not pragmatic and timely. Thus, a stream-lined approach to enable faster project permitting needs to be evaluated. Loss of interest, disinvestment, or local funding re-allocation due to resource constraints are hurdles that can be overcome as a result of swifter permitting mechanisms (GP by certification, etc.). Regulatory simplicity needs to be front and center.

We encourage the development of a prioritization methodology that ranks living shorelines ahead of structural measures, when practical. While the State does have a hierarchy for non-structural measures (Coastal Engineering rule of N.J.A.C. 7:7 and the associated land use guidance), it is unclear how the guidance is applied and who makes the final permit decision. The process needs to be more transparent.

It would be helpful to have clear guidance regarding appropriate tools/methods to identify and catalog site-specific issues and subsequently evaluate the appropriateness of living shorelines for a specific location. The state has been involved in the development of many tools/methods, but it is unclear how their use can streamline the regulatory pathway (e.g., Resiliency Explorer, Flood Mapper, Steven's LS Engineering Guidelines, CERAP, WATCH, LS and Wetland Monitoring Framework).

NJCRC suggests that the State follow Maryland's lead in codifying living shoreline language into existing statute. Maryland's Living Shoreline Regulations only permit structural measures for shoreline stabilization when a nonstructural (living shoreline) measure is not feasible. The state also has a mitigation fund where they incentivize shoreline property owners to use living shorelines by providing loans to property owners. If living shoreline solutions do not meet the needs of an individual, then the landowner can apply for a waiver.

## **6.5 Manage Coastal Beaches and Dunes to Reduce Erosion and Storm Damage**

Managing coastal beaches and dunes to reduce erosion and storm damage is important at the current time, but more discussion about these techniques in light of sea level rise is needed. We encourage the state to reference how the DEP's decision support tool will be used to prioritize future beach and dune projects in Strategy 6.5.

Consideration of innovative concepts like restoring lost coastal land forms such as sedge islands ("blue islands") or the creation of new coastal landforms ("blue dunes") is encouraged.

## **6.6 Reduce Flood Risk to Existing Buildings and Infrastructure**

The following language could be used to create incentives for green/resilient design standards:

- Require all new (and significant retrofits of) state-funded waterfront facilities and parks to meet or exceed the minimum threshold for Waterfront Edge Design Guidelines (WEDG) verification (as developed by The Waterfront Alliance);
- Establish incentives for privately-funded new development or significant retrofits to meet the Waterfront Edge Design Guidelines (WEDG) verification.

New Jersey already requires state-funded projects to meet the LEED Silver standard and offers incentives (expedited permitting, zoning application fee rebates) as the corollary for green buildings. WEDG has been reviewed with/cross-walked with LEED via the US Green Building Council and exceeds/is a good companion to the LEED standard for resilient waterfront design.

## **6.7 Make Smarter and More Coordinated Investments in Coastal Resilience**

Resilience and natural infrastructure have been distinctively showcased as defined by America's Transportation Infrastructure Act of 2019. Federal transportation funding provisions which may protect, conserve, and mimic coastal habitats echoes the ability for innovative financing options to facilitate social, economic, and environmental success. Therefore, institutionalized awareness of climate-related risk and the benefits of resilient infrastructure have diversified potential funding sources for projects, while also creating a localized urgency to invest in nature. Thus, the Plan should explicitly build upon these expansive funding instruments in order to incentivize investments in resilience.

The decision support system is based on the SLOSH model; moving forward, we encourage the state to explore more rigorous modeling systems (Delft3D, DHI, etc.).

Prioritizing state agency funding for resilience infrastructure to protect large population and economic centers, areas with concentrations of critical infrastructure, and socially vulnerable populations is a laudable goal of the Plan, however, there are a number of smaller communities that play a vital role in the blue economy (e.g., commercial fishing ports, aquaculture centers, and ecotourism areas) that will need to be prioritized. The DEP decision support tool will need to balance both critical working waterfront communities and maritime industries and population center prioritization in a transparent way.

Several additional suggestions are listed below:

- Increase revenue from local and private sources for the Shore Protection Fund.
- Prioritize integrated coastal resilience projects using a standardized method to protect critical state infrastructure and year-round communities in areas with lower degrees of flood hazard.
- Incorporate additional factors for benefit cost analyses (not just property value) such as:
  - societal and economic value for ecological resources
  - positive and negative impacts to vulnerable populations
  - encouragement of public access
- Condition state aid for construction projects on its ability to benefit a municipality's implementation of mitigating and adaptive land use practices, including buyouts and regulations that restrict construction.
- Develop a statewide flood risk management standard that sets progressive and aggressive floodplain management standards for infrastructure projects and those involving state financing.

## **6.8 Share Financial Responsibility for Resilience**

To date, the state has only thought about how the strategy affects homeowners; there needs to be the same consideration for renters to fully protect all residents.

Several additional suggestions are listed below:

- Include a project's location in coastal flood hazard areas as a factor for all applications requesting State discretionary financing.
- Condition awards of state discretionary funds on a project's ability to withstand or protect against flooding to a greater degree than the existing infrastructure in SFHAs.
- Develop alternative funding avenues (including green bonds and private investment) for coastal resilience projects that capture the value of floodplain economic activity to fund resilience projects in vulnerable areas.
- In the cost benefit analysis for projects taking place in coastal flood zones, require a longer project useful life that accounts for higher sea levels to ensure that investment is directed towards viable and adaptive communities.
- Develop an economic development framework that facilitates existing economic activity to move inland to less-vulnerable areas as sea levels rise.
- Encourage communities to establish policies and identify funding sources for targeted buyouts after repetitive loss.
- Fund recovery efforts in areas most vulnerable by limiting addition payments based on risk.

- Ensure insurance penetration for private and community assets.
- Establish pre-disaster recovery plans that identify and socialize policies that do not encourage rebuilding in harm's way.

Implementation ideas:

- Partner with the Governor's Office and Interagency Council to develop a statewide flood risk management standard similar to the Federal Flood Risk Management Standard that covers all agencies.
- Collaborate with legislative partners to amend statutes and regulations for key programs.

## **6.9 Support and Incentivize Movement to Safer Areas**

This is a complex and long-term strategy that will require much more work and commitment from all state agencies in coordination with local community partners. NJ CRC encourages a focus on incentives to reduce risk and vulnerability, and transition over time. The State needs to develop actions that incentivize municipalities and landowners to make investments away from vulnerable areas. In addition, the state needs to develop a system of flood risk disclosures for current and potential homeowners and renters.