4.0
IMPLEMENTATION **PATHWAYS**

WHO WILL IMPLEMENT THIS PLAN?

Climate-related risk affects everyone at all scales, whether individuals or state agencies, whether at the scale of the home or business or entire region due to impacts to transportation, for example. Just as climate risk is varied but ubiquitous, implementation requires coordinated action across many different types of actors at multiple scales. Everyone has a part to play, but someone will always need to take the lead on different actions, and who is most closely involved will depend upon the action. For example, individual home or business owners will need to take charge of making improvements to their properties, but they may need support from programs administered by their municipality or the state, such as through action **Service-03** in **Section 3.3.3** (Increase resident access to resilience-related resources). Municipalities, state, or infrastructure entities, depending on the location, will need to raise existing infrastructure to act as barriers and protect communities (action **Coastal-02** in **Section 3.2.1**), but will need to engage with community members that could be affected and coordinate across multiple agencies for approvals, design, and construction. **Section 5.0** identifies key next steps for each of the entities shown below, as applicable.

Resilient NENJ recommends actions that will change the built and natural environment and will also change the way we work together to build resilience. Resilient NENJ has directly initiated some of the changes it recommends, but most others will require effort to get off the ground. Further, Northeastern NJ (NENJ) exists within a dynamic urban environment in an ever-evolving risk context. This means that no action will be "one and done," or that there is no quick fix. All recommendations will need to be monitored for performance following implementation, and periodically adapted to changing needs and circumstances (see **Section 5.0** for more periodic review and update recommendations). This section outlines key questions and implementation considerations that formed the foundation for roadmap recommendations in **Section 5.0**. These considerations will also be relevant for any resilience-related plans and projects into the future.

What are the stages of implementation for...

An action that will change the built or natural environment through construction?

ACTION DEFINITION
- a. Issue definition (risk assessment)
- b. Concept development
- we are here
- **c. Roadmap for implementation**

FEASIBILITY & DESIGN
- a. Preliminary Design (typically referred to as 30 percent design) for comment and vetting with stakeholders
- b. Final Preliminary Design (typically referred to as 60 percent design) for comment and revision with stakeholders
- c. Final Design (typically referred to as 90 percent design) for comment and revision with stakeholders
- d. Final Design (typically referred to as 100 percent design) for construction

PERMITTING
- Permitting (Permitting coordination and actions can co-occur within any of the design-related steps)

CONSTRUCTION

OPERATIONS & MAINTENANCE

FUTURE ADAPTATION

An action that will change the way we work together or a policy or program that will affect the built and natural environment?

ACTION DEFINITION
- a. Issue definition (risk assessment)
- b. Concept development
- we are here
- **c. Roadmap for implementation**

DESIGN
- a. Structure
- b. Content
- c. Coordination needs

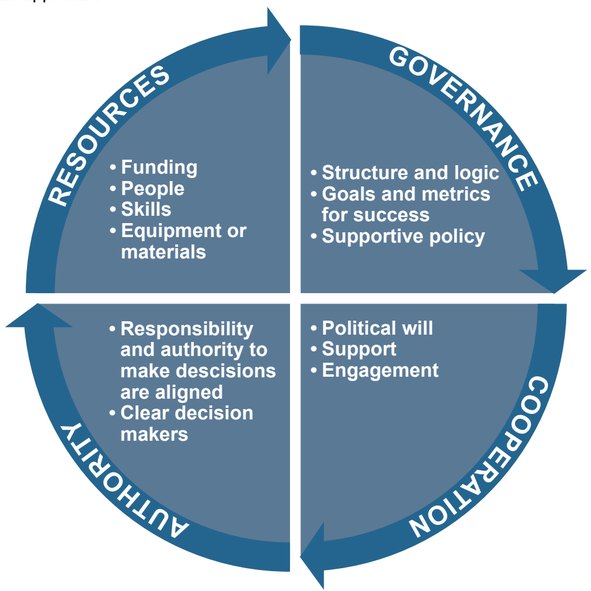
IMPLEMENTATION
- a. Materials
- b. Coordination
- c. Execution

ONGOING MANAGEMENT & MONITORING

FUTURE ADAPTATION

WHAT DOES IT TAKE TO ACCOMPLISH ANY STAGE OF AN ACTION?

Implementation needs depend on many factors, including action type, scale, and complexity, as well as the stage of implementation, but all actions will require the same essential components: Resources, Governance, Cooperation, and Authority. **Section 5.0** (The Roadmap) describes these needs for Action Plan implementation, as applicable.

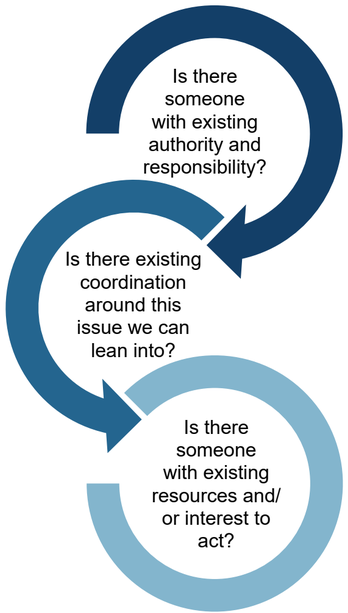


Due to the scale and urgency of risk in the region, multiple (perhaps many) actions should be completed simultaneously. Small scale projects and larger scale projects often differ in complexity and sources of funding, which provides room for different stakeholders with different levels of resources and capacity to contribute. Projects can be implemented in increments, allowing time for funding to be acquired and permitting and design to be finalized. Over the near and medium-term, small scale and large scale projects and initiatives will be implemented across simultaneous implementation pathways.

HOW DO WE IDENTIFY WHO MIGHT TAKE THE LEAD ON IMPLEMENTING...

An action that will change the built and natural environment?

An action that will change the way we work together?



PUBLIC OR PRIVATE FUNDING? OR BOTH?

Resilience actions in NENJ will provide both public and private benefits, and as such, public and private investments for implementation must be coordinated effectively. Residents, business owners, and visitors will experience direct flood risk reduction and benefits to public spaces and infrastructure, such as transportation, as well as the economic and social benefits from reduced risk of disruption. Improved public spaces will benefit residents, workers, and visitors, as well as the businesses around them. Resilience actions in NENJ likely require a combination of coordinated private and public investment, insurance coverage, improved processes for coordinating and entitling or permitting protective measures, updated policies, possible new flood-related public services and outreach, and other cooperative actions designed to provide the greatest protection and quality of life improvements.

HOW MIGHT ACTIONS BE FUNDED?

Funding pathways come in two broad categories: 1) those that use or maximize resources available to the person or entity responsible for implementing any stage of an action; 2) those that share the burden with outside sources.

Maximizing local funding available:

- **Refine** – Refining or altering a project or program scope to do more – such as incorporating resilient design measures into a highway improvement to prepare for climate change, or integrating resilience into an energy improvement technical assistance program.
- **Refocus** – Reprioritizing or refocusing funding from an existing project, funding bucket, or program to a different area
- **Generate** – generating revenue or action, often through something like a stormwater fee or incentive.

Sharing the burden:

- **Partner** – partnering with others, such as through a public private partnership or mutual aid agreement, to accomplish an action
- **Prepare** – Preparing for funding that comes through a new congressional allocation (such as the Bipartisan Infrastructure Law or Inflation Reduction Act, both released in 2022 – see **Appendix C**) or is expected post-disaster (such as FEMA's Public Assistance 406 Mitigation, FEMA's Hazard Mitigation Grant Program, or HUD's Community Development Block Grants Mitigation program). This can be done through the development of post-disaster redevelopment plans, as well as the development of project scopes and cost estimates that can be quickly implemented as funding becomes available.
- **Pursue** – pursuing funding from outside sources like philanthropic entities, state agencies, or federal programs (such as FEMA's annually appropriated Building Resilient Infrastructure and Communities program).

FUNDING PATHWAYS

REFINE

- Tweak planned capital projects to integrate resilience elements
- Leverage existing programs to accomplish resilience related goals

REFOCUS

- Dedicated budget line items
- Redirection of existing funding

GENERATE

- Stormwater Utilities
- Impact Fees for Large Users
- Special Assessments
- Host Community Impact Fees

PARTNER

- Memoranda of Understanding (MOUs) / Agreements
- Public Private Partnerships (P3)
- Independent action by other entities to implement

PREPARE

- Having a plan in place to use to drive post-disaster recovery funding and new funding allocations

PURSUE

- State and federal grants (e.g., FEMA)
- Loans and bonding (e.g., State Revolving Fund (SRF) / NJ I-Bank)

FITZPATRICK PARK

Fitzpatrick Park renovations include upgrades to the neighborhood's stormwater system, which will reduce stormwater runoff. The project was partially funded by a Hudson County Open Space Trust Fund Grant and funding through the New Jersey Water Bank state revolving fund.

Image Source: *Resilient NENJ*

MAXIMIZING LOCAL FUNDING AVAILABLE

Resilient NENJ recommends that municipalities, counties, and major infrastructure providers allocate portions of their capital budgets directly to climate resilience effort staffing and implementation. Resilient NENJ recommends that these entities review existing capital improvements plans and master plans for opportunities to **REFINE** or **REFOCUS** projects and programs to increase resilience or contribute to resilience-related goals. Generally, all investments should be evaluated for resilience-related opportunities and risks. A stormwater utility could be a promising method to generate additional local funding. **Appendix C** includes more opportunities for local funding pathways beyond those discussed in this section.

THE CASE FOR DEDICATED FUNDING

Most external funding sources incentivize local "skin in the game" – local commitment to support funding of capital improvements. Private partners and entities are also more likely to contribute to endeavors that are supported in some way through local public investment. In 2019, the City of Boston's Mayor at the time, Marty Walsh, pledged to allocate a percent of the city's new capital improvements budget to climate resilience.[1] Municipalities and counties in NENJ could consider the same action to help encourage and leverage additional external funding.

RECOMMENDATION: CONSIDER IMPLEMENTING A STORMWATER UTILITY

In March 2019, the Stormwater Utility Law, officially known as the "Clean Stormwater and Flood Reduction Act," was signed into law in New Jersey. This law gives local and county governments and certain utilities the ability to create stormwater utilities that can assess fees and use the revenue to maintain stormwater management infrastructure. Jersey City, Newark, and Hoboken all are in the process of assessing the feasibility of stormwater utilities in their municipalities as a mechanism to fund and maintain stormwater infrastructure. Resilient NENJ recommends that the municipalities share lessons learned at the region level and consider collaborating around community engagement and advancement of the opportunities.

WHAT IS A STORMWATER UTILITY?

Typically, residents and property owners in an area pay fees to utility companies for services such as water, sewer, electricity, and gas. A stormwater utility creates the ability to assess fees to fund stormwater management programs, based on the approximate contribution of stormwater runoff from a property. A stormwater utility is like any other utility and can be a valuable tool for implementation of stormwater management practices for new and redeveloped areas. The utility could create incentives for retrofits on private property and provide dedicated funding for beneficial public stormwater projects and maintenance activities.

There are different types of stormwater utilities and varying strategies for calculating stormwater fees that can be explored. Stormwater fees are usually based on the impervious footprint of a property. While property taxes are solely based on the value of a property, the Clean Stormwater and Flood Reduction Act requires stormwater fees to be based on a fair and equitable approximation of proportionate contribution to stormwater runoff. Properties with more impervious area and thus those that contribute the most to stormwater runoff will pay higher fees than properties with minimal impervious area.

Credits can be used to provide incentives to implement best management practices and reduce a property's stormwater fee. These credits can improve equity during implementation and reward properties that manage stormwater on their own property or minimize impervious areas. Stormwater utility fees could reduce the pressure to raise taxes to fund critical improvements, provide a dedicated funding source for stormwater management, and create a more equitable allocation of costs because higher property values do not necessarily contribute higher amounts of stormwater runoff. Furthermore, tax-exempt properties are also responsible for paying stormwater fees based on their contributing runoff, making stormwater utilities more equitable.

EXAMPLE POSSIBLE LONGER-TERM OPPORTUNITIES TO INVESTIGATE AND CONSIDER

Due to the ubiquitous need for investment in resilience-related infrastructure, municipalities and their stakeholders nationwide are investigating creative options and long-term opportunities for funding.

Examples to GENERATE funding include the following:

- District for Resilience Improvements: Similar to a stormwater utility or special assessment district (see below), a District for Resilience Improvements could be focused on funding all resilience related improvements within a geography or region. A report produced by Boston's Green Ribbon Commission provides a detailed exploration of this model.[2]
- Citywide surcharges or fees: Options for a basis of assessment could be sales tax, hospitality fees, parking fees, and more.
- Special Assessments: Special assessments levy a portion of property value needed to make public improvements. Waterfront property owners, and those within the future flood area, could be offered subsidies if the owner contributes resources to project construction. Massachusetts I-Cubed program levees special assessments on developers' property to pay for economic development projects.

The following are potential longer-term opportunities to explore to support financing of projects:

- Crowdfunding "minibonds": The City of Denver undertook a successful "minibond" program to permit smaller scale investments by Colorado residents in its Better Denver program. The bonds were offered at amounts as low as $500 and allowed investors to earn returns several times what was being offered on savings certificates of deposit (CDs), while investing in projects that would benefit the community. Other cities are using new online platforms such as Neighborly or Infrashares to package and sell bonds to smaller scale investors.
- Outcome-Based / Social Impact Bonds: In the infrastructure context, outcome-based bonds can be used to repay investors if infrastructure achieves a desired social goal, such as runoff or emissions reduction. The DC Water Green bond, which will help fund green stormwater infrastructure, is the first example of applying this kind of approach to an infrastructure solution
- Green / Sustainability Bonds: In September 2017, the Massachusetts Bay Transportation Authority (MBTA) issued the first tax-exempt sustainability bond in the nation, valued at $370 million, certified to the ICMA (International Capital Markets Association) standard, and was able to secure lower interest rates. In the last few years the New York Metropolitan Transportation Authority (MTA) issued several green bonds totaling over $300 million, certified to the Climate Bonds Initiative standard.
- Community Based Public Private Partnerships (CBP3s)[3] – CBP3s involve contracting with a private entity that will fund the implementation of a project up front, maintain a solution, and be paid on a performance basis.

[1] https://www.boston.gov/news/278-billion-be-invested-boston-neighborhoods-through-fy20-24-capital-budget

[2] *Expanding Boston's Capacity to Build Coastal Resilience Infrastructure Lessons from the Seaport District, April 2020.* https://greenribboncommission.org/document/expanding-bostons-capacity-to-build-coastal-resilience-infrastructure-lessons-from-the-seaport-district/

[3] https://www.epa.gov/G3/financing-green-infrastructure-community-based-public-private-partnerships-cbp3-right-you#:~:text=A%20CBP3%20is%20a%20partnership,provide%20flexibility

SHARING THE BURDEN

PARTNER: PRIVATE PATHWAYS FOR FUNDING CAPITAL PROJECTS

Private property owners have incentive to act to reduce direct (e.g., through damage) and indirect (e.g., through loss of value from repeated flooding or increased insurance costs) climate-related risk to their properties in the near, mid, and long term. Through coordination and refinement of private development and redevelopment plans, private investment could both contribute to a broader district vision and increase the resilience of individual properties. Property owners can take direct action on their properties or integrate improvements through natural repair and replacement cycles, such as for bulkheads. Adjacent property owners with shared risk could consider establishing a sinking fund through a memorandum of agreement for resilience expenditures, which may cover annual operations and maintenance costs, debt repayment, or direct capital investment, depending upon timing of project implementation. Public private partnerships are a possible mechanism to support funding of projects.

WHAT IS A SINKING FUND?

Sinking funds are common methods to fund infrastructure improvements made necessary through development over time. A sinking fund is a fund formed by periodically setting aside money for use over time or at a future date, or an agreement to fund actions once certain criteria are met. The model could apply to redevelopment areas or areas of private ownership and shared risk, in particular.

THE NEED TO **PREPARE**

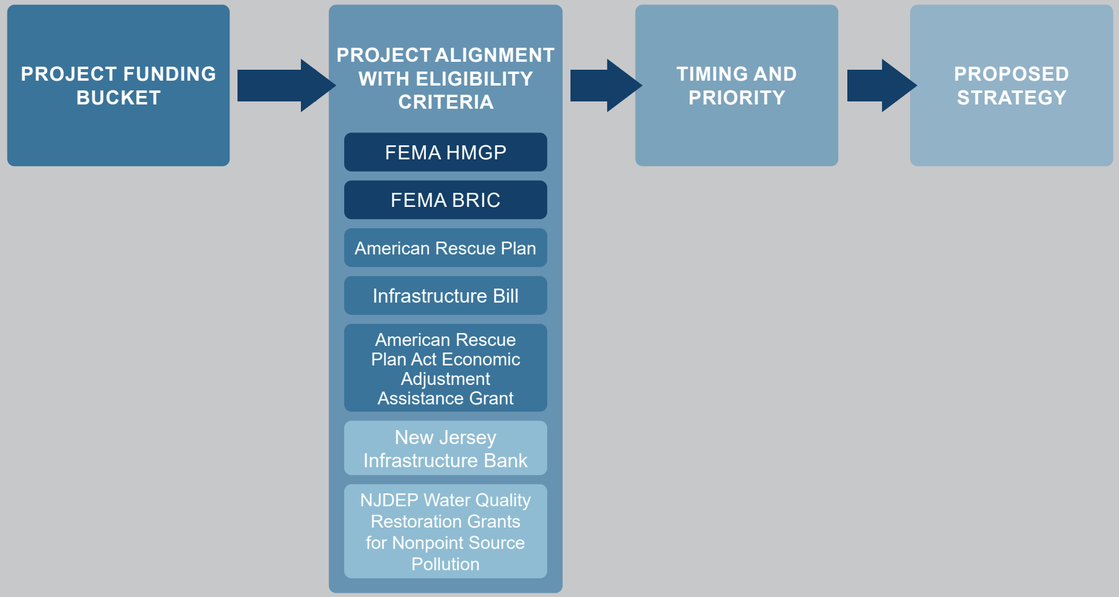
Post-disaster is an intense and urgent time for everyone who has been affected by an event, and crises do not provide the best opportunities for wise decision making. By their very nature, crises require ***reactive*** as opposed to ***proactive*** decision making. Nevertheless, post-disaster periods bring a lot of political willpower, funding, and momentum to create change. This energy can yield the most long-term benefit when informed by both urgent needs made apparent from the disaster and existing plans developed through a thorough investigation of best available science and robust engagement strategies. Immediately post-disaster, it could be beneficial to convene a working group through Resilient NENJ to prioritize proposed projects for funding pursuits.

FUNDING SOURCES TO **PURSUE**

State and federal agencies offer multiple grant and loan programs. Additionally, the Infrastructure and Investment Jobs Act (IIJA), or Bipartisan Infrastructure Law, has made available billions of dollars in funding for resilience focused projects over the next five years. Funding sources have different availability, eligibility criteria, focuses, and timeframes which means that not just any source can be used towards any project. Appendix C contains detailed information on these factors for various funding sources.

HOW DO WE DECIDE WHAT FUNDING TO **PURSUE** FOR A GIVEN ACTION?

SAMPLE PROJECT-FUND MATCHING



FEDERAL GRANTS

Federal grants are a common mechanism for resilience-related improvements. Below are some key examples, divided by category and type of availability. **Appendix C** provides additional details.

- Post-disaster federal funding programs
  - FEMA Public Assistance (specifically 406 and Alternate Procedures)
  - HUD Community Development Block Grants for Disaster Recovery or Mitigation (CDBG-DR or CDBG-MIT)
  - FEMA Hazard Mitigation Grant Program (HMGP)
- Programs funded through recent congressional appropriations
  - American Rescue Plan Act (ARPA) funds
  - US Department of Energy, Energy Efficiency and Renewable Energy funding
  - USDOT PROTECT
- Annual competitive programs
  - FEMA Building Resilient Infrastructure and Communities (BRIC)
  - National Fish and Wildlife Foundation (NFWF) Grants
  - EPA Brownfields funding

FEDERAL ALLOCATIONS

Resilient NENJ recommends that the USACE HAT study integrate Action Plan recommendations. This could provide another opportunity to help accomplish coastal flood protection goals.

While much of the funding from the Bipartisan Infrastructure Law and Inflation Reduction Act (see **Appendix C**) will be moving through existing state and federal programs, these bills are examples of the type of congressional action needed to support Resilient NENJ recommendations. Congress could also consider direct allocations to fund regionally coordinated and organized efforts like Resilient NENJ, which provide streamlined pathways for implementation and remove resources wasted competing for limited funds.

FEDERAL PROGRAM HIGHLIGHTS

FEMA's BRIC program and HUD's CDBG-DR programs have both already supported funding for Resilient NENJ related initiatives. CDBG-DR funds supported the initial Resilient NENJ planning effort, and BRIC funding will support implementation of the Ironbound Resilience Hub, Bayonne's Cottage Street Park improvements, Bayonne's 63rd Street Pumping Station, and the expansion of Hoboken's Southwest Resiliency Park (for more on these efforts, see **Section 2.0**).

[4] *See **Section 2.0** for more on the HAT study, as well as the website:* https://www.nan.usace.army.mil/Missions/Civil-Works/Projects-in-New-York/New-York-New-Jersey-Harbor-Tributaries-Focus-Area-Feasibility-Study/

STATE GRANTS AND LOANS

The State of New Jersey also has a number of funding opportunities that can be explored. **Appendix C** provides additional details.

- Shore Protection Grants and Loans
- Urban Park Grants
- Green Acres Program
- Blue Acres Buyout Program
- Clean Communities Grant
- Water Quality Restoration Grants, Nonpoint Source Pollution
- Environmental Infrastructure Financing Program
- Shore Protection Grants and Loans
- Natural Climate Solutions Grant
- Infrastructure Bank (I-Bank)

STATE ALLOCATIONS

The State receives federal congressional allocations post-disaster, such as through the American Rescue Plan Act, which responded to the pandemic, as well as through non-disaster allocations, such as through the Bipartisan Infrastructure Law. Balanced against other needs in the state, the urgency of need in the Northeastern NJ region coupled with its history of environmental justice issues necessitates that the area be a focus of the State's decision making around such funding opportunities.

Further, the process of scraping together federal appropriations and grants, existing state grants, and local funding to accomplish major infrastructure projects is arduous and could delay projects that are urgent, now. The State could consider a state congressional appropriation to fund initial designs and feasibility studies to help catalyze action, as needed.