Building Vibrant Communities in a Time of Changing Climate

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Responding to Climate Impacts

Natural and Nature-based Approaches - actions to protect, sustainably manage, or restore natural or modified ecosystems as solutions to societal challenges.
Vibrant Communities

- Define outcomes
- Resilient
- Safety from hazards: flooding, wave driven damage, pollution
- Connection to nature through open spaces
- Publicly accessible connection to Public Trust waters
- Strong locally based economy
- Affordability
NATURE PROTECTS PEOPLE

Coral Reefs
- Reduce 97% of wave energy—acting as a barrier from storms
- Coral Reefs save communities $85,000 per year per hectare when used in place of artificial breakwaters

Mangroves
- Reduce 66% of wave height—easing erosion and flood risk
- Natural Barriers Save Money and reduce impacts of storms, erosion and flooding to coastal communities

Oyster Reefs
- Provide coastal protection from flooding for 63,000,000 people globally

A Single Marsh
- Can generate 253 kilograms of shrimp, and 170 kilograms of blue crab per hectare
- A single hectare of seagrass generates some 30,000 additional fish for the community annually
Wetland Restoration & Protection
Dunes
Greenways
Green Stormwater Infrastructure

Rain Gardens
Oyster Reefs and Offshore Structures
Blue Acres and Acquisition of Flood Prone Areas
Why Living Shorelines?

Primary reason = Shoreline stabilization

Secondary benefits:
- Flood mitigation
- Habitat
- Aesthetics
- Carbon sequestration
- Adaptability to changing conditions

NOAA - Beaufort
Examples

Marsh sills made of oyster shell bag, used with revegetation.

Coir logs

Prefabricated oyster reefs

Mesh bags of oyster shells piled to form a breakwater
Starting Presumptions

- Practices are established and proven
- Adaptation to impacts of climate change and mitigation of carbon pollution through natural and nature-based approaches can provide significant co-benefits
- Strategies must be part of a comprehensive response & must take place at an unprecedented scale - think “space race”
- Connect people to nature - key to vibrant communities
Challenges

- Many of the most vulnerable communities disadvantaged
- Governance framework - plan, prioritize, focus areas
- Scale
- Offsetting continued sprawl and overdevelopment
- No consistent/stable public funding source
Opportunities

- Federal Bipartisan Infrastructure Act/Inflation Reduction Act funding
  - White House release of “Road Map for Nature-based Solutions to Fight Climate Change, Strengthen Communities and Support Local Economies” 11/08/22
  - FEMA Building Resilient Infrastructure and Communities (BRIC) grant program
  - Climate Ready Coasts Initiative (NOAA)
- Development/redevelopment ongoing
- Strong public consensus about need to act on climate
- Bills to expand Shore Protection Fund and create new funding in Legislature; Stormwater Utilities authorized
- Climate Change Resiliency Strategy and policies
- Resilient NJ program: planning at regional scale
Thank you

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