



Integrating Nature-based Solutions into Hazard Mitigation Plans and Disaster Recovery: Creating Resilient and Sustainable Communities

William Drew Parker, US EPA Region 4



Why Plan?

Developing hazard mitigation plans enables state, tribal, and local governments to:

- Increase education and awareness
- Build partnerships that support risk reduction
- Identify risk reduction strategies
- Align risk reduction with other policy objectives
- Focus resource allocation to meet greatest need
- Communicate priorities to potential sources of funding



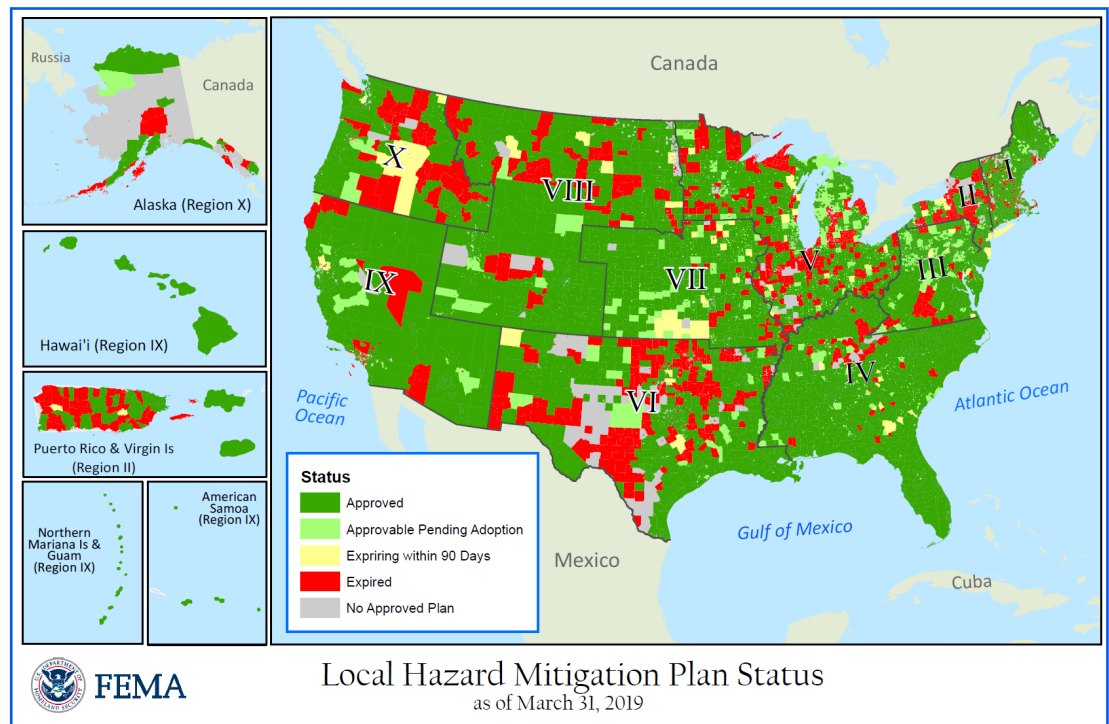
National Snapshot

87% of the nation's population lives in communities with current* mitigation plans

50 states, DC, and five territories

21,073 local governments

187 tribal governments



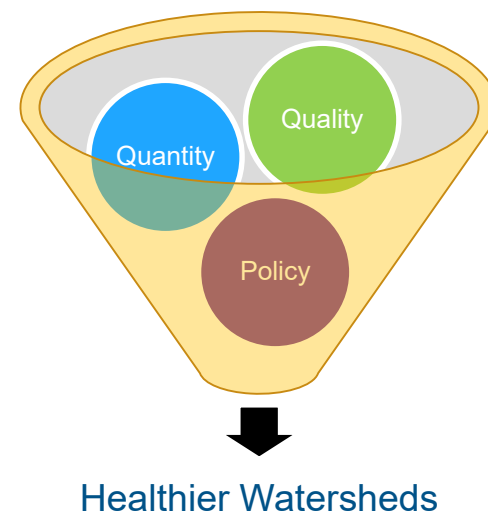
* FEMA-approved or approvable-pending-adoption

EPA Region 4 Kentucky Planning Partnership Pilot: Project Goals

Integrate and institutionalize Green Infrastructure/Low Impact Development (GI/LID) into the state hazard mitigation planning process

Identify areas where implementation of mitigation projects will address water quality, water quantity, and public health issues

Promote and educate local communities on the co-benefits of GI/LID



Exploring Integration of EPA and FEMA Programs

Water Quality Planning		CRS Program Activity	Hazard Mitigation Planning	
CRS Activity Can Provide Valuable Information for Water Quality Planning	Information in Water Quality Planning Could Inform Achievement of the CRS Activity		CRS Activity Can Provide Valuable Information for the Mitigation Plan	Information in the Mitigation Plan Could Inform Achievement of the CRS Activity
		310 Elevation Certificates		•
		320 Map Information Service	•	
•	•	330 Outreach Projects	•	•
		340 Hazard Disclosure	•	
	•	350 Flood Protection Information	•	
		360 Flood Protection Assistance		•
		370 Flood Insurance Promotion		
		410 Flood Hazard Mapping	•	•
•	•	420 Open Space Preservation	•	•
	•	430 Higher Regulatory Standards	•	
•	•	440 Flood Data Maintenance	•	
•	•	450 Stormwater Management	•	•
•	•	510 Floodplain Management Planning	•	•
•	•	520 Acquisition and Relocation	•	
•	•	530 Flood Protection	•	
•	•	540 Drainage System Maintenance		
•		610 Flood Warning and Response	•	
•	•	620 Levees		•
•	•	630 Dams		•



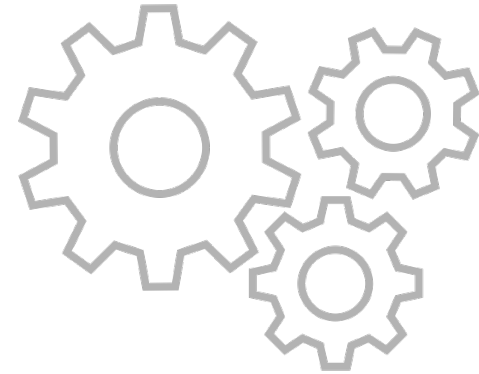
Path Forward

Leverage mitigation planning process more effectively for driving mitigation actions.



Implementation

Guiding mitigation investments



Integration

Influencing community decisions

Hurricane Michael Disaster Recovery

The Recovery and Resiliency Partnership (RRP) is a project of the U.S. Environmental Protection Agency (EPA), Region 4; the U.S. Federal Emergency Management Agency's (FEMA) Interagency Recovery Coordination (IRC) field operations; and Mexico Beach, Florida to support coastal recovery from Hurricane Michael and improve Mexico Beach's future resilience to stormwater impacts.





RECOVERY AND RESILIENCY PARTNERSHIP MEXICO BEACH

STORMWATER MANAGEMENT AND GREENSPACE PROJECT

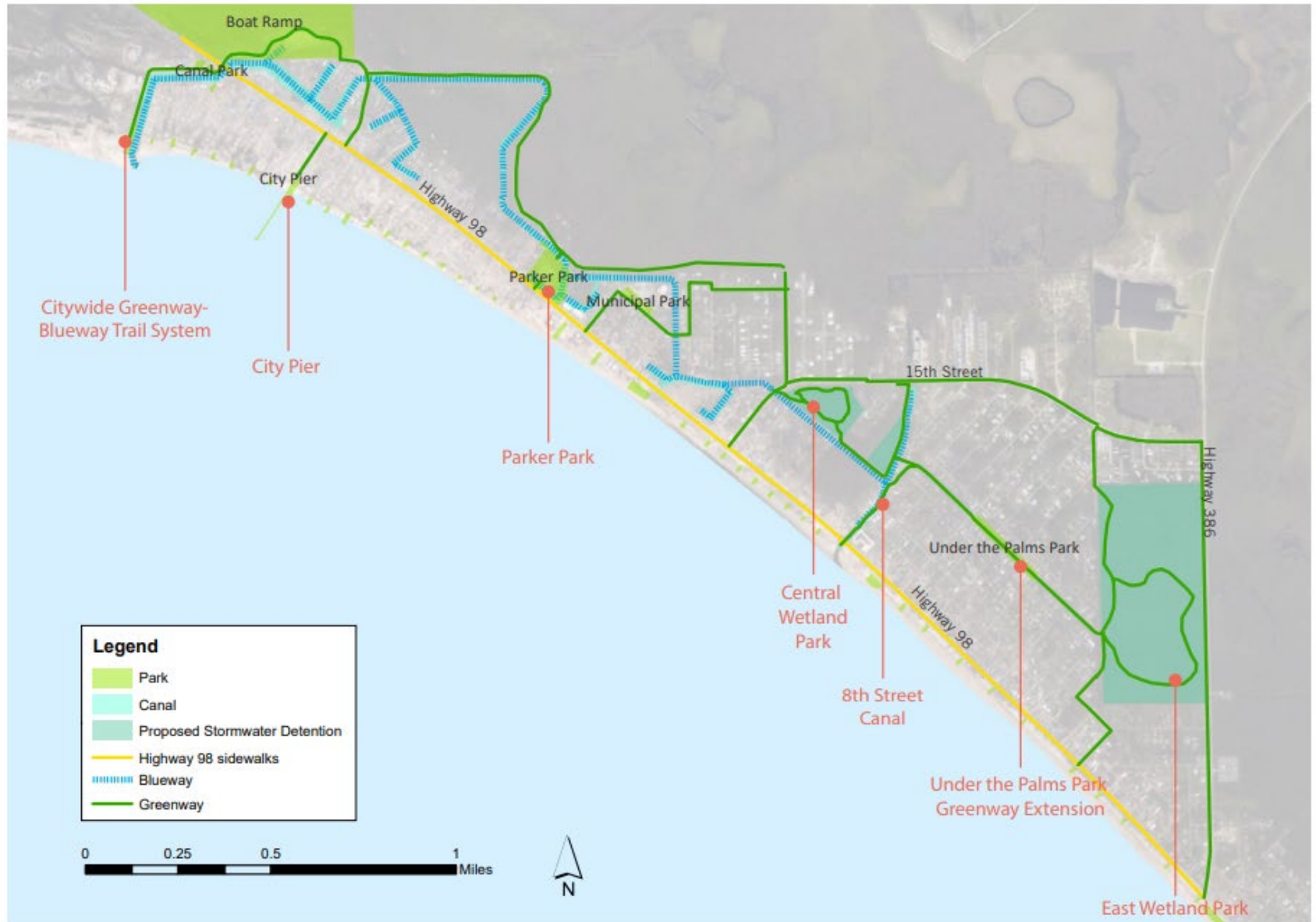
MEXICO BEACH, FLORIDA

DECEMBER 2019



Site Locations

The design strategies and concepts for the project sites and the citywide greenway-blueway trail system focus on increasing resilience and enhancing community by improving stormwater management, alternative transportation and opportunities for economic development.



Outcomes from Mexico Beach RRP

- ❖ Stormwater and greenspace projects provide tangible benefits to help post-storm cities like Mexico Beach pursue projects that will accelerate revitalizing their communities and increase physical and economic resilience for future storm events.
- ❖ Using the stormwater and green space project concepts and supporting information, Mexico Beach has pursued numerous funding opportunities.
- ❖ The concepts helped the city secure financial commitment and support from the Army Corps of Engineers for ~\$3M to conduct modeling and begin construction design for implementation.
- ❖ The environmental and ecological benefits of integrating resilient, nature-based stormwater and greenspace solutions, as well as the benefits to community health and wellness by integrating recreation amenities with the solutions, will bolster vulnerable communities like Mexico Beach in the event of future storms.

Next Steps In Collaboration

The Recovery and Resiliency Partnership Projects (R2P2) will focus on produce similar reports 5 additional communities impacted by Hurricane Michael:

- Marianna, FL
- Parker, FL
- Springfield, FL
- Chattahoochee, FL
- Quincy, FL



Thank You



The first rule of sustainability is to align with natural forces, or at least not try to defy them.

- Paul Hawken
*Natural Capitalism:
Creating the Next
Industrial Revolution*



W. Drew Parker, parker.william@epa.gov