



Green and Resilient Infrastructure Planning (GRIP): Get a GRIP on RI's Coastline

Funding for this project is provided by the Department of the Interior through a grant from the National Fish and Wildlife Foundation's Hurricane Sandy Coastal Resiliency Competitive Grant Program



Multi-Functional Design Concepts for Coastal Stormwater Management Master Plan

The Place: Oakland Beach, Warwick RI

Oakland Beach overlooks Narragansett Bay and is an important recreational, historical, and economic hub in Warwick. Popular for saltwater swimming and fishing, this public beach is a destination with neighboring attractions such as restaurants and a boat access ramp.



The Problem: Water Quality, Beach Closures, and Flooding

Oakland Beach has impaired water quality and is vulnerable to coastal flooding, storm surge, and sea level rise. Rain runoff from residential and commercial development upland of Oakland Beach contribute to stormwater and water quality problems, resulting in frequent beach closures that in turn raise health, safety, and economic concerns.

The Solution: Green Infrastructure/Multi-functional Stormwater Management

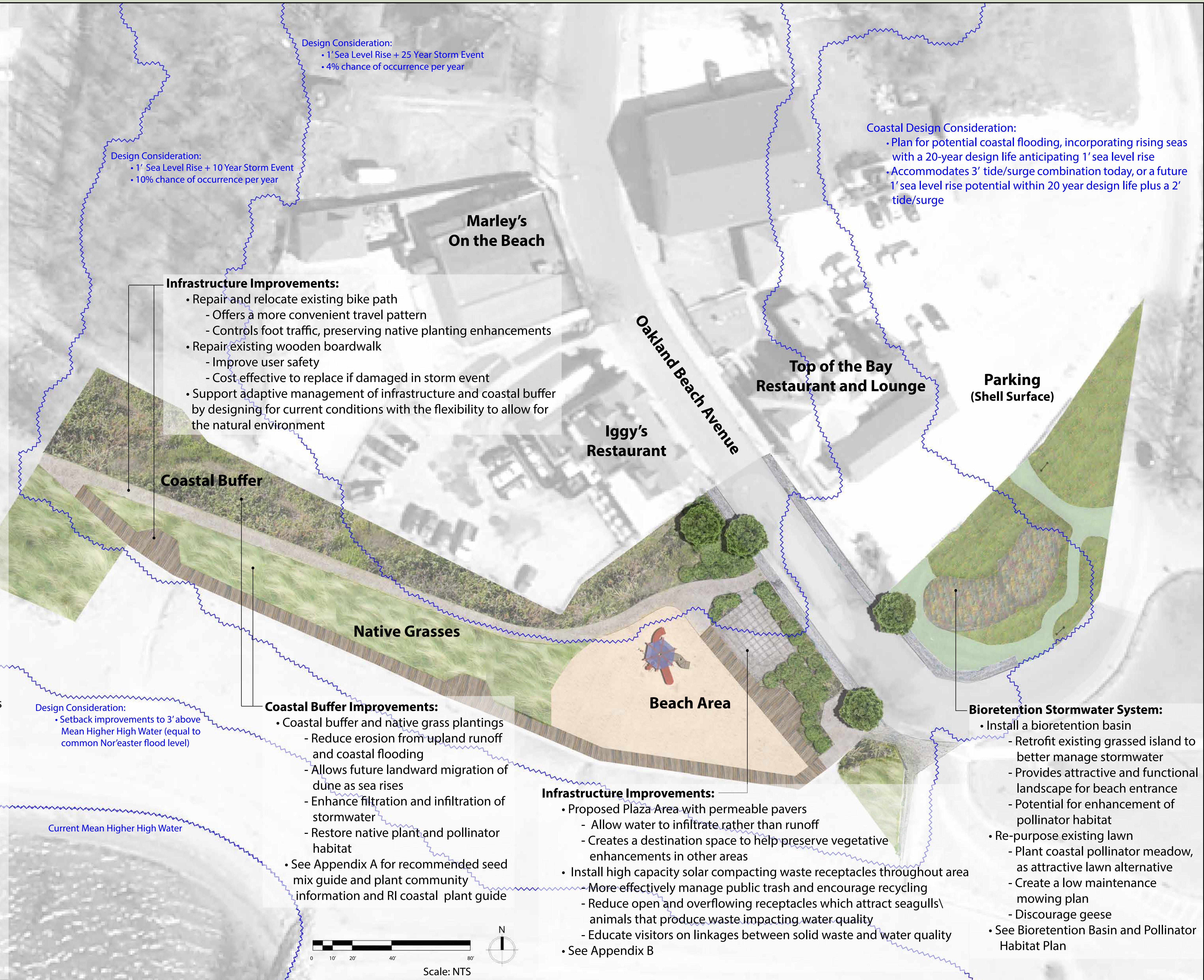
- Green Infrastructure is a nature-based adaptation tool for:
 - Stormwater filtration and infiltration
 - Addressing shoreline erosion and supplementing existing grey infrastructure
 - Restoration and enhancement of habitats
- Uses designed or engineered systems that allow soil and vegetation to capture water where it falls
- Aims to preserve natural hydrology of watershed
- Reduces stress on and need for traditional "grey" or "hard" design solutions
- Is applied and adaptable at different scales

Opportunities and Benefits: Community

- Implementing elements of nature-based solutions with engineered solutions on Oakland Beach will:
- Decrease beach closures from pollution
 - Increase economic vitality of local business with fewer beach closures
 - Reduce and manage storm water flooding
 - Provide habitat for native plant communities and pollinators
 - Create opportunities for public education and awareness
 - Enhance aesthetics of the area and the beach/park user's experience
 - Increase public health and safety
 - Recognize, support, and enhance historic uses

Opportunities and Benefits: Municipal

- Provide cost effective and practical solutions
- Reduce number of beach closures
- Reduce contaminants to impaired coastal waters & shellfish habitats
- Support goals of Phase 2 stormwater regulations
- Preserve important habitat and natural areas
- Reduce pressure on aging grey infrastructure
- Create health and social benefits
- Support for jobs, local business hubs, and economic vitality
- Encourage more efficient maintenance requirements



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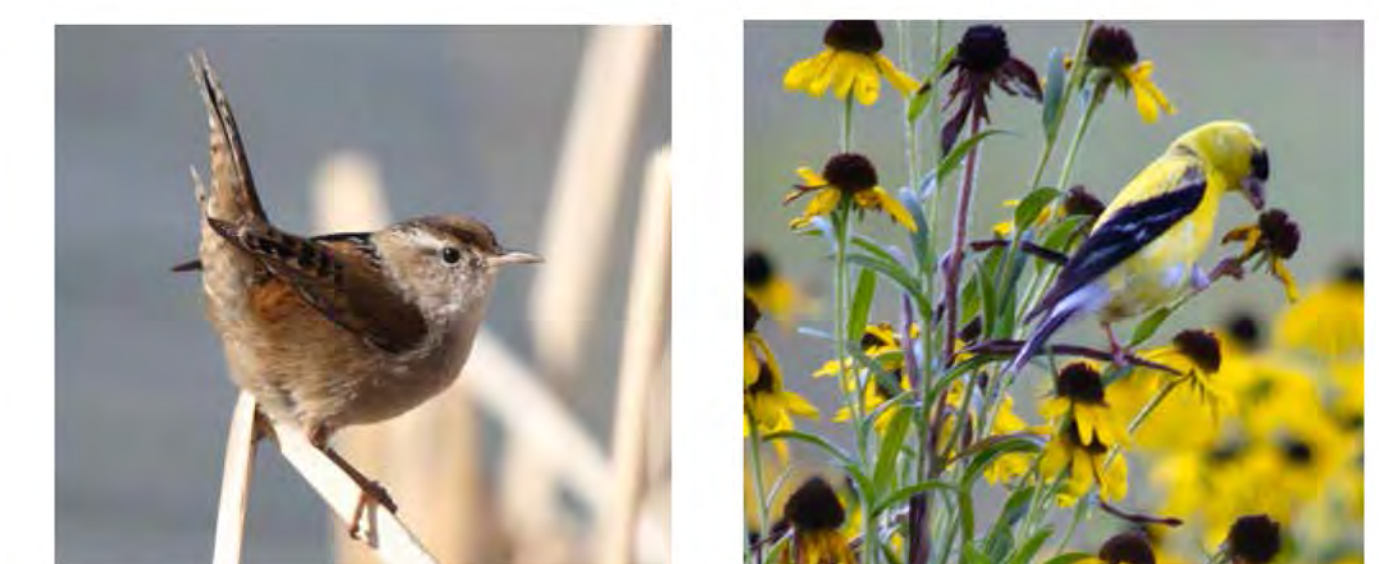
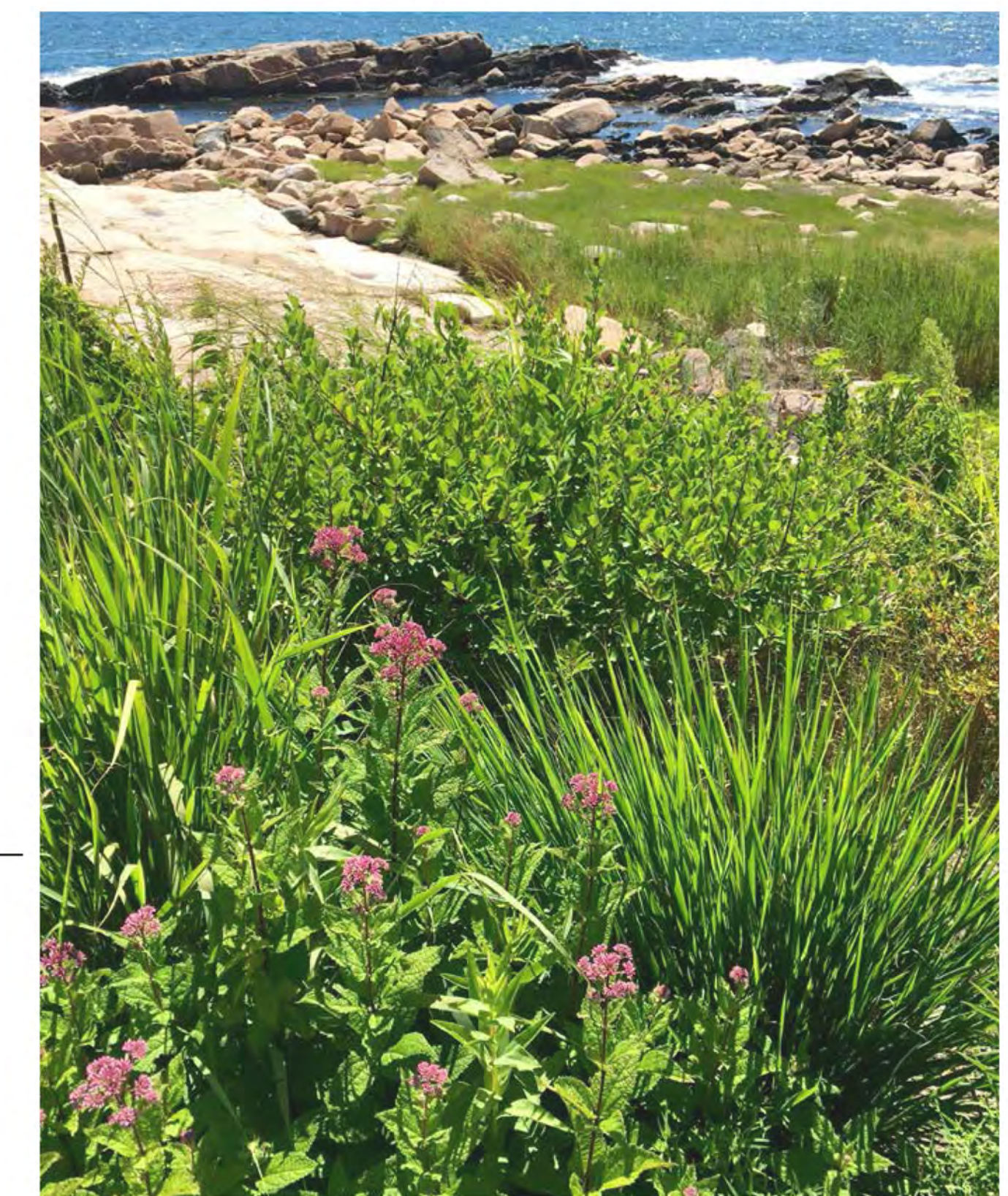
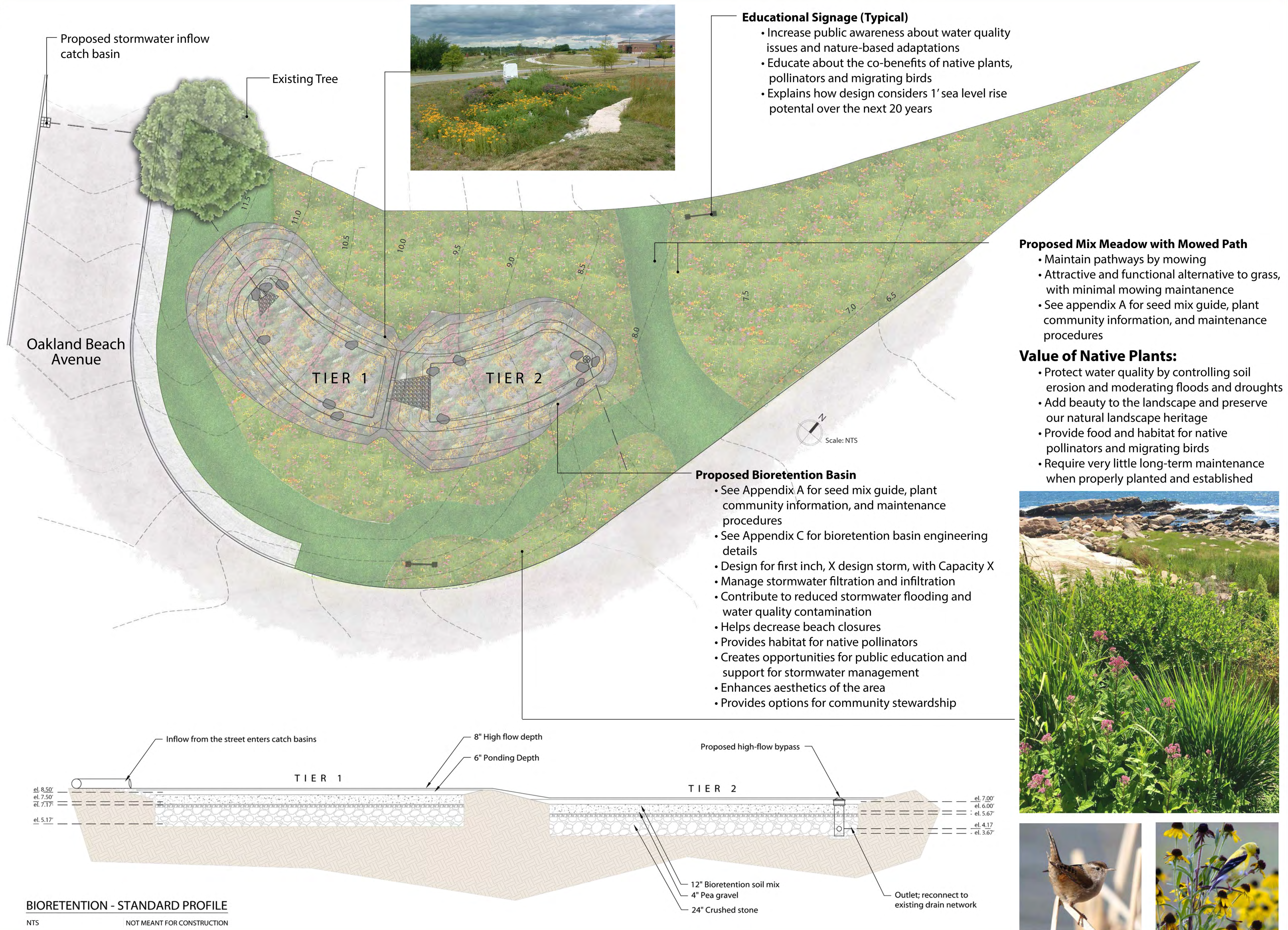
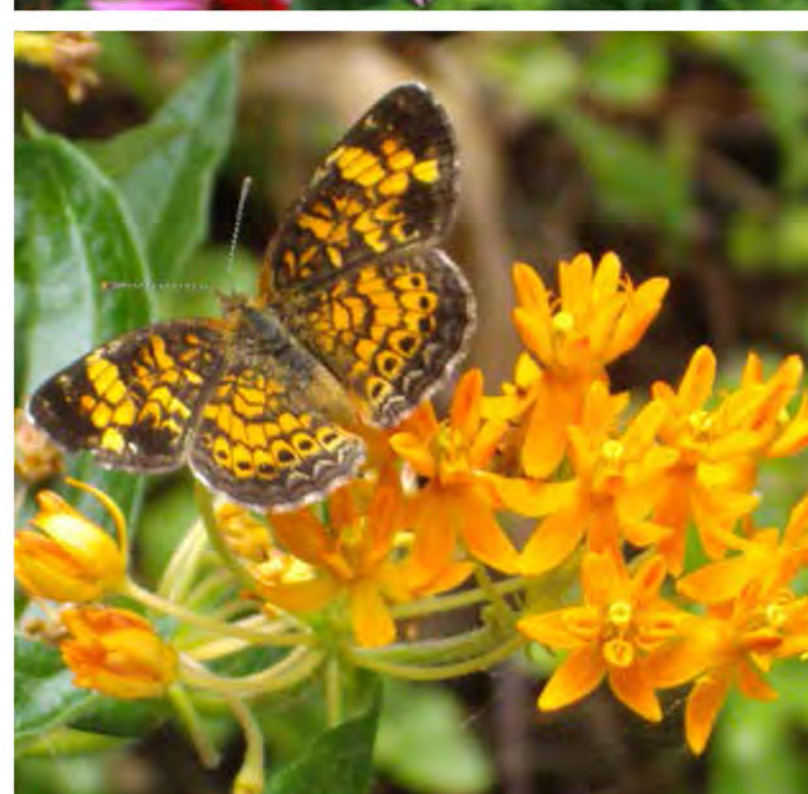
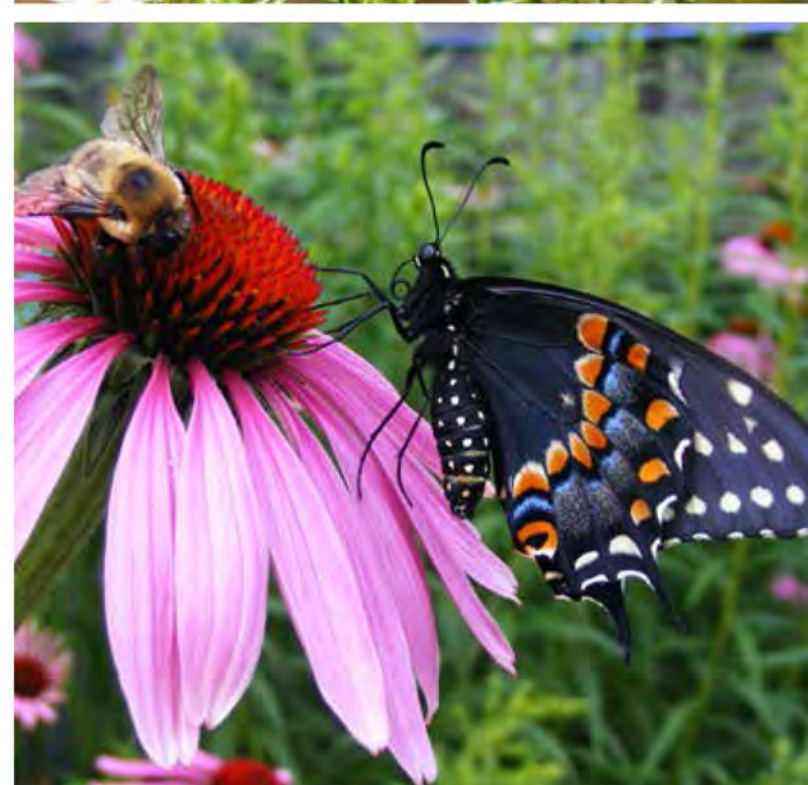
Bioretention Basin and Pollinator Habitat Plan



The stormwater runoff from the watershed is captured in the proposed bioretention basin and pollinator meadow.

Value of Native Pollinators:

- Contribute to the success of diverse and healthy plant communities
- Contribute to pollination for farm and garden harvests
- Key to a number of environmental services and food webs



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