Living Shorelines & Seawall Enhancements in Pinellas County

Stacey Day, PhD
Division of Environmental Management

Our Vision: To Be the Standard for Public Service in America
Living Shorelines/Seawall Enhancements

- Living shoreline basics
- Ozona demonstration project
- Next steps in Pinellas County
What is a living shoreline?

**Shoreline protection** using natural materials such as oyster reefs, mangroves, or marsh grasses to stabilize an area and prevent erosion, rather than hardened materials such as a concrete seawall.
Traditional seawall

Provides protection, but issues with:

• Wave energy
• Water clarity
• Habitat
• Living organisms
• Lifespan
• Costs

‘Hard’ infrastructure like retaining walls abruptly severs the ecological connection between the coast and water.
Natural shoreline

Protection plus improved:
• Wave energy
• Water clarity
• Habitat
• Water quality
• Lifespan
• Costs

Not only do Living Shorelines defend land against destructive waves, but they also provide crucial habitat for fish and wildlife.
Hybrid / enhanced shoreline
• Nearly 600 miles of waterfront (natural and manmade canals)
• Approximately 340 miles of hardened seawall, much of it old
• Many community assets vulnerable to storms and rising sea levels
• Pinellas County is currently updating comprehensive plan and will be creating a Sustainability and Resiliency Action Plan

One of the Primary Goals:

To increase the resiliency of both natural and built environments
Ozona Seawall Enhancement Project

- Demonstration project & education opportunity
- Unincorporated Palm Harbor
Ozona Seawall Enhancement Project

- Existing County-maintained seawall facing west at corner of two roads in Palm Harbor
- Popular spot for people to watch the sunset
- 33 meters long – relatable to homeowners
Steps to Create Living Shoreline

- **Site analysis**: Hired consulting firm to do coastal conditions analysis, preliminary design, and assist with permitting

- **Final design and purchase supplies**: After permits received, finalize design to determine components needed

- **Installation**: Set date, solicited volunteers, and installed
Ozona Seawall Enhancement Project

Installed 275 oyster bags and 7 reef balls
Planted 100 black needlerush (*Juncus*) and 100 smooth cordgrass (*Spartina*)
Created and mounted 2 educational signs on railing

Also have brochures for homeowners
Ozona Seawall Enhancement Project

Before

After
Steps and Costs

• Hired consulting firm to do coastal conditions analysis, design, and permitting = ~$30K

• Bought supplies = ~$3K
  • 275 oyster bags from Shuck & Share in New Smyrna Beach ($5 each)
  • 7 concrete reef balls from Tampa Bay Watch ($65 each)
  • 200 plants (100 cordgrass and 100 needlerush) ($1 each)

• Set date, solicited volunteers, and installed = FREE

• Maintenance = will plant some more cordgrass = $100
Challenges

Permitting!

• Army Corps of Engineers
• SWFWMD or FDEP
• County (if not County project)

_Takes longer than you think it will, even if a simple project!

Pre-application meetings can shorten the process since potential questions/issues can be addressed ahead of time.
Challenges

Land ownership determination

- **Good to know this before apply for permit**
- **May not be clear**
- **If any private ownership, will need permission, easement, or similar**
- **If State-owned submerged land, need authorization**
Next project

Philippe Park Demonstration

Philippe Park Living Shoreline

- TBERF funding to create oyster bar, plant marsh grasses and install oyster bags along shore, install breakwaters in cove area
NORTH EXTENT OF WAVE ATTENUATION BARRIERS
N 1336304.09
E 437888.70
NAD 83/90, STATE PLANE WEST, U.S. FEET

AREA 3 - OYSTER BAGS WITH PLANTINGS (NORTH)

PROPOSED STAGING AREA
70' x 75'

AREA 1 - OYSTER BAGS WITH PLANTINGS (SOUTH)

LEGEND:
OYSTER BAGS (620 LF TOTAL)
OYSTER MOUNDS (0.64 ACRES)
RIP RAP/PRECAST CONCRETE UNITS (0.4 ACRES)
PLANTED MARSH (0.29 ACRES TOTAL)
PROPOSED STAGING AREA (0.12 ACRES)

AREA 4 - WAVE ATTENUATION BARRIERS
TEN 75' SEGMENTS
SPACED 25 FT APART
1.5 FT MEDIAN RIP RAP DIAMETER

SOUTH EXTENT OF WAVE ATTENUATION BARRIERS
N 1335493.04
E 435324.74
NAD 83/90, STATE PLANE WEST, U.S. FEET

AREA 2B - OYSTER MOUND (LOOSE SHELL)

AREA 2A - OYSTER BAGS
Next project

Philippe Park Seawall Enhancement

- NFWF funding to design multiple options to enhance seawall
- Technical working group to help create decision matrix to prioritize projects in Pinellas County
- Monitoring and education components
Additional Info

General and Examples:
http://floridalivingshorelines.com
https://www.livingshorelinesacademy.org/

Permitting:
http://edis.ifas.ufl.edu/sg187
https://edis.ifas.ufl.edu/sg189

Stacey Day
sday@pinellascounty.org