



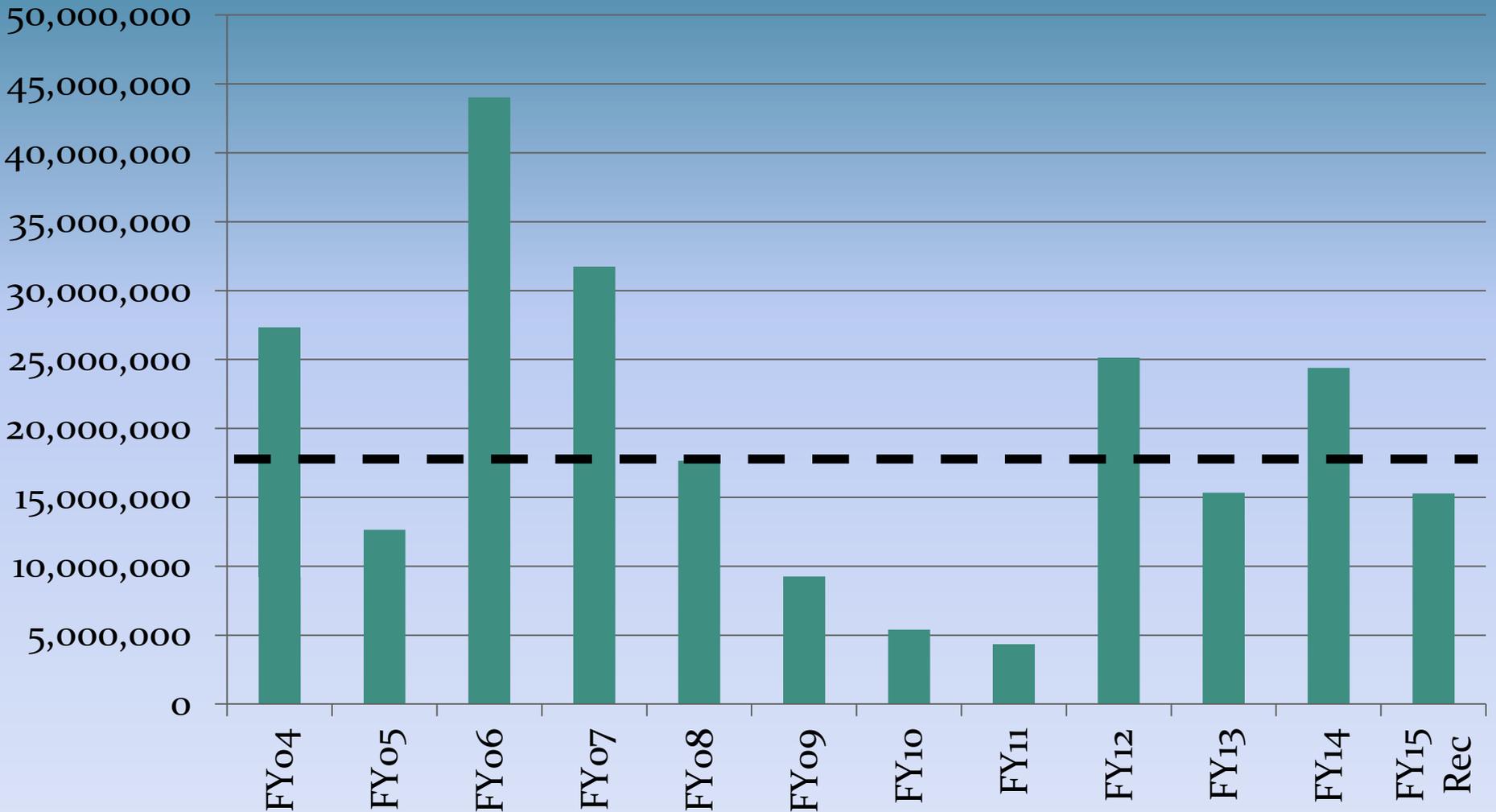
**DNREC Fiscal 2015
Capital Improvement Program Hearing
March 6, 2014**

FY2015 Governor's Recommended Capital Budget \$15,279,200



• Dam and Dike Repair/Replace	\$1,900,000
• Park and Wildlife Critical Facility Maint/Rehab	3,500,000
• Shoreline and Waterway Management	1,140,500
• Tax Ditch / Public Ditch	1,148,700
• Trails and Pathways	2,700,000
• Strategic Sites – NVF and Ft. DuPont Redevelopment	2,900,000
• Delaware Bayshore Initiative	500,000
• Critical Equipment and Minor Capital Improvements	740,000
• Owens Station	750,000

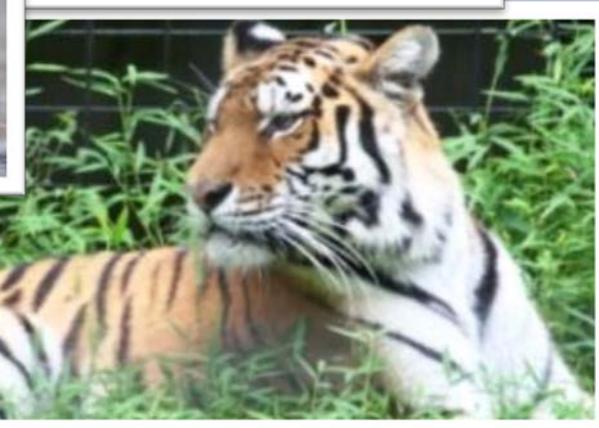
DNREC Capital History





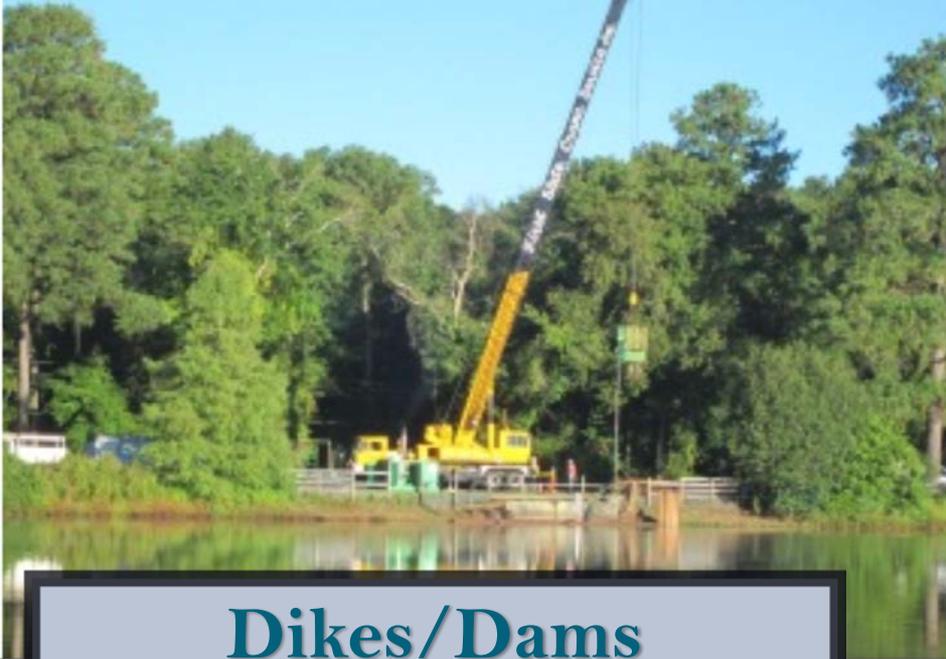
Focused on protecting and enhancing Delaware's natural and recreational resources

- Managed lands = nearly 100,000 acres
- Recreational areas = 32 park and wildlife areas, 10 preserves, 92 other conservation easements, Brandywine Zoo, Baynard Stadium
- Wildlife Recreation Participants = ~450,000
- Freshwater ponds and marine fishing access areas = 57
- Miles of roads = 109+
- Miles of trails = 213+
- Miles of managed shoreline = 56
- State-owned dams = 42
- Tax ditches = 2,000 miles
- Park Attendees = ~5.1 million visitors
- Anglers (registered) = 123,382
- Hunters (registered) = 20,366
- Boaters (registered) = 58,541





Drainage & Storm Resiliency



Dikes/Dams



Drainage Projects



Wetlands



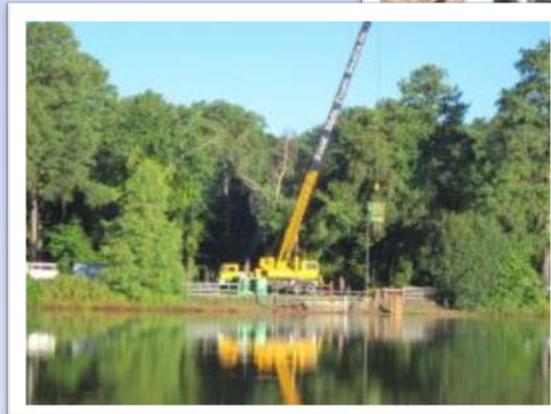
Tax Ditches

Critical Infrastructure & Resiliency



FY2015 Dam and Dike Repair/Replacement - \$1.9M

- Provides emergency planning, monitoring, engineering, and maintenance repairs to state-owned dams and dikes
- Protects communities and infrastructure
- Highest priority for dam safety - Hearn's
- Additional operating and repair projects:
 - Trap Pond
 - Chipmans Pond
 - Concord Pond
 - Craigs Mill Pond
 - Mudmill Pond
 - Hudson Pond
 - Garrison Lake
 - Records Pond



Critical Infrastructure & Resiliency



FY2014 Accomplishments

- Rebuilding dikes near the city of New Castle:
 - Red Lion (also HSCA) – Completed 2013
 - Buttonwood – March 2014
 - Broad Dike – March 2014
 - Gambacorta – April 2014
 - Army Creek – April 2014
- O&M and EA Plans are under development for post-construction maintenance and inspection of all 5 structures and their acceptance in the USACE-RIP Program.
- Full statewide dikes inventory planned for 2014
- Hearn's rehabilitation will begin fall 2014 under cooperative agreement between DNREC and DelDOT



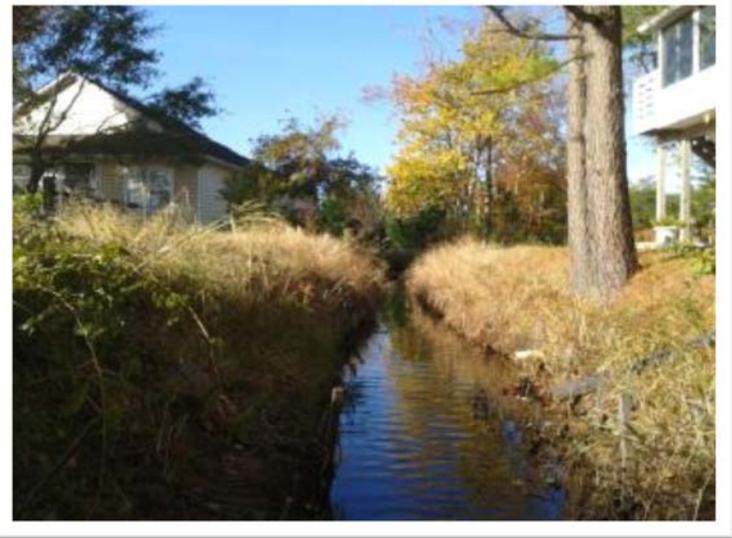
Critical Infrastructure & Resiliency



Tax Ditch / Public Ditch - \$1.4M

Provides support to 240 organizations on drainage infrastructure, channels, and related water management projects statewide:

- Planning, surveying & engineering
- Permitting and construction inspections

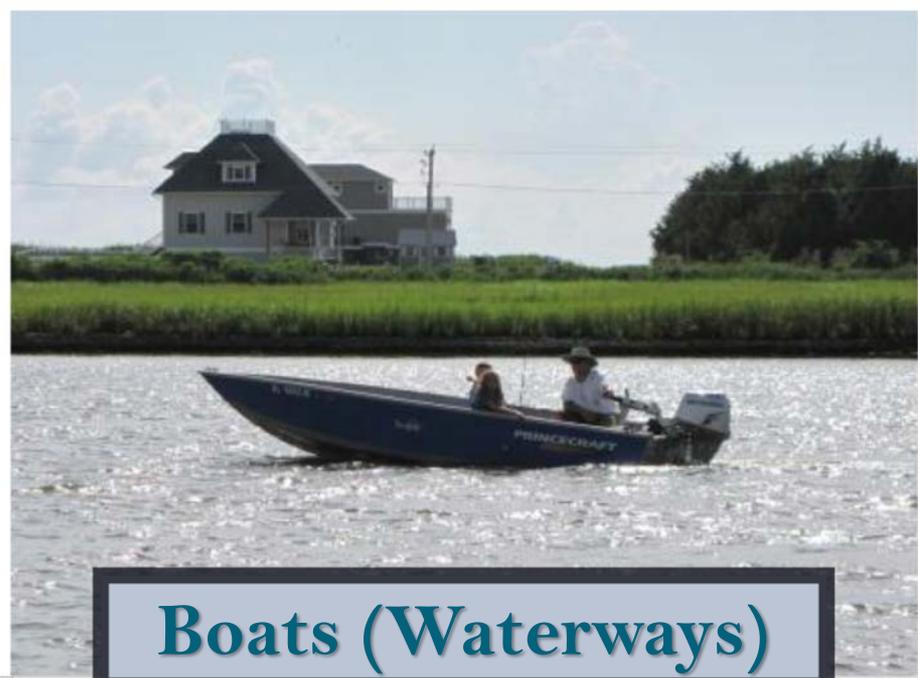


Tourism Assets & Healthy Families





Beaches



Boats (Waterways)



Bikes (Trails/Parks)



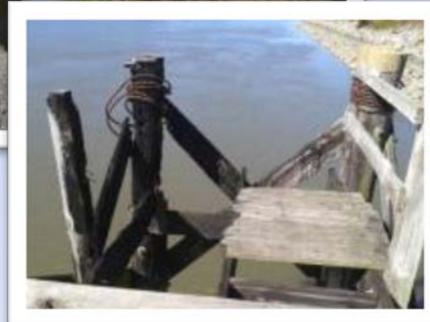
Birds (Wildlife)

Tourism Assets & Healthy Families



FY2015 Park and Wildlife Critical Facility Maintenance and Rehabilitation - \$3.5M

- Facility Maintenance
- Structure Repairs
- Critical Roofing
- Utility Infrastructure
- Road Rehabilitation
- Recreational Access



Tourism Assets & Healthy Families



- WW II Structures – Cape Sewer, Pier, Tower and Fort Delaware
- Historical Houses – Yardley Dale and Vogel

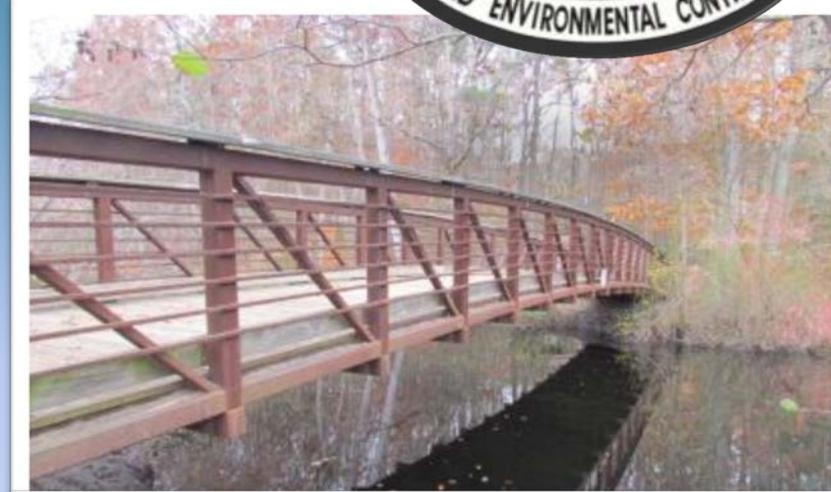




2013-2014 Asset Improvements



2013-2014 Asset Improvements



Planning and maintenance on Killens Waterpark Pool and Pedestrian Bridge (underway)

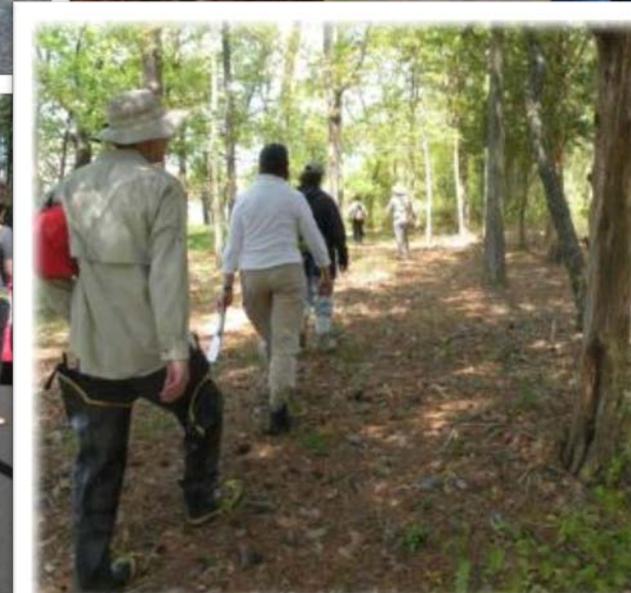
Tourism Assets & Healthy Families



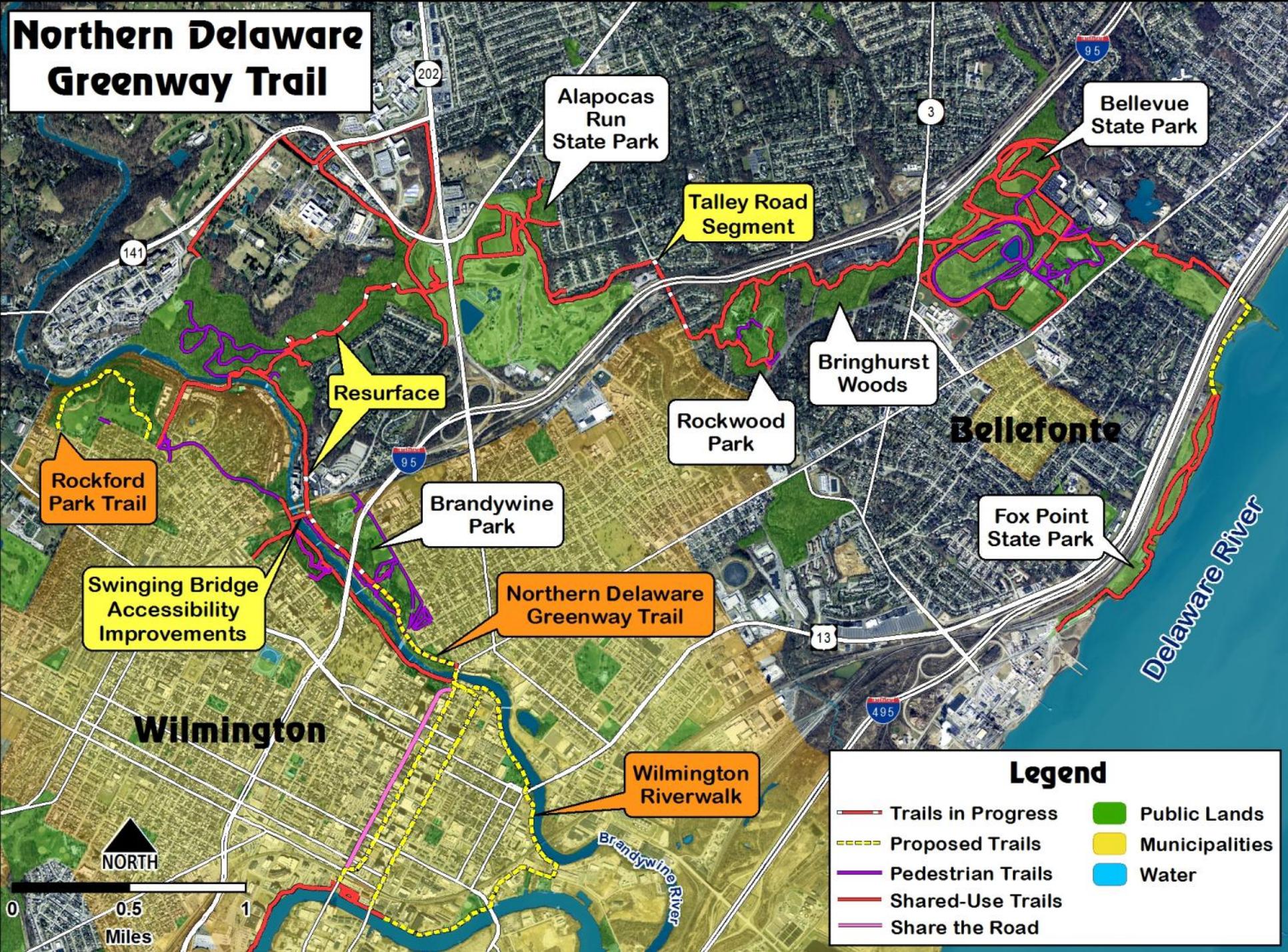
Trails and Pathways - \$2.7M

2015 Priorities:

- Northern DE Greenway
- White Clay Creek State Park
- Georgetown-Lewes-Cape
- Assawoman Canal



Northern Delaware Greenway Trail



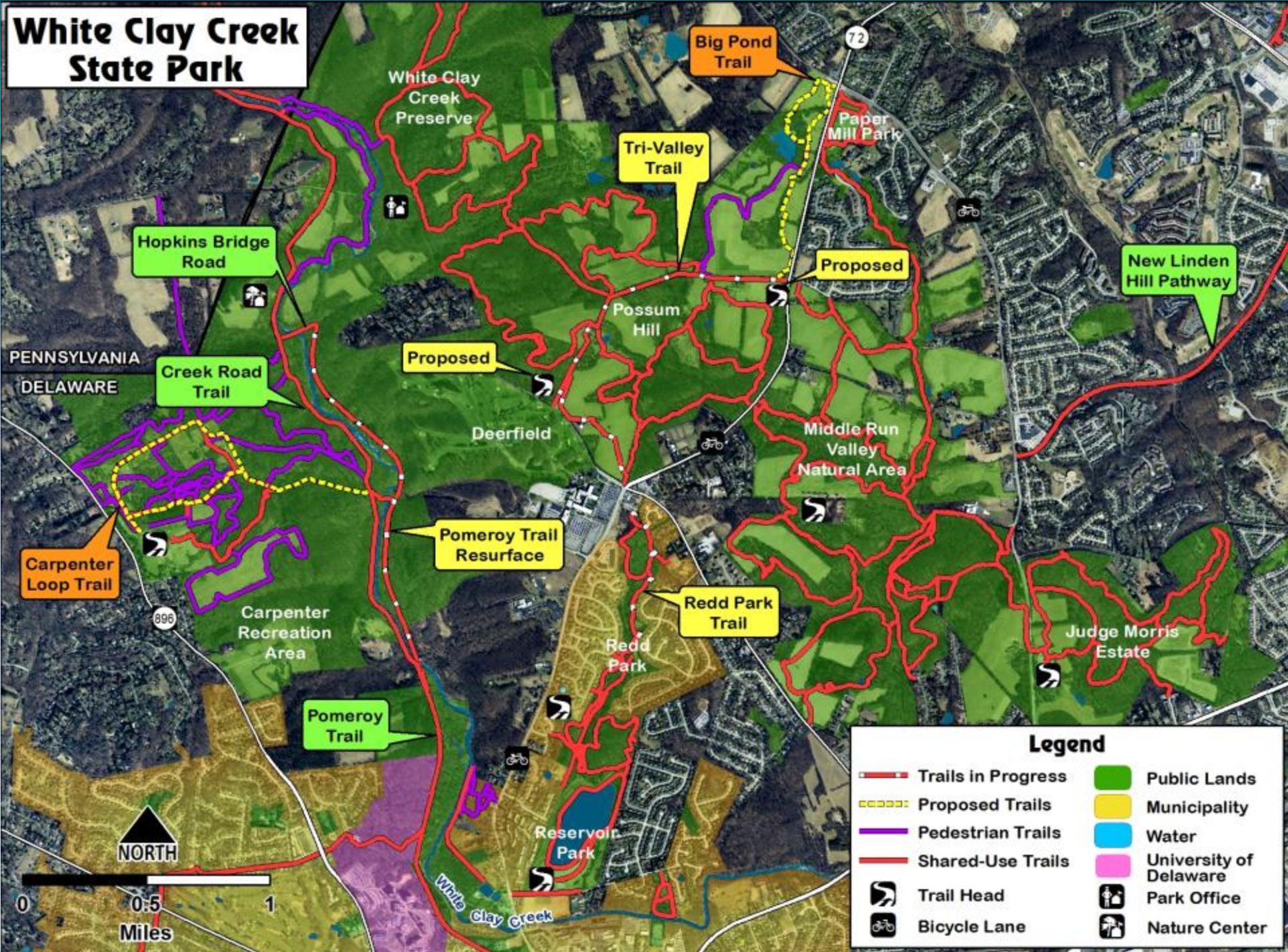
Legend

	Trails in Progress		Public Lands
	Proposed Trails		Municipalities
	Pedestrian Trails		Water
	Shared-Use Trails		
	Share the Road		

NORTH

0 0.5 1 Miles

White Clay Creek State Park



Hopkins Bridge Road

Creek Road Trail

Carpenter Loop Trail

Pomeroy Trail

Proposed

Pomeroy Trail Resurface

Tri-Valley Trail

Big Pond Trail

Proposed

Redd Park Trail

New Linden Hill Pathway

White Clay Creek Preserve

Paper Mill Park

Possum Hill

Deerfield

Middle Run Valley Natural Area

Carpenter Recreation Area

Redd Park

Judge Morris Estate

Reservoir Park

White Clay Creek

PENNSYLVANIA
DELAWARE

72

896



Legend			
	Trails in Progress		Public Lands
	Proposed Trails		Municipality
	Pedestrian Trails		Water
	Shared-Use Trails		University of Delaware
	Trail Head		Park Office
	Bicycle Lane		Nature Center

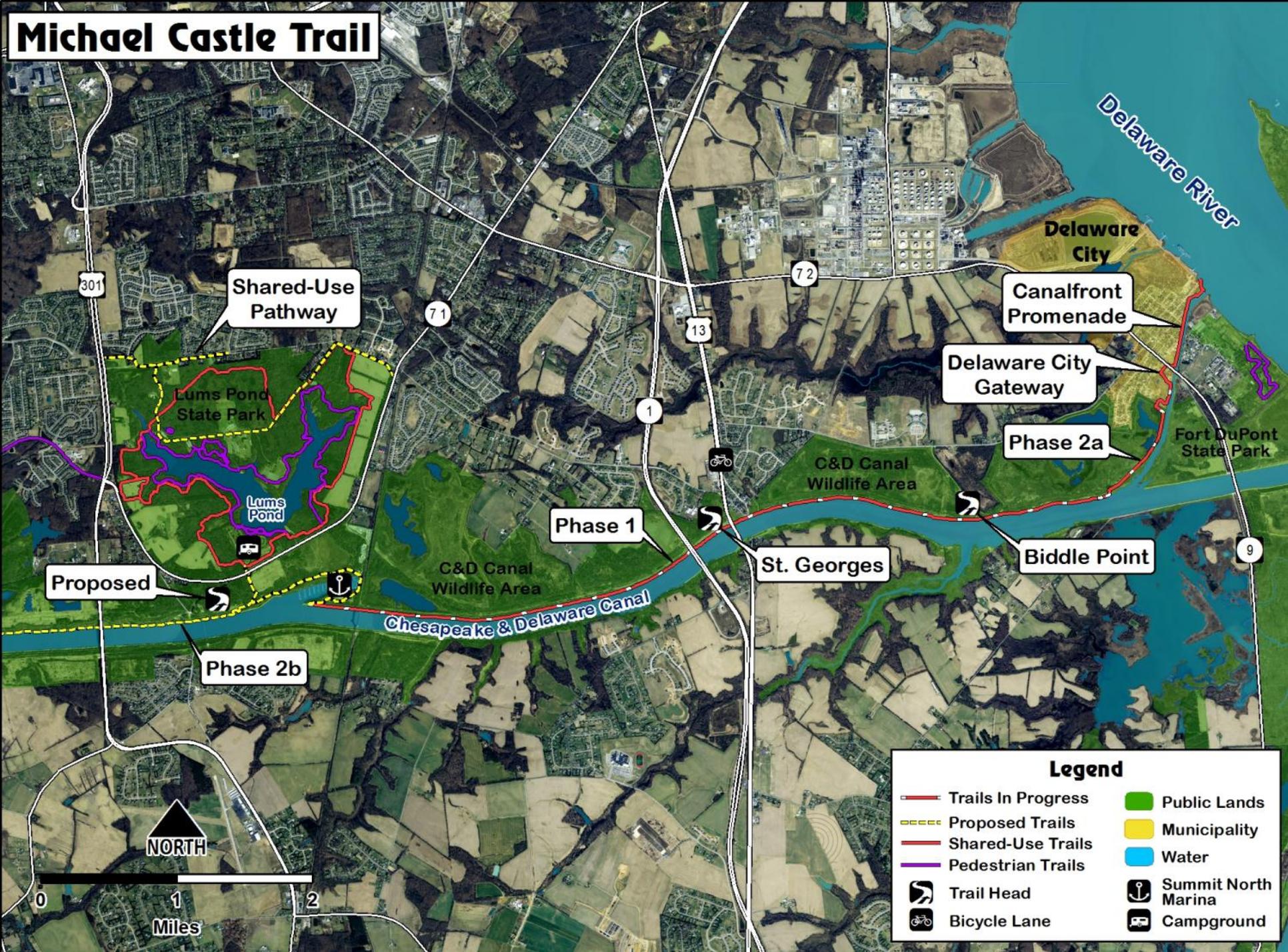
Tourism Assets & Healthy Families

2013-2014 Accomplishments

- Michael N. Castle (C&D Canal) Trail
- Cape Regional Trail Network-Gordons Pond



Michael Castle Trail



Shared-Use Pathway

Lums Pond State Park

Lums Pond

Proposed

Phase 2b

C&D Canal Wildlife Area

Phase 1

Chesapeake & Delaware Canal

St. Georges

72

13

1

71

301

Delaware City

Canalfront Promenade

Delaware City Gateway

Phase 2a

Fort DuPont State Park

Biddle Point

9

Delaware River

Legend

- Trails In Progress
- Proposed Trails
- Shared-Use Trails
- Pedestrian Trails
- Bicycle Lane
- Trail Head
- Summit North Marina
- Campground
- Public Lands
- Municipality
- Water

NORTH

Miles

0 1 2

Cape Henlopen State Park

Delaware Bay



Legend

- Trails In Progress
- Proposed Trails
- Pedestrian Trails
- Shared-Use Trails
- Bicycle Lane
- Sidewalk
- Parking
- Public Lands
- Municipalities
- Water
- Nature Center
- Campground
- Bath House
- Scenic Overlook

State Park Trails

Seaside Nature	0.6 mi.
Pinelands Nature	1.7 mi.
Salt Marsh Spur	1.2 mi.
Walking Dunes	2.0 mi.
Bike Loop	3.9 mi.
Gordons Pond	2.6 mi.
Junction & Breakwater	6.2 mi.
Gills Neck	1.3 mi.
Total = 19.5 miles	

Tourism Assets & Healthy Families



Shoreline and Waterway Management - \$1.14M

Supports:

- Ocean and Bay Beach nourishment
- Erosion control
- Dune maintenance
- Storm repair and clean up
- Channel dredging and beneficial reuse
- Navigational markings and debris removal
- Macro-algae harvesting
- UD Citizens Monitoring of water quality



Benefits:

- Protection from flooding & storms
- Provides safe navigation for boaters
- Improves water quality
- Coastal economy generates \$7 billion annually and employs ~60,000

Tourism Assets & Healthy Families

Murderkill River Dredging

- Contracted with Manson Construction
- \$950,000 construction cost
- 45,000 cu. yds. material dredged with suitable material placed on the beach at South Bowers



Sediment Management

In-house projects:

- Pepper Creek/Vines Creek Navigational Channel – March 2014
- Augustine Beach Boat Ramp – Spring 2014
- Indian River Navigational Channel – Fall 2014

Tourism Assets & Healthy Families

Recent Investments in Delaware's Ocean and Bay Coast



2013 Bay Beach Nourishment

- 60,000 cu.yds. of sand truck hauled
 - Broadkill
 - Cape Shores
 - Lewes



Indian River Bypass Plant

- Updated with a new booster pump
- Refurbished crane for \$690k
- Saving hundreds of thousands and extending the life of the crane for another 7 years

Tourism Assets & Healthy Families

Delaware's Ocean Coast Nourishment

Recovery from Hurricane Sandy:

- Placement of 1.3M cubic yards of sand in Fenwick, South Bethany, Bethany, Dewey and Rehoboth
- Lewes Beach received 21k cubic yards
- North side of Indian River Inlet saw the addition of 521k cubic yards
- \$26.7M, 100% federal funds

Indian River Inlet Maintenance:

- Over 4 thousand tons of rock was placed along the midsection of the jetty
- Broken sidewalk removed
- \$1.1M, 100% USACE federal funds



Tourism Assets & Healthy Families



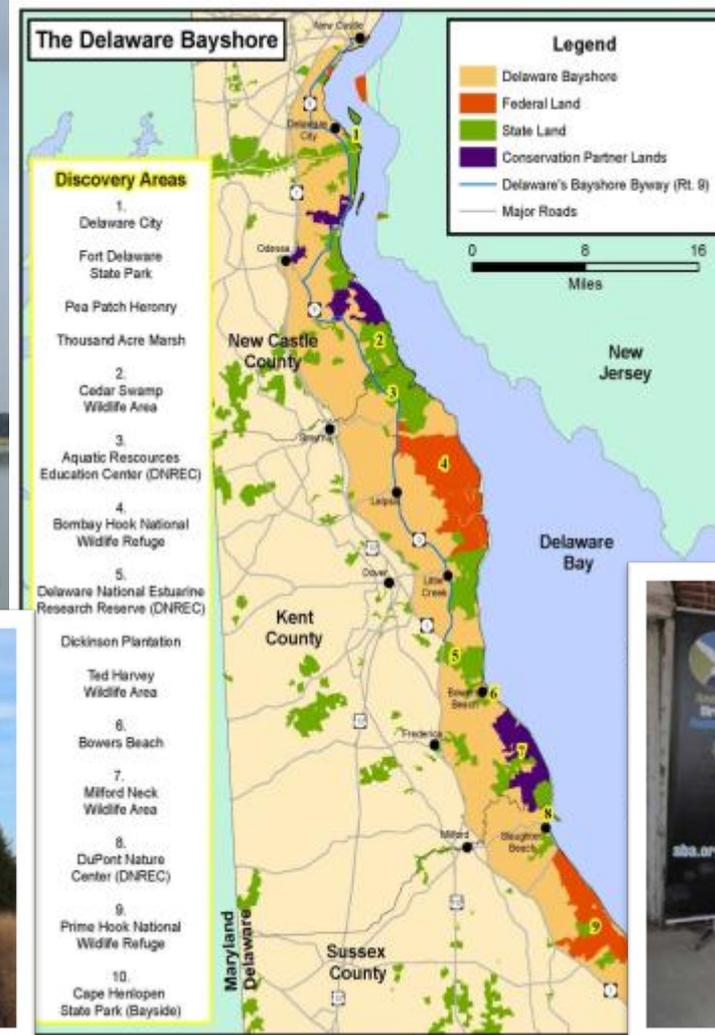
Delaware Bayshore Initiative - \$500k

2014 Priorities:

- Viewing areas – Thousand Acre, AREC and Taylors Gut
- Public access to Morris Tract
- Coastal resiliency projects

2013 Successes:

- ABA move to Del City
- Lang Marsh Acquisition
- Protecting Kingston Upon Hull



Tourism Assets & Healthy Families



Redevelopment of Strategic Sites NVF/Ft. DuPont - \$2.9M

- Remediate contaminated sites (with HSCA)
- Stabilize and rehabilitate key structures on sites
- Develop recreational amenities
- Expand open space and trails
- Provide wetland areas



Tourism Assets & Healthy Families



Redevelopment of Strategic Sites





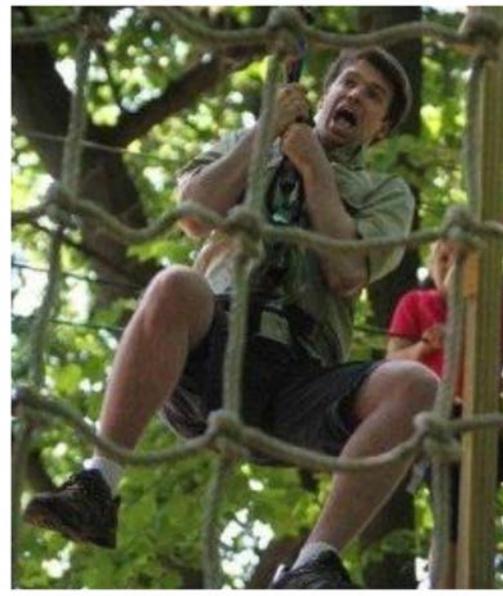
Critical Equipment ~ \$740k

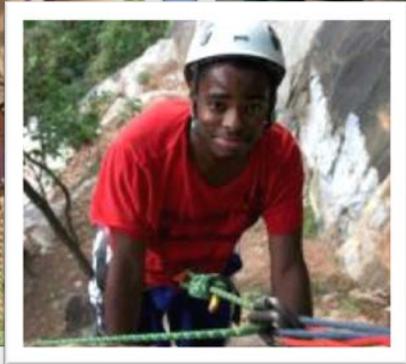
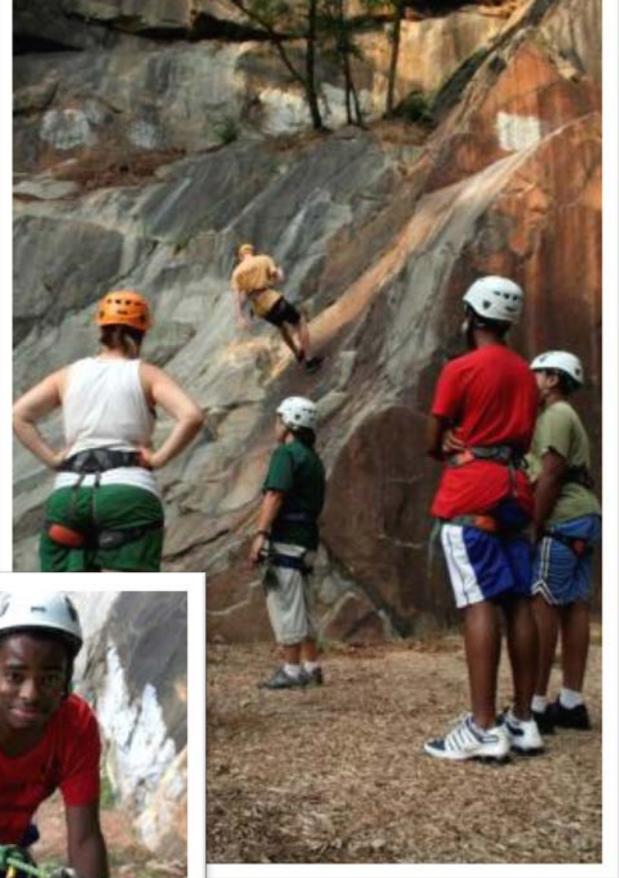


- DNREC requests funds for the acquisition/replacement of critical equipment essential in performing environmental and natural resource operations, conservation, protection and research activities. These assets provide public services and infrastructure support to nearly 100,000 acres of public land, 57 freshwater ponds and marine fishing areas, 47 boating access areas, all Delaware waterways, coastal and bay shoreline, and environmental laboratory services.



Continuing to Expand Recreational Services thru Business Partnerships





Water Infrastructure

Clean Water / Wastewater Management

CWSRF Capitalization Grant Required Match - \$1.4M:

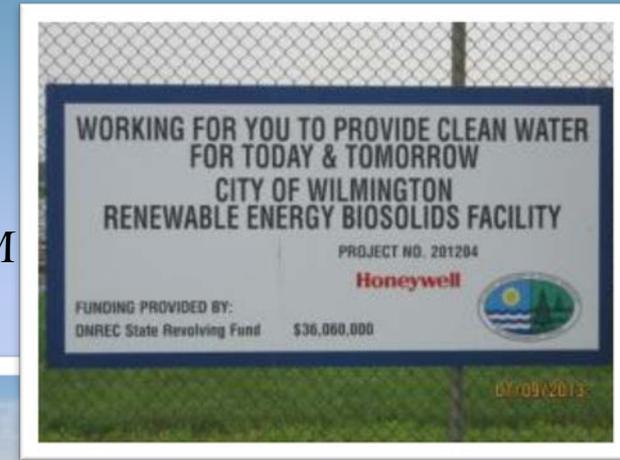
- Anticipating \$7M in federal funding
- Loan applications received for FY2015 = \$62M
- Program has leveraged >\$200M in federal dollars since inception and closed on 72 municipal loans for nearly \$300M

Low-income Affordable Grants:

- Assist communities in planning
- Supplement public and private facilities with affordable loans and grants
- WIAC has assessed 5-year project needs at \$654M

Benefits:

- Reduces costs of financing
- Protects water quality and public health
- Supports local economies
- Creates and supports thousands of jobs



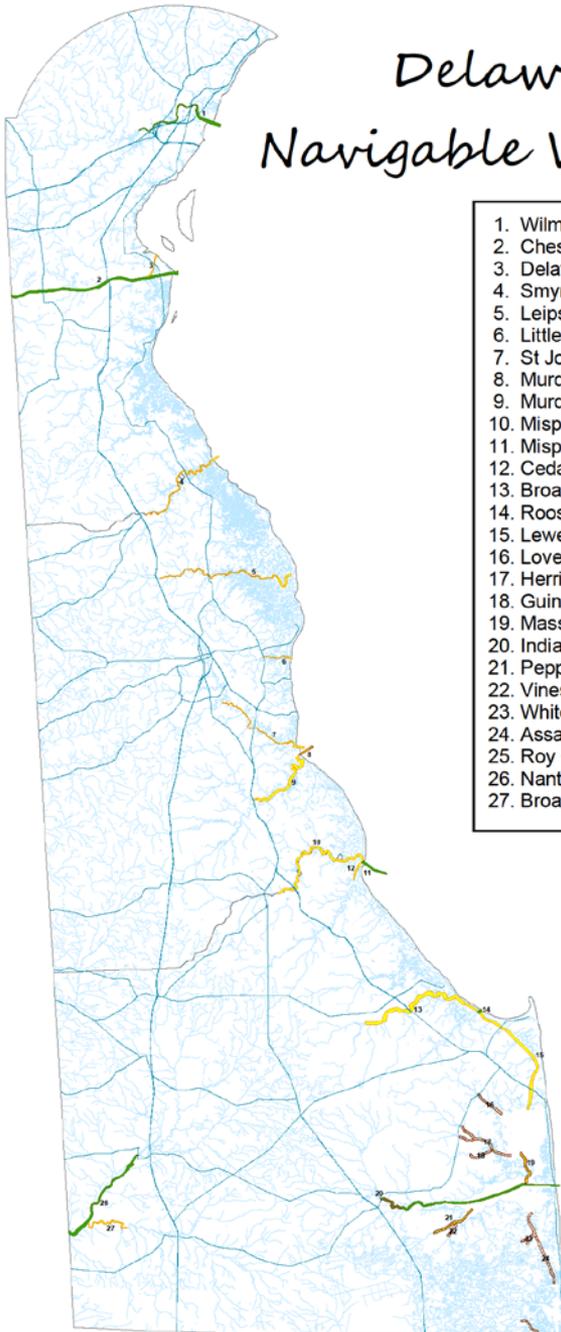
Water Infrastructure

Conservation Cost Share

- Leveraged over \$370k from Federal Clean Water Act – Section 319 Program
- 48,000 agricultural acres enrolled for 2013
- Reduces total nitrogen by 600,540 pounds, total phosphorus by 1,815 pounds per growing season
- Federal NRCS Programs **invested over \$10.5M** in Delaware Conservation Programs last year



Delaware's Navigable Waterways



1. Wilmington Harbor
2. Chesapeake and Delaware Canal
3. Delaware City Branch Channel
4. Smyrna River
5. Leipsic River
6. Little River
7. St Jones River
8. Murderkill River Entrance
9. Murderkill River
10. Mispillion River
11. Mispillion River Entrance
12. Cedar Creek
13. Broadkill River
14. Roosevelt Inlet
15. Lewes and Rehoboth Canal
16. Love Creek
17. Herring Creek
18. Guinea Creek
19. Massey's Ditch
20. Indian River
21. Pepper Creek
22. Vines Creek
23. White Creek
24. Assawoman Canal
25. Roy Creek
26. Nanticoke River
27. Broad Creek River

State Maintained

Federally Authorized

- Likely
- Unlikely

NOTE: The Corps of Engineers will investigate emergency maintenance channel dredging of low use federal projects (indicated on the map as "unlikely") only after the State of Delaware has determined it does not have the resources necessary to do so.



Prepared by Maria Sadler

Navigable Waterways

- 184 channel markers on State and Federal Waterways



Buried Debris Pit Remediation

- Partnered with DNREC SIRS on professional services contract (for projects over 50K)
- Selected five prequalified contractors (for project un 50K)
- Responded to 40 debris pit concerns in 12 months
- Remediated 14 sites in FY13
- Remediated 18 sites to-date in FY14
- Over 200 debris pit remediation projects remain on waiting list



2013-2014 Land Acquisition

- 36 projects across all counties
- 3,500⁺ additional acres
- \$2.2M leveraged funds



Preparedness and Resiliency



21st Century (RC&D) Regional Water Resource

Construction projects without adequate funding to complete:

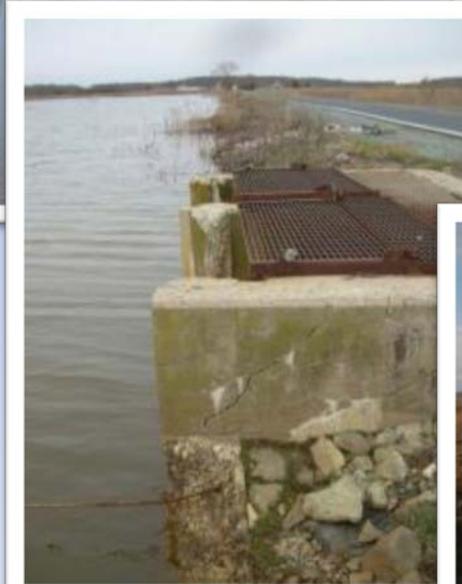
- \$600k Delaware City's Dragon Run
- \$750k Christina River Stabilization
- \$750k Hudson Road Tax Ditch
- \$550k Baltimore Ave., Cheeks, Banks Acres
- \$500k Bridgeville Branch
- \$500k White Oak Road
- \$600k DuRoss Heights
- \$300k Oak Orchard Long Neck
- \$500k Bay Beach/Back Bay (engineering)



Preparedness and Resiliency

Coastal Impoundment & Water Control Structure Rehabilitation

- Opportunities to leverage federal funds
- Little Creek breach
- Taylor's Gut structure erosion
- Ted Harvey breach
- Mispillion Harbor



Coastal Impoundments:

- Nourish beach habitats
- Protect shoreline from storm surge
- Prevent loss of coastal wetlands

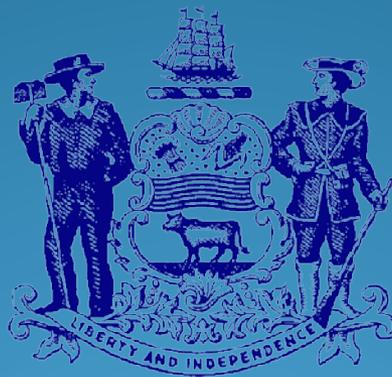
Our Volunteer Corps



Qualified, Dedicated Staff



Clean Water for Delaware's Future



*Healthy waters within a generation...
...jobs and a stronger economy today*

Background

- Nearly all of Delaware's waterways are polluted:
 - Industrial/manufacturing contamination, most toxics pre-1970
 - Nutrient pollution from wastewater & septic systems
 - Runoff pollution from housing, roads, parking lots
 - Contributions from agriculture
 - Degradation of natural systems that purify water and reduce flooding
 - Failing infrastructure threatens to undo gains

Some Progress, Challenges Persist

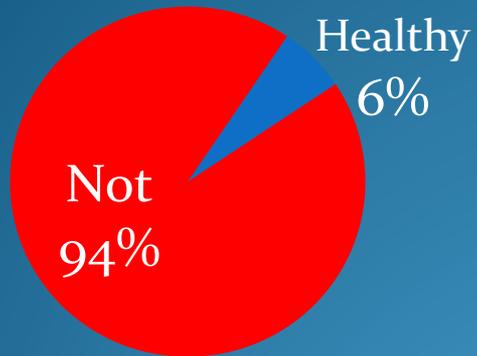
- Many improvements over past 40 years:
 - Many direct discharges eliminated in Delaware (or in-process)
 - Investments in wastewater infrastructure & elimination of tens of thousands of septic systems
 - Improvements in agriculture nutrient management & upgrades at industrial facilities
 - Modernizing permitting & adopted more stringent standards
 - World-class ocean water quality, but concerns w/ stormwater
- Yet clean water still many decades away under status quo
- Solution requires each of us to do our part (not just govt)

Why Does Clean Water Matter?

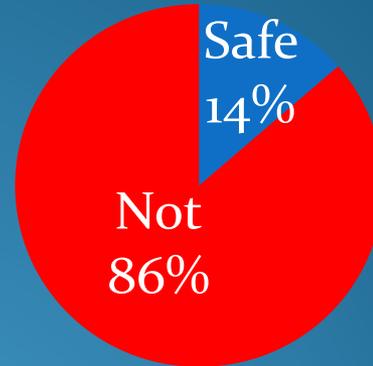
- Essential to public health & recreation
- Investments can reduce flooding/improve resilience
- Supports fishing, agriculture, industry, brewing
- Foundation of multi-billion dollar tourism industry & increases property values
- Supports city/town economic revitalization
- Restoration supports jobs (5,000+ jobs over five years in science, engineering & construction)

Embarrassing & Unacceptable

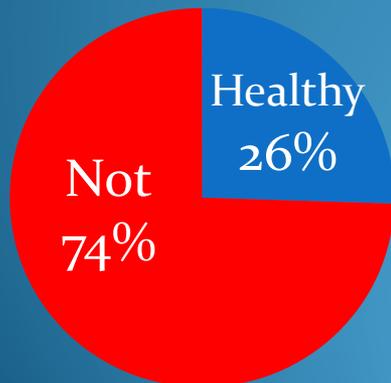
Rivers Supporting
Healthy Fish & Aquatic Life



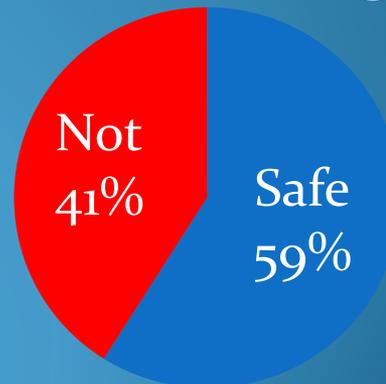
Rivers Safe
for Swimming



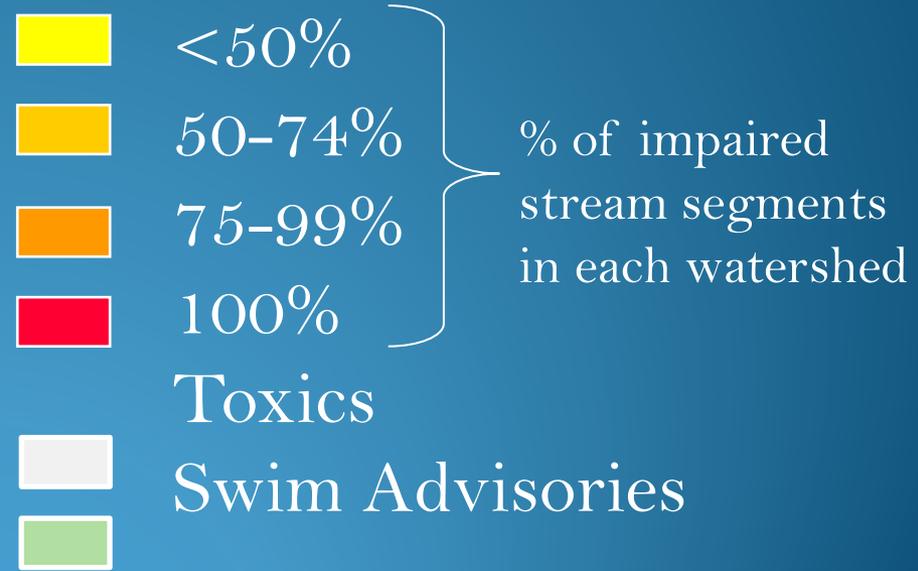
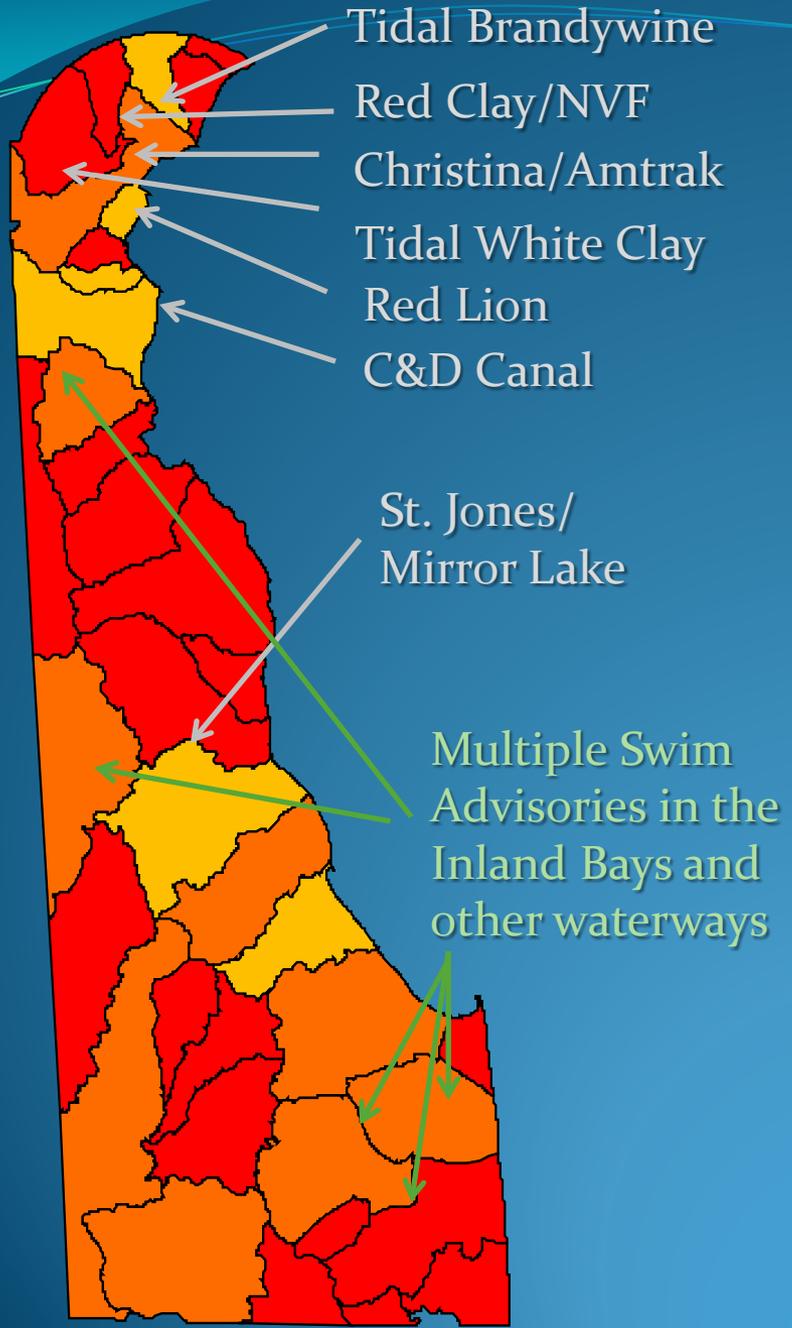
Lakes/Ponds Supporting
Healthy Fish & Aquatic Life



Lakes/Ponds Safe
for Swimming



Toxics, Bacteria and Nutrient Pollution Statewide



Solution? Strategic Investment



Toxics/Remediation



Waste/Drinking Water Plants



Stormwater Infrastructure



Industrial Facility Upgrades



Agricultural/Cost-Share



Conservation/Restoration

Jobs, Jobs, Jobs



Funding Mechanism

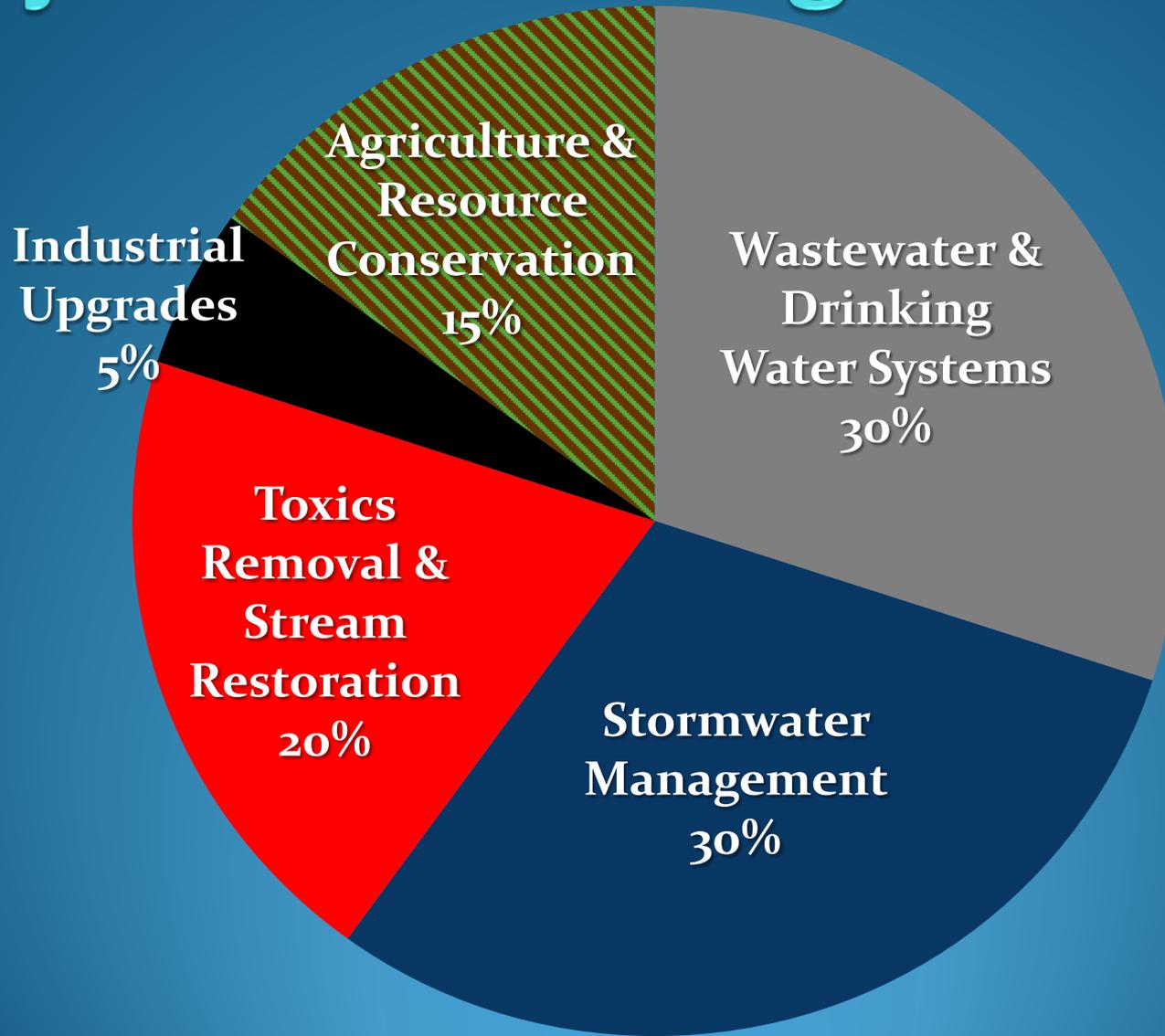
- The existing Clean Water and Drinking Water State Revolving Funds can provide ~\$30M in loans per year to local govts for wastewater & drinking water projects
- “Clean Water for Delaware’s Future” Service Fee will generate \$30M annually
 - Average residential households (<\$1 week = \$45/year)
 - Large residential, multi-family, commercial, industrial, and other properties (proportional, capped at \$25,000)
- Clean Water Service Fee will be indexed to inflation and collected through county property tax bills

4X Funding of Current Levels



- Fund will leverage private capital 2:1 to accelerate projects across DE, while supporting 5,000+ jobs over 5 years

Projected Funding Allocation



Investments to Accelerate

- \$500M+ : Wastewater/drinking water upgrades
- \$150M+ : Stormwater management upgrades
- \$75M+ : Toxics removal & stream restoration
- \$75M+ : Industrial upgrades
- \$30M+ : Agriculture cost-share
- \$30M+ : Conservation/restoration

Measurable Results by 2030



