Vulnerability Analysis and Potential Coastal Green Infrastructure for Delaware Route 1 Coastal Highway

Delaware Department of Transportation
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Restore America’s Estuaries
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Excellence in Transportation
Every Trip. Every Mode. Every Dollar. Everyone.

Every Trip
- We strive to make every trip taken in Delaware safe, reliable and convenient for people and commerce.

Every Mode
- We provide safe choices for travelers in Delaware to access roads, rails, buses, airways, waterways, bike trails, and walking paths.

Every Dollar
- We seek the best value for every dollar spent for the benefit of all.

Everyone
- We engage and communicate with our customers and employees openly and respectfully as we deliver our services.
Regional Perspective
Site Information

- $2.1 Billion annual GDP
- Employs 40,000 people
- 7 million annual visitors

Cultural Resources

Natural Resources
Saving Delaware's beaches

Delaware's ocean beaches are an economic engine but pumping sand only to see it wash away happens more than ever

Molly Murray, The News Journal
Research Questions

◦ How do we integrate coastal green infrastructure techniques into our project design practices?
◦ How do we quantify the economic benefits of green infrastructure?
◦ How do we decide on which techniques to use and where?
Project Prioritization

- Partner with the Center for the Inland Bays Program
  - Community Outreach
    - Community Definition of Resilience
    - Outline Community Values
  - Identify Problem Areas
    - Roads that routinely flood

*Dewey Beach, Delaware, October 2012 Hurricane Sandy*
Project Expectations

- Partner with the National Institute for Technology and Standards Technology (NIST)
  - Communities begin to talk about and plan for resilience
  - Identify vulnerable transportation and other infrastructure assets
Vulnerability Analysis
Read Avenue – Project #1

- Community identified the pipe outfalls as problem areas during tidal and storm events
- DelDOT maintenance staff is looking for innovative ways to manage the coastal pipe and swale discharges
Tidal Marsh – Project #2
Next Steps

• Develop concept plans for the Read Avenue and Bethany Marsh projects

• Develop Design and Construction specifications and incorporate them into Project Development Manuals and Guidance

• Update the Watershed Resources Registry Models with datasets to identify opportunities for coastal green infrastructure projects
Thank You!

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