Planning For The Inevitable: Funding, Design & Construction of a Resilient Pump Station

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Ian Catlow, P.E.,
Vice President

Tighe&Bond

Overview

Vulnerability & Planning Primer

Project Funding Alternatives

Case Study: Edgartown, MA

Planning: Vulnerability Assessment

Identify Risks

- Flood
- Wind
- Fire, Earthquake, Locus?

Identify Receptors

- Treatment Facility
- Pump Stations
- Power/Communication
- Collection Systems

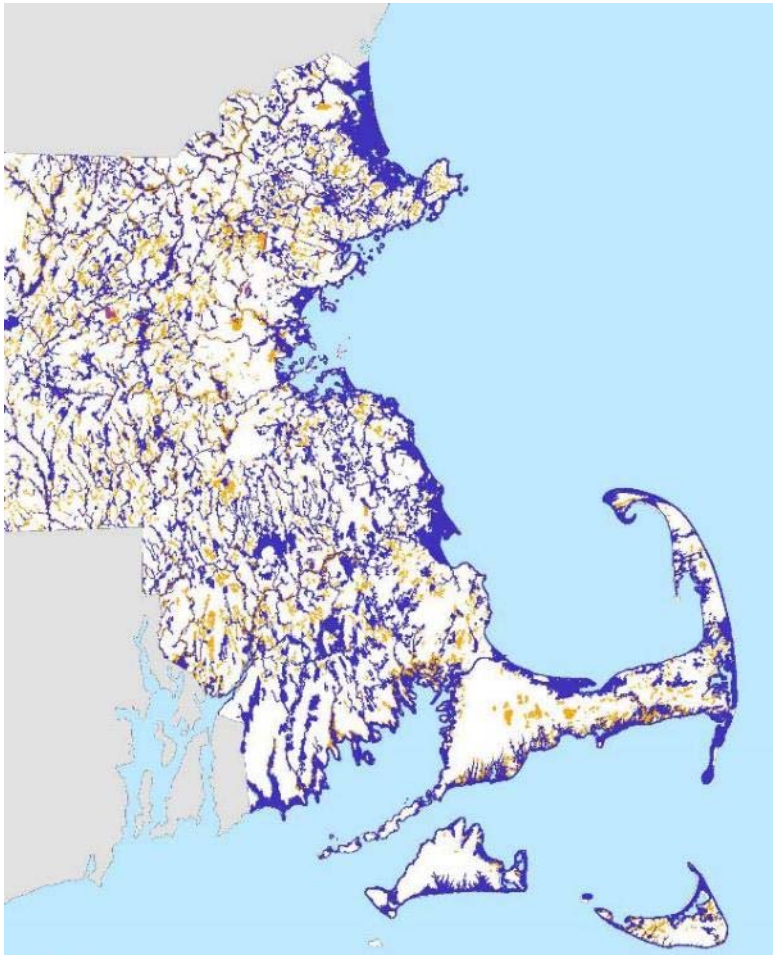
Planning: Vulnerability Assessment

Use Local Resources

- DPW, Planning Department, Fire, Police, Harbor Master

Develop A Mitigation Plan

- State Plans
- Local & Regional Plans



Funding Resiliency Projects

NOAA Habitat Restoration Grant

- Funds Restoration & Resiliency Projects
- Projects $300K to $2M
- Up to 50% Match

Pre-Disaster Mitigation Program

- Funds ‘All Hazard’ Mitigation Projects
- $30M Available Nationally
- 25% Local Match

Flood Mitigation Assistance Program

- Funds ‘Flood Related’ Hazards
- $150M Available Nationally
- 25% Or Less Local Match

Hazard Mitigation Grant Program

- Funds ‘All Hazard’ Mitigation Projects
- Available Funding Varies
- 25% Local Match

Pre-Disaster Mitigation Grant Program

- **Eligibility Requirements**
  - Public & Limited Non-Profit Groups May Apply
  - Need Approved Hazard Mitigation Plan
- **Funding Available**
  - $ Available Annually
  - $30 to $90M Nationally In Recent Years
  - 25% Local Match

Typical Eligible Projects:

- Property Acquisition
- Dry Floodproofing
- Localized Flood Risk Reduction
- Generators
- Infrastructure Retrofit
- Planning Related Activities

Hazard Mitigation Grant Program

Eligibility Requirements

- Available After Disaster Declaration
- Public & Limited Non-Profit Groups May Apply
- Need Approved Hazard Mitigation Plan

Typical Eligible Projects:

- Property Acquisition
- Dry Floodproofing
- Localized Flood Risk Reduction
- Generators
- Infrastructure Retrofit

Funding Available

- $ Amount Varies
- No Max or Min Project
- 25% Local Match

HMA
Hazard Mitigation Assistance

FEMA

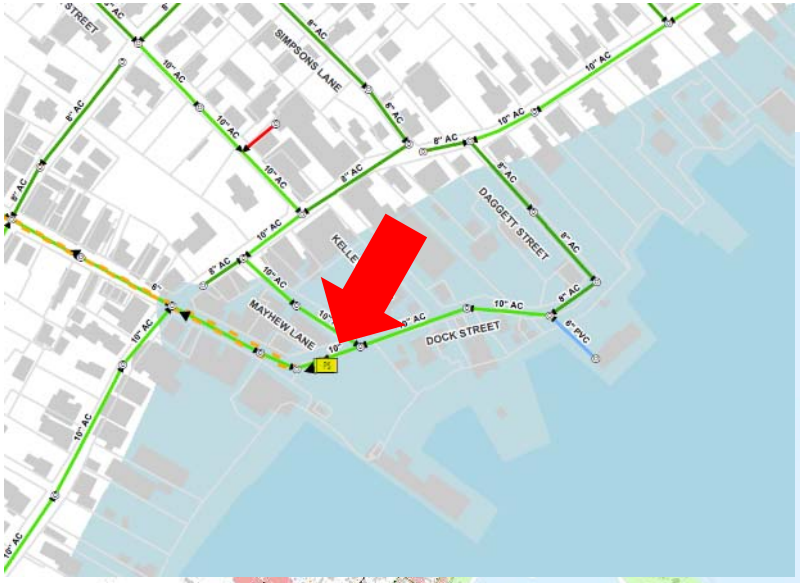
Case Study: Edgartown, MA

Identify Risks & Receptors

- FEMA Resources
- Storm Inundation Models

Greatest Risk: Dock Street Pump Station

- 90% Of Service Area Flows Through Station
- Business/Tourist District At Risk
- Within 100-Year Flood Plain



Demonstrating Project Need & Value

Dock St. Area Had History of Flooding

Pump Station Down Time Could Shut Down Tourism

- Impact To Town Revenue

Public Outreach Created Situational Awareness

Hazard Mitigation Grant Funding

Mitigation Alternatives

- Low Pressure Sewers
  - » Project Cost: $15M
- Elevate Pump Station
  - » Project Cost: $600K
- Flood Proof Existing Station
  - » Project Cost: $550K

Hazard Mitigation Grant Funding

HMGP Requires Benefit:Cost >1.0

Document Benefits (Avoided Losses)

- Infrastructure
- Overtime Labor
- Lost Tax Revenue
- Project Benefits $1.2M

Flood Proof Existing Station Selected

The Atlantic, a restaurant, and the Boathouse Club, a private dining room and social club, were closed Tuesday after sewage backed up into the basement of the building at 2 Main Street in Edgartown. In this photo, taken yesterday, contractors lined up to do the cleanup work. — File photo by Steve Myrick

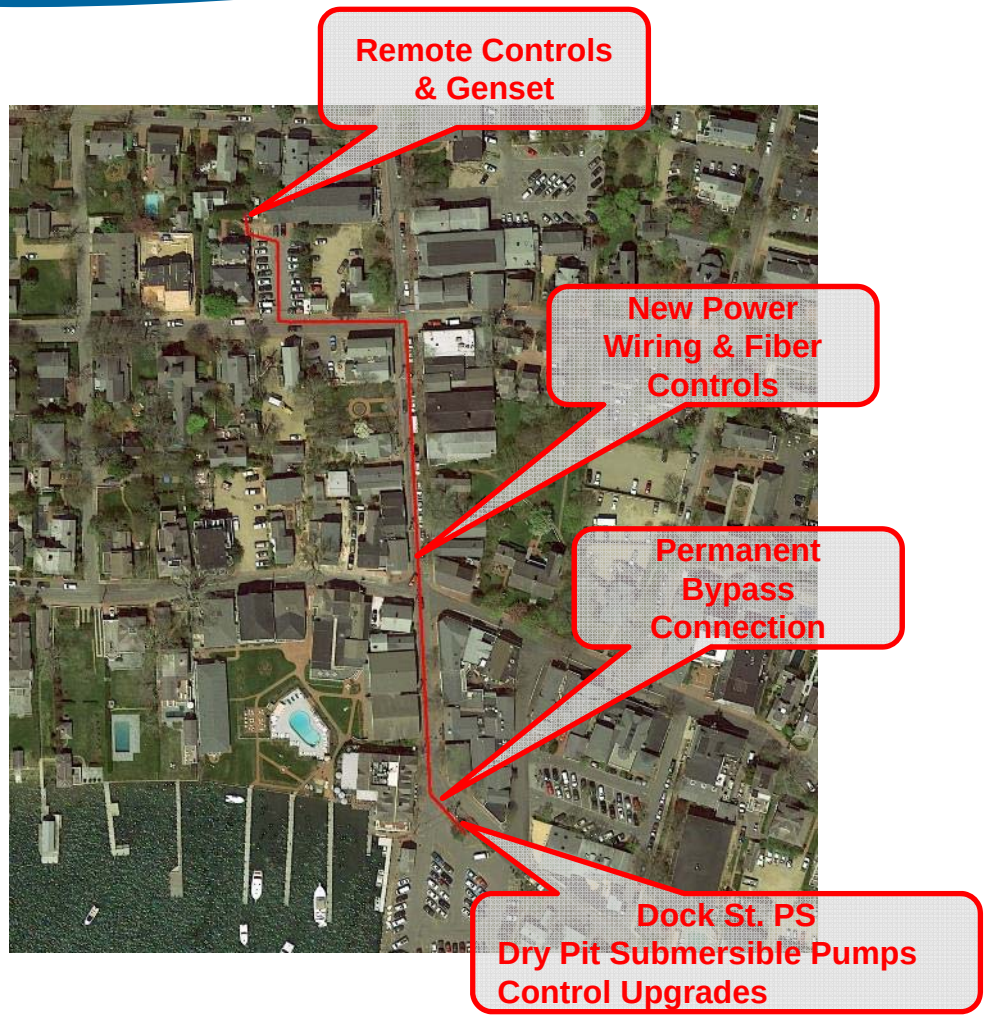
Mitigation Design

Goals:

- Minimize Property Losses
- Minimize Down Time
- Improve Resiliency

Key Design Elements:

- Dry Pit Submersible Pumps
- Robust Controls
  - » Wired & Radio Communication
  - » Submersible Enclosures
- Bypass Connection



Project Timeline

- TS Irene, August, 2011
- HMGP Application Submitted, May, 2012
- Grant Award, November, 2013
- Town Meeting Funds, April, 2014
- Bids Open, June, 2015
- Contractor Notice to Proceed, June, 2016
- Conductor Failure, October, 2015
- Project Completion, April, 2017

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Edgartown Lessons Learned

Get Creative When Defining Project Benefits

- Think Beyond Infrastructure Impacts

Plan For Multiple System Failures

- They Will Occur When Least Expected

Budget Appropriately

- Grant Approval & Financing Can Take Time

Artist: Jeanne Staples

Questions & Discussion

Ian Catlow, P.E.
Email: ibcatlow@tighebond.com
Phone: 508-471-9605

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