



Ryder Street Beach Dune Enhancement Project

Town of Provincetown Public Meeting, November 7, 2019



COMMITMENT & INTEGRITY DRIVE RESULTS



Presentation Overview



- Project Overview
- Why do we need this project?
- How this work fits into previous work to address flooding?
- CZM grant application and award
- Project timeline
- Interim flood protection
- Questions?





Introductions: Project Team

- Town of Provincetown:
 - Tim Famulare
 - Rich Waldo
 - Rex McKinsey
- Woodard & Curran
 - Jan Greenwood
 - Janelle Bonn



Setting the Stage

- 2015 Provincetown Coastal Resiliency Assessment and Strategic Beach Stabilization Project:
 - Local stakeholder meetings identified this project area as one that gives the “biggest bang for the buck”
- 2016 Provincetown Hazard Mitigation Plan
 - Flooding of Town Hall and surrounding area identified as a specific hazard
- 2016 Increasing Coastal Resiliency and Reducing Infrastructure by Mapping Inundation Pathways (previous CZM grant award)
 - Flood inundation pathways identified and modeled by the Center for Coastal Studies
 - Identified the Town Hall as a high priority critical asset to be protected based on the results of risk assessments





Setting the Stage

- FY2017 Application for a CZM grant, "Improving Coastal Resilience through the Ryder Street Beach Nourishment Project":
 - Grant application addressed beach nourishment of Ryder Street Beach
 - CZM did not award the grant
- FY2017 FEMA Pre-Disaster Mitigation Grant
 - Grant application to address flooding related to the Ryder Street outfall
 - FEMA did not award the grant
- 2018 Municipal Vulnerability Preparedness (MVP) Grant
 - Community engagement process to prioritize adaptation and mitigation measures and develop a work plan and timeline for their implementation
- FY2019 Application for a CZM Coastal Resilience Program grant, "Ryder Street Beach Dune Enhancement Project"





General Project Overview: Project Area

- Ryder Street Beach, west of MacMillan Pier
- Approximately 300 foot stretch of beach





General Project Overview

- Part of the Town's long-term resiliency strategy
- Implements actions identified in resiliency planning studies
- Construction of a protective dune system, including native plantings to help anchor the dune, on an approximately 300 foot stretch of Ryder Street Beach, to be maintained by the Department of Public Works
- Accommodate maintenance of drainage outfalls and existing stormwater treatment structures
- Accommodate public access to the beach and marina





Key terms related to this project

- **Coastal Resiliency** (or resiliency): ability of a community to survive and recover from hazard threats such as flooding, coastal storms, and hurricanes
- **Dune Enhancement:** Building a dune “from scratch” to help protect homes and properties from the effects of wind, waves, storm surges, and flooding
- **Storm Tide Pathway:** The rise in water level experienced from a storm event resulting from a combination of storm surge and the tide, causing a “path” for rising water to connect to low lying areas





Why do we need this project?

- The northeast increasingly experiences higher intensity storms with large storm surges, resulting in significant coastal flooding events
- Provincetown is especially vulnerable to major storm events and sea level rise due to ocean exposure
- Most of the downtown commercial district is located in a FEMA flood zone

Figure 3-1: FEMA FIRM Map - Town Assets Within Floodplain Zones



- VE: High Risk Coastal Area
- A: 1% Annual Chance of Flooding, no BFE
- AO: 1% Annual Chance of 1-3ft Sheet Flow Flooding, with Depth
- X: 0.2% Annual Chance of Flooding



Why do we need this project?

- Repeated flooding of the downtown area has negative impacts on residents, infrastructure, businesses, and the general character of the area
- The Town Hall was identified in a 2016 Vulnerability Assessment as one of the Town's most important and critical assets



Photo: January 2018
(in front of Town Hall from Ryder Street)



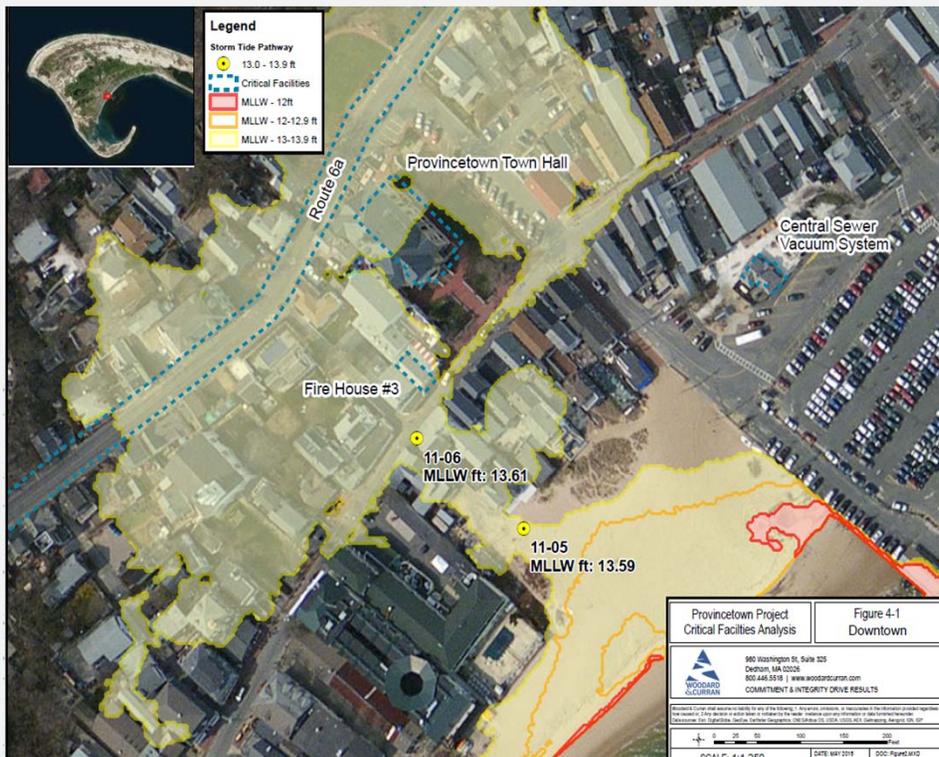
Photo: January 2018
(Bradford Street facing East)



Photo: January 2018
(Gosnold Street facing North)



Why do we need this project? – Storm Tide Pathways



- Dune enhancement is a proven strategy that increases a community's natural storm damage protection, flood and erosion control, and overall resilience
- Previous studies have identified a storm tide pathway in this area that channels storm surges toward Commercial Street



Why do we need this project? – January 2018 Nor'Easter





Reasons for project selection

- The Ryder Street Beach area was identified as a critical location to protect areas of downtown Provincetown vulnerable to flooding:
 - Town Hall
 - Bradford Street Pump Station
 - Downtown Commercial District
- The Town owns most of the Ryder Street Beach
- Previous studies provided well documented justification for grant eligibility
- The MA Office of Coastal Zone Management grant program supports non-structural resiliency approaches such as dunes





Benefits to dune construction in this area

- Provide a physical buffer between the ocean and inland areas
- Fit well within the relatively small beach area
- Maintain coastal character/visually fit within the project area
- Relatively low cost mitigation for potential costly flooding damage
- Provide wildlife and shorebird habitat





Benefits to dune construction in this area





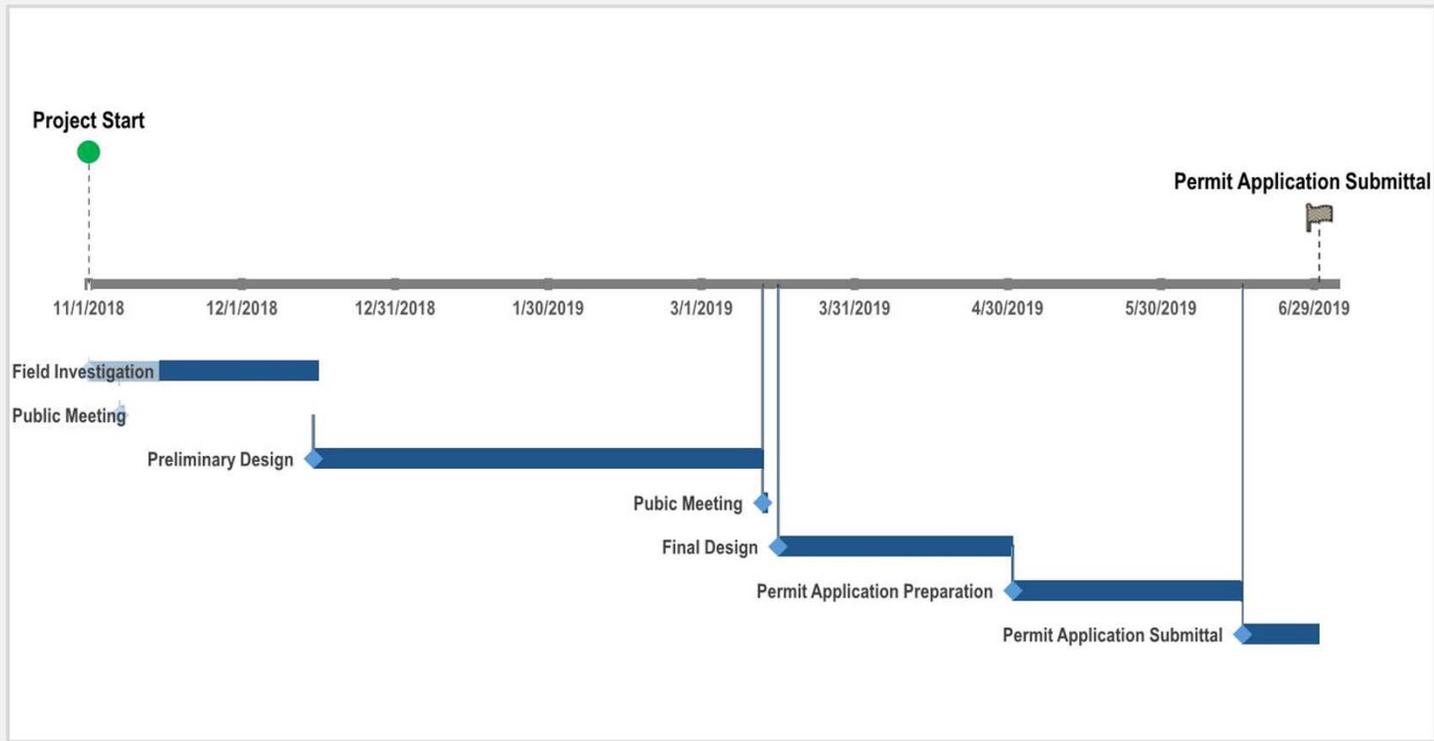
CZM Grant Application and Award

- Provincetown awarded a Coastal Zone Management Grant for \$150,000 to design and permit this project
- Town is contributing additional \$30,000 and in-kind labor
- Grant application specifically focused on reducing flooding risks to the Commercial Street and Town Hall areas from coastal storm damage by constructing a dune system on Ryder Street Beach





Project Timeline



How Will This Project Affect the Neighborhood?

- Mitigation of flood damage to the adjacent neighborhood
- Pedestrian access to the beach will be maintained as part of the design
- Construction will occur off peak season





Interim Flood Protection Measures

- Temporary berm construction
- Deployable flood barriers available for use at Gosnold Street and Town Hall





Questions
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**See you in the Spring for a Conceptual
Design Presentation**



Project Contacts

- Town of Provincetown :
 - Tim Famulare, Environmental Planner and Conservation Agent
tfamulare@provincetown-ma.gov
1-508-487-7000
 - Richard Waldo, Director – Department of Public Works
rwaldo@provincetown-ma.gov
1-508-487-7060
 - Rex McKinsey
rmckinsey@provincetown-ma.gov
1-508-487-7030

