



Peirce Island WWTF Upgrade

State Street Business Group

March 12, 2016

Introductions

- Peter Rice, Director of Public Works
 - Project Background
- Eric Eby, Parking and Transportation Engineer



The Peirce Island Selection Process

- Wastewater Master Plan began in 2007
- Over 30 sites evaluated
- Over 47 public meetings including unanimous vote in April 2013 to proceed at Peirce Island followed by a vote to bond \$10 million following a public hearing in August of that same year
- There was No request from any Councilor to hold additional public hearings during the 2014/2015 Revisit of Pease Option



The EPA Negotiated Schedule

- Schedule avoids weekend, evening and night work
- Reduces risks, reduces noise impacts, reduces errors, less costly
- Costs and risks for walking away from the EPA Negotiated Agreement are significant

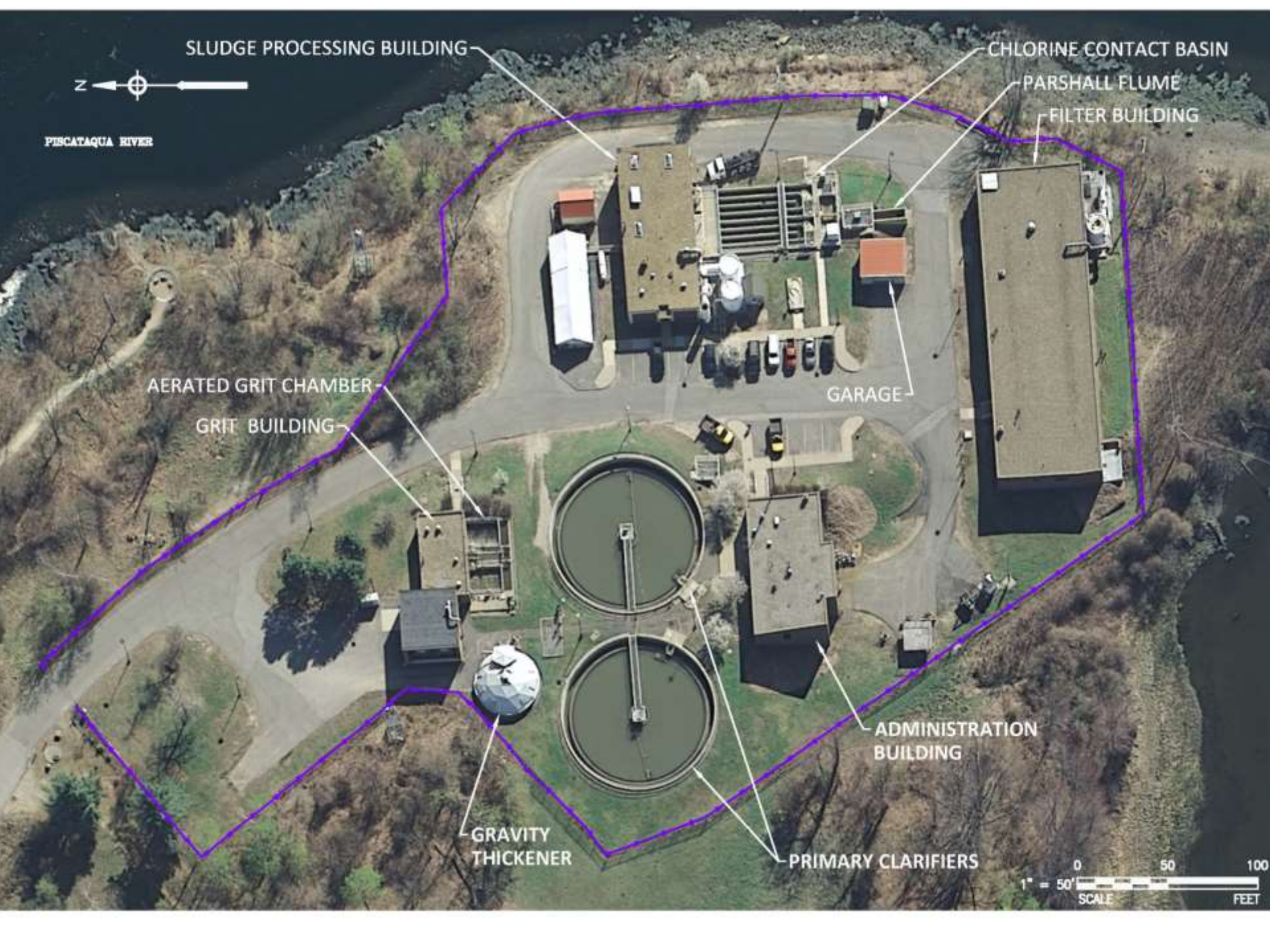


Managing Construction Impacts

- The City has Looked at Barging Materials and will Include as an Alternate in Project Bid
- No Streets will be Closed
- No Sidewalks other The players Ring will be closed
- No Gridlock Because of Trucks, the Level of Service for Each Intersection has been Evaluated
- City has Done over \$55 Million in Sewer Separation Work Through Historic Areas, (State, Court, Lincoln, Union, Richards)
- Most Residents of the South End Street Will Not See a Single Construction Vehicle Pass by Their Front Door.







SLUDGE PROCESSING BUILDING

CHLORINE CONTACT BASIN



PISCATAQUA RIVER

PARSHALL FLUME

FILTER BUILDING

AERATED GRIT CHAMBER

GARAGE

GRT BUILDING

ADMINISTRATION BUILDING

GRAVITY THICKENER

PRIMARY CLARIFIERS




OPERATIONS/LAB BUILDING

CHLORINE CONTACT BASIN



PISCATAQUA RIVER

LEGEND

 EXISTING BUILDING OR TANK

 PROPOSED BUILDING AND/OR PROCESS

AERATED GRIT CHAMBER

GRIT BUILDING

TRANSFORMER

GENERATOR

ELECTRICAL BUILDING

BIOLOGICAL AERATED FILTER (BAF)

SOLIDS BUILDING AND SECONDARY INFLUENT PUMP STATION

ODOR CONTROL

GRAVITY THICKENER

PRIMARY CLARIFIERS

HEADWORKS

ODOR CONTROL

GRAVITY THICKENER



Current Status

- Final Design of WWTF Complete (\$5.0M)
- Phase One Construction Complete (\$1.7M)
- Five Contractors Prequalified
- Joint Work Session Regarding Traffic Impacts to be Scheduled
- Peirce Island Road Bridge Maintenance



Project Cost Estimate

Items	Cost (Million Dollars)
Primary Clarifier Project (Eng, Const, etc.)	\$1.7
Treatment Upgrade Final Design Phase	\$5.0
Construction & Contingency	\$70.4
Construction Admin & Oversight	\$6.7
Total Project Cost	\$83.8



Construction Access Routes



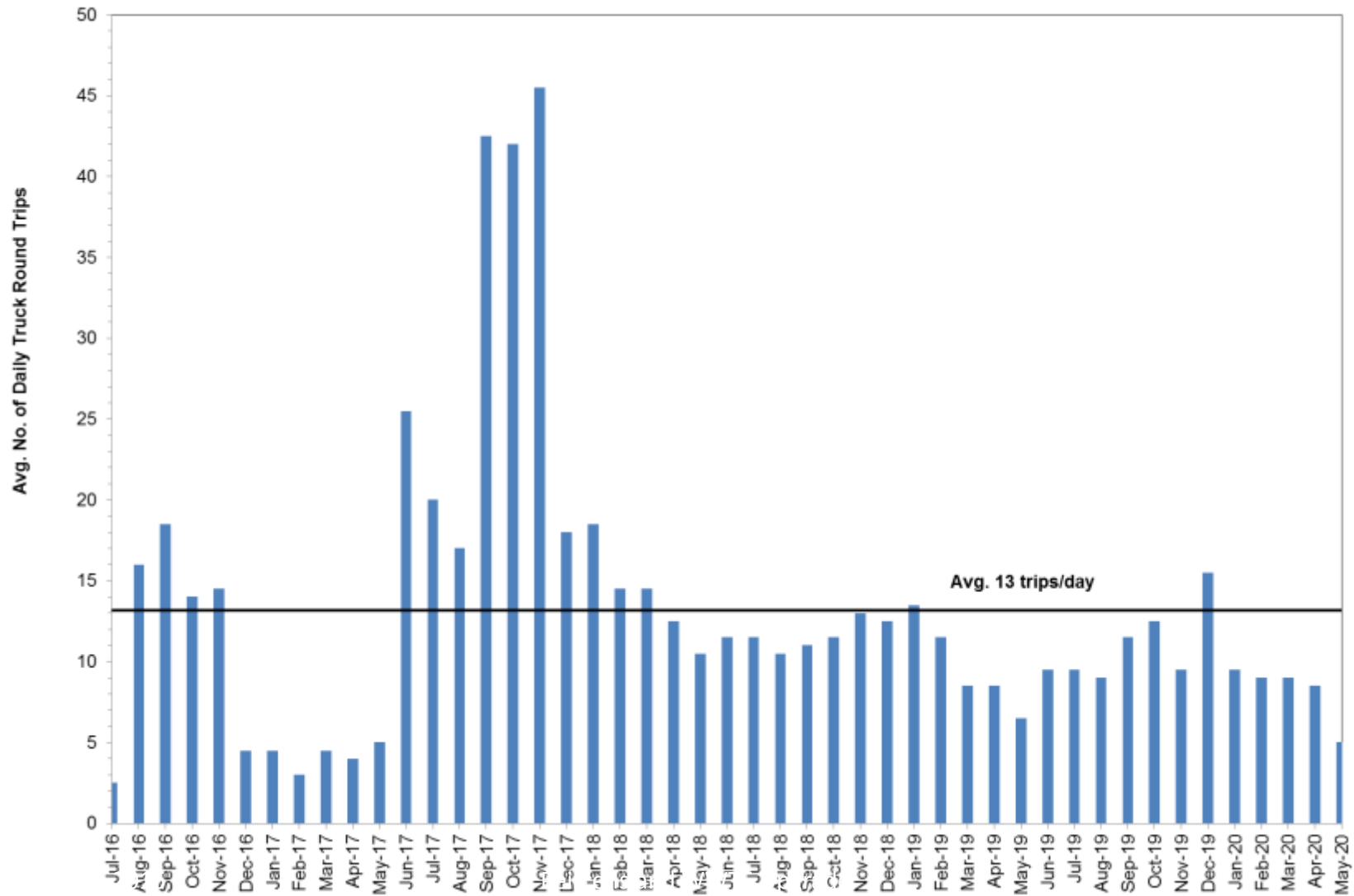
Estimated Construction Vehicle Frequency

Total One-Way Trips Over 51 Months	Average Daily One-Way Trips Per Month	Peak Daily One-Way Trips Per Month	Peak One-Way Trip Frequency (min)
20,000 – 25,000	5 - 91	8 - 137	3 - 53

Total Round Trips Over 51 Months	Average Daily Round Trips Per Month	Peak Daily Round Trips Per Month	Peak Round Trip Frequency (min)
12,000 – 12,500	2.5 - 45	4 - 69	1.5 - 27



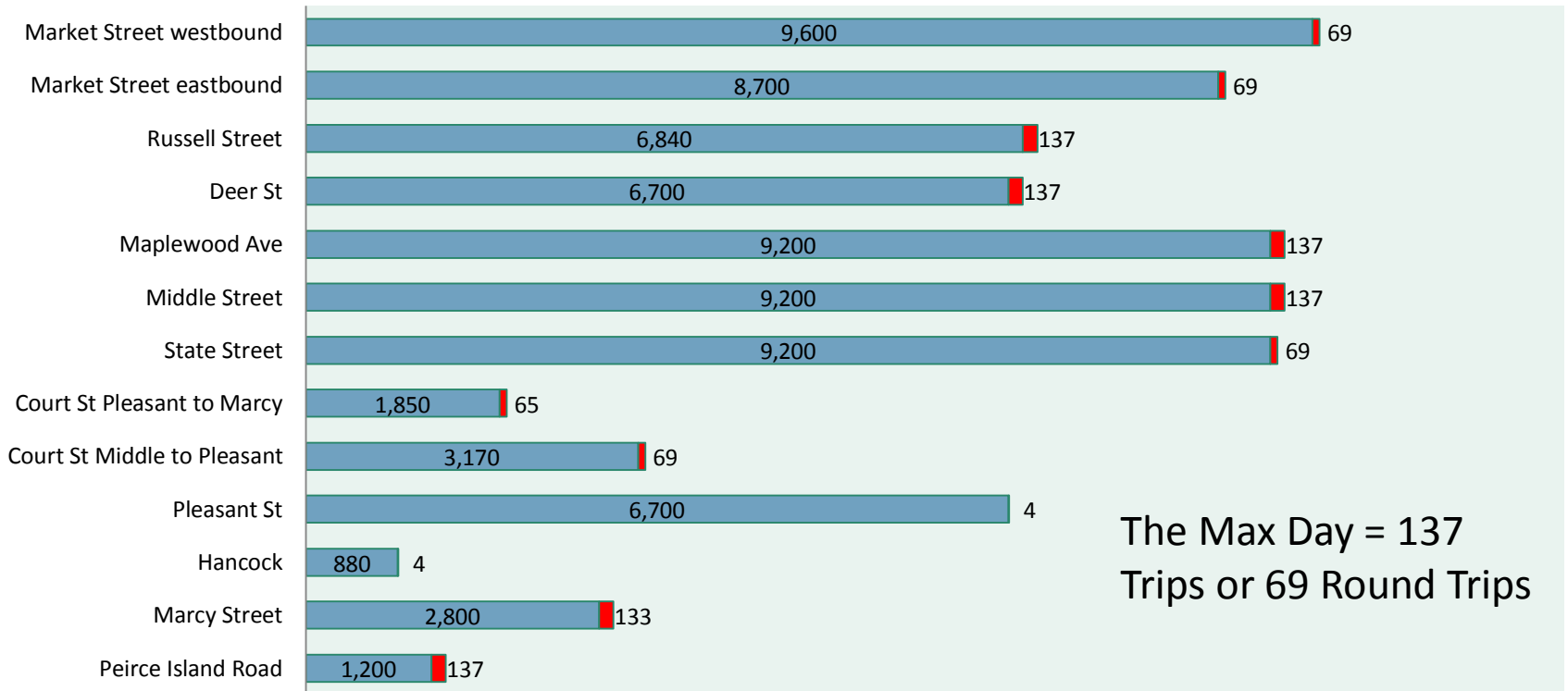
Average Construction Traffic Round Trips Per Day



Net Impact to Traffic Volume

Max Day Construction Traffic on Average Day Volume

■ Annual Average Daily Street Traffic ■ Peak Day Construction Truck Volume

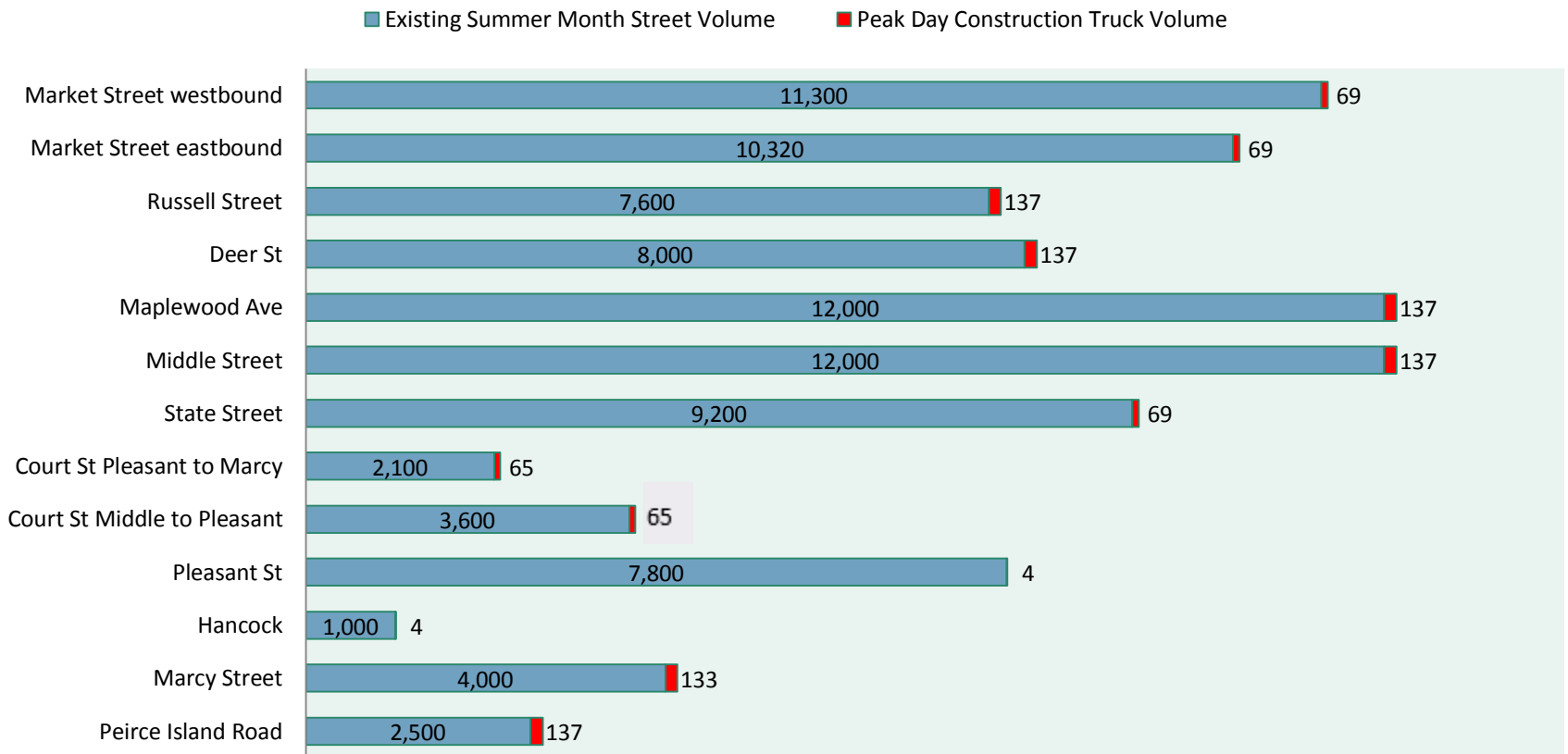


The Max Day = 137
Trips or 69 Round Trips



Net Impact to Traffic Volume

Max Day Construction Traffic on Summer Condition Traffic Volumes



Why Not Just go to Pease?



Pease is not an option today.

- PDA Approval Required
- Significant Regulatory Challenges
- No Eminent Domain Available
- Schedule for Completion Would Extend Beyond 2020
- Peirce Island Infrastructure; Mechanic Street Pump Station Would Remain
- Streets Torn-up in the South End and Downtown
- Cost



Cost Estimates for TN 8 (\$Millions)

	Option 1 Upgrade Peirce Island WWTF and Pease WWTF		Option 2 Upgrade Pease WWTF (Deer St Outfall)	
	Capital	Life Cycle	Capital	Life Cycle
Immediate Costs	90.1 (Peirce Island ~\$79.8M) (Pease ~\$10.3M)	164.9	131.4 137.9*	188.9
Potential Future Costs	43.6 ? (Pease ~\$9.4M)	-----	7.4 ?	-----

*Additional \$6.5M of Capital Costs to extend the outfall from Deer Street to Peirce Island



Originally Presented to City Council April 27, 2015



Potential Force Main and Outfall Alignment



17

CITY OF PORTSMOUTH WASTEWATER DIVISION



Originally Presented to City Council April 27, 2015





07/19/2010

Alternative Pipe Route in River

- Constructability
- Navigation Impacts
- Environmental Concerns
- Regulatory Approvals
- Maintenance
- Cost





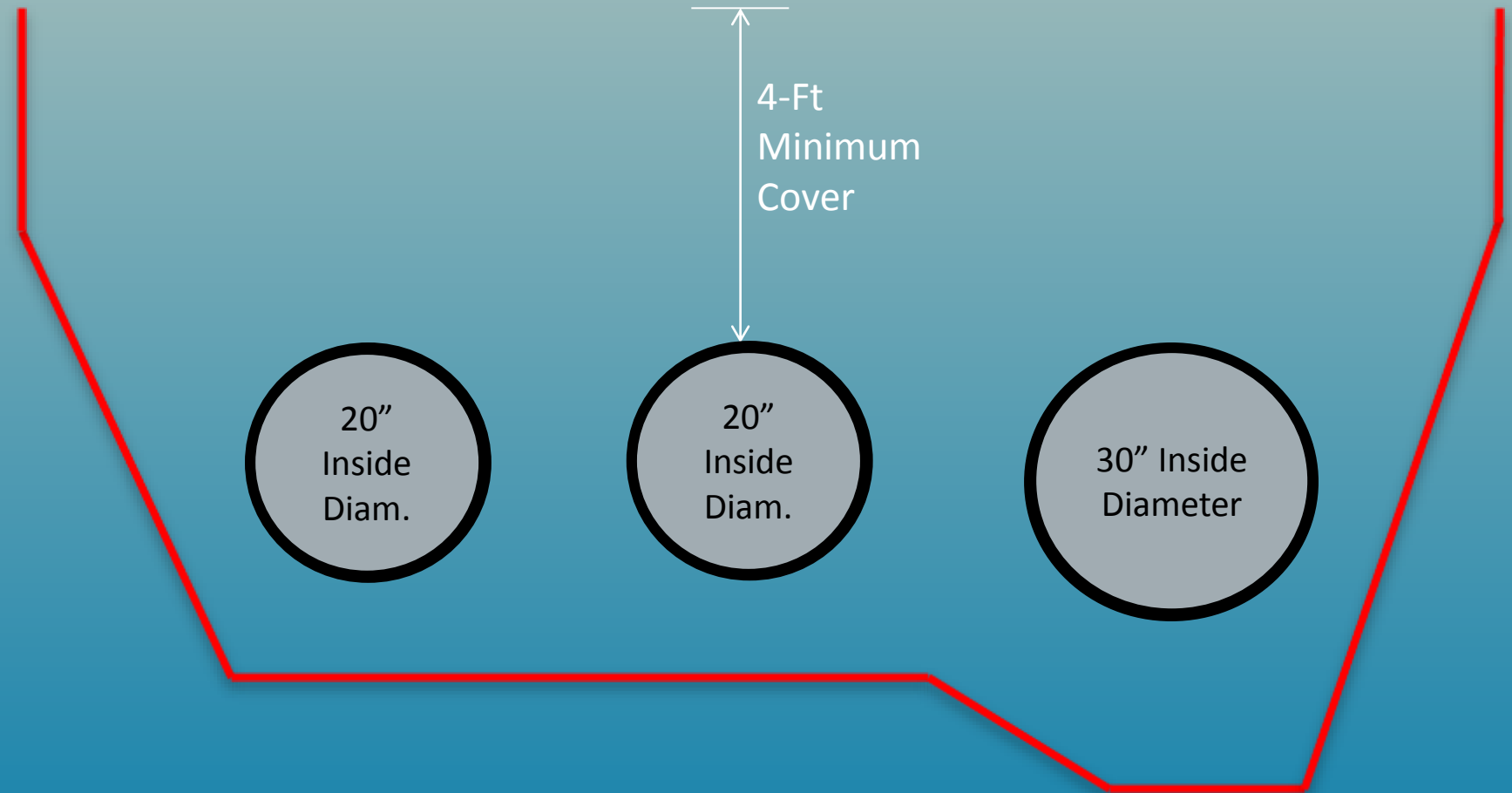
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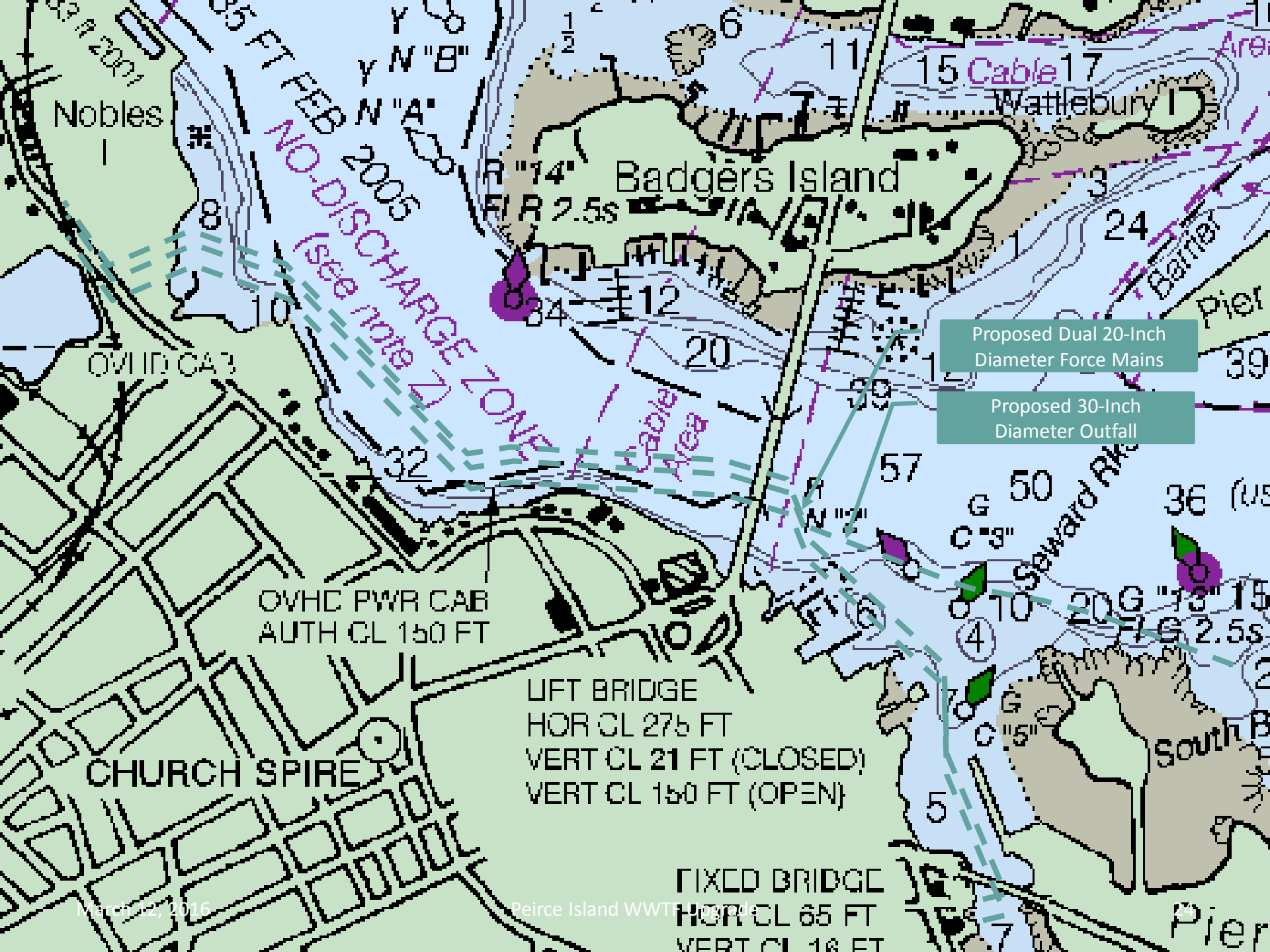


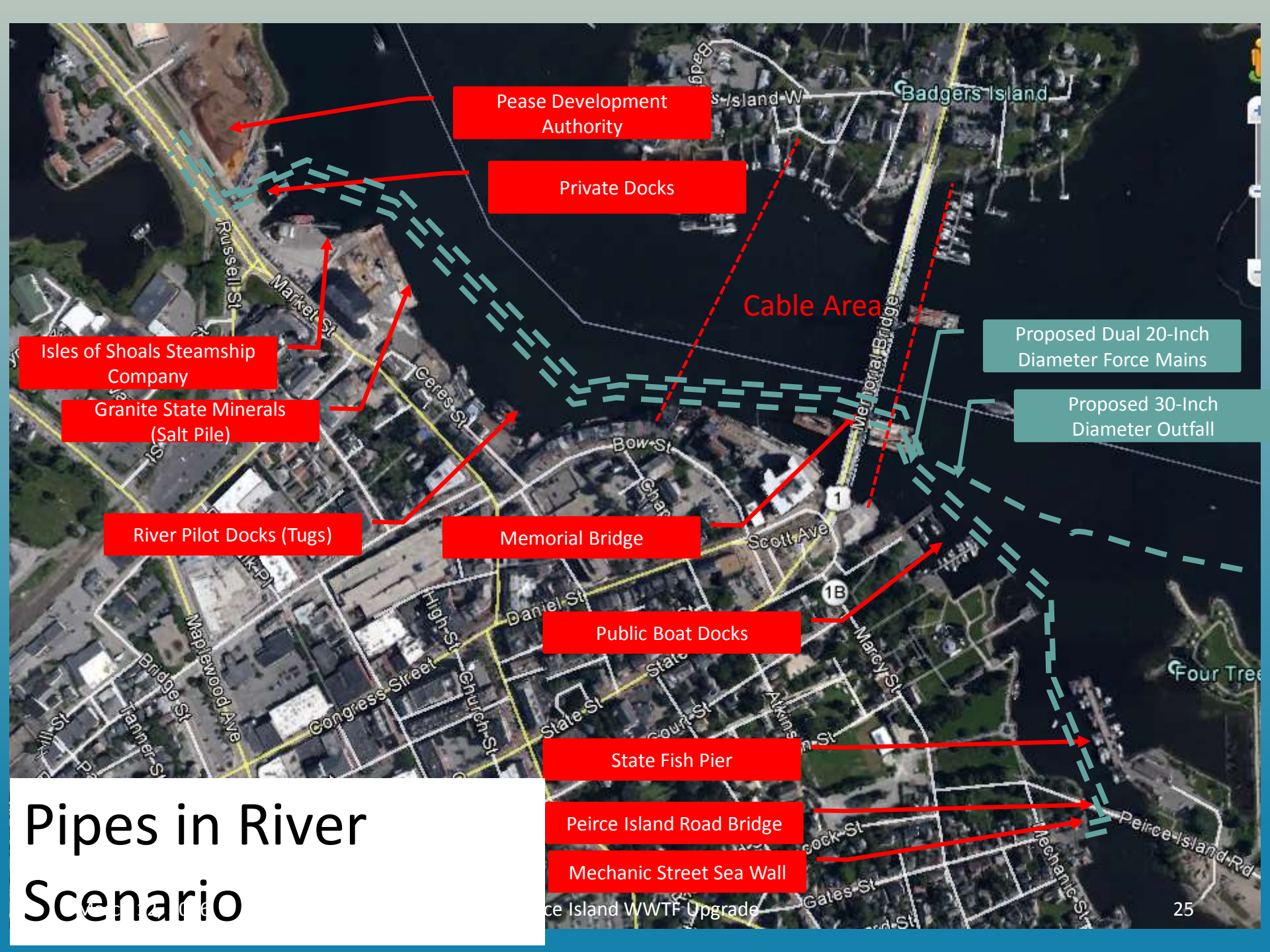
Peirce Island WWTF Upgrade

22

Pipes Under Water Cross Section







Pease Development Authority

Private Docks

Isles of Shoals Steamship Company

Granite State Minerals (Salt Pile)

River Pilot Docks (Tugs)

Memorial Bridge

Public Boat Docks

State Fish Pier

Peirce Island Road Bridge

Mechanic Street Sea Wall

Proposed Dual 20-Inch Diameter Force Mains

Proposed 30-Inch Diameter Outfall

Pipes in River Scenario

Environmental Concerns

- Impact to Fish Habitat
- Eel Grass Impact
- Benthic Impacts
- Migratory fish will limit window for construction



Regulatory Requirements

- NHDES Wetlands
- Shorelands Permit
- Alteration of Terrain
- Army Corp of Engineers
- National Marine Fisheries
- Historic Resources Section 106 review



Alternative Pipe Route in River

- Constructability
- Navigation Impacts
- Environmental Concerns
- Regulatory Approvals
- **Maintenance**
- **Cost - \$2.9 M Capital \$4.1 Life Cycle**



Next Steps

- Council Bond Authorization
- Bid Period (March 16 to May 2016)
- Contract Award/NTP (July 1, 2016)
- Additional Public Meetings
- Public Outreach
- Peirce Island Road Bridge Maintenance



Questions

