Jamestown Corridor Project

State of Good Repair and Resiliency Improvements in Response to Sea-Level Rise

Jamestown Town Council

January 16, 2024

RI dot
Driven to get you there

Overview of STIP ID 9992

Bridge:

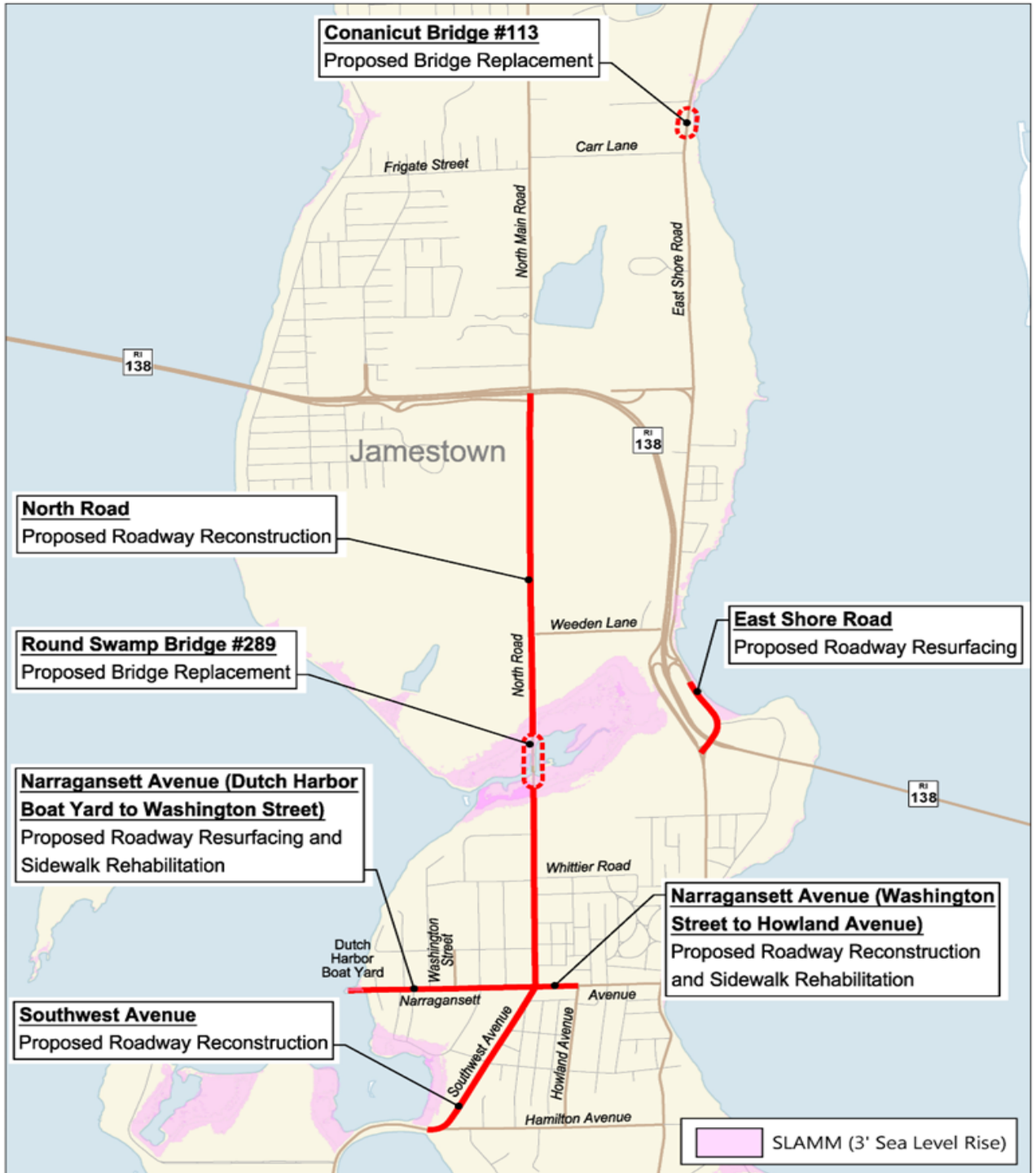
- Replacement of bridge #113-Conanicut Bridge on East Shore Road
- Culvert replacement at East Shore Road at RITBA Toll Plaza
- Replacement of bridge #289-Round Swamp Bridge on North Road

Pavement

- Roadway resurfacing and reclamation to North Road and Southwest Avenue from RI-138S ramp to Mackerel Cove
- Reconstruction of East Shore Road from RITBA Headquarters to Conanicus Avenue

Safety

- Signage and Striping throughout study area
- Guardrail replacement/removal and installation of concrete median
- Intersection realignments at Southwest Ave. & Hamilton Ave. and Conanicus Ave & Bay View Drive



STIP ID 9992

Program Detail Report
STIP: 2022-2031 (Revision 10 with Pending Changes)

RIDOT Corridor Projects Program

STIP ID: 9992 PTS ID: 2607U Project Name: Corridor - Jamestown

Municipality	Description	Responsible Agency
Jamestown	This project includes repairs to two bridges and North Road in Jamestown. Bridges #113 and 289: Replacement. In addition to bridge work, roadway resurfacing and reclaim along North Road and East Shore Road will be included. Roadway work will be performed in conjunction with handicap ramp and sidewalk repairs. This project may require additional funding beyond 2031.	RIDOT

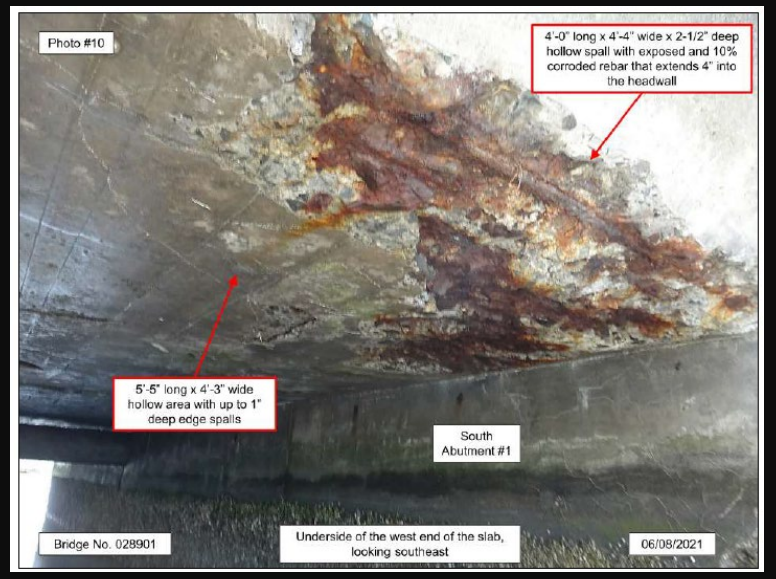
Phase	Funding	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total
Design	PROTECT	0.2000	0.2000	0.4000	0.8000							1.6000
Design	RICAP Match	0.0500	0.0500	0.1000	0.2000							0.4000
	Subtotal	**0.2500**	**0.2500**	**0.5000**	**1.0000**							**2.0000**
Construction	OutYear					7.0000	8.5000	7.0000				22.5000
	Subtotal					**7.0000**	**8.5000**	**7.0000**				**22.5000**
Other	OutYear								0.5000			0.5000
	Subtotal								**0.5000**			**0.5000**
	Total	**0.2500**	**0.2500**	**0.5000**	**1.0000**	**7.0000**	**8.5000**	**7.0000**	**0.5000**			**25.0000**

Assets Within Project

Asset Type	Asset ID	Asset Name	Facility Carried	Municipality	Treatment Type	SLR
Bridge	011301	Conanicut	East Shore Rd	Jamestown	Replace	Yes
Bridge	028901	Round Swamp	North Main Rd	Jamestown	Replace	Yes
Safety	HSIP_CT-075-2	Intersection Safety Improvement at Southwest & Hamilton	Southwest Avenue	Jamestown	Install ADA Ramps; Upgrade Crosswalk; Geometry Imp	No
Safety	HSIP_CT-75_01	Intersection Safety Improvement at Southwest & High	Southwest Avenue	Jamestown	Install ADA Ramps; Upgrade Crosswalk; Geometry Imp	No
Safety	HSIP_CT-75_03	Intersection Safety Improvement at Conanicus & Bay View Drive	Conanicus Avenue	Jamestown	Geometry modification; ADA ramp repairs	Yes
Pavement	Pave_312	Southwest Ave (Hamilton Ave to Narragansett Ave)	Southwest Ave	Jamestown	Mill and Fill	No
Pavement	Pave_313	East Shore Rd (Conanicus Ave to RITBA HQ)	East Shore Rd	Jamestown	Reconstruction	Yes
Pavement	Pave_314	North Rd (Narragansett Ave to Round Swamp Bridge)	North Rd	Jamestown	Mill and Fill	Yes
Sidewalk	SDW_47966	SDW Southwest Avenue S (Hamilton Ave. to Narragansett Ave.)	Southwest Avenue	Jamestown	Rehabilitation	No
Sidewalk	SDW_47967	SDW North Road N (Narragansett Ave. to Swinburne St.)	North Road	Jamestown	Rehabilitation	No
Sidewalk	SDW_47968	SDW North Road S (Whittier Rd. to Narragansett Ave.)	North Road	Jamestown	Rehabilitation	No

Project Challenges

- Condition of Bridge #289
  - Built in 1934
  - Serious Condition
  - Hydraulic opening too small
- Flooding and Sea Level Rise
  - Both bridges in project are projected to be overtopped by 2050
  - 100-Year Storms could bring 12 feet
- Cultural Resources/Section 106
  - Potential for significant delay
  - Part of archaeological district

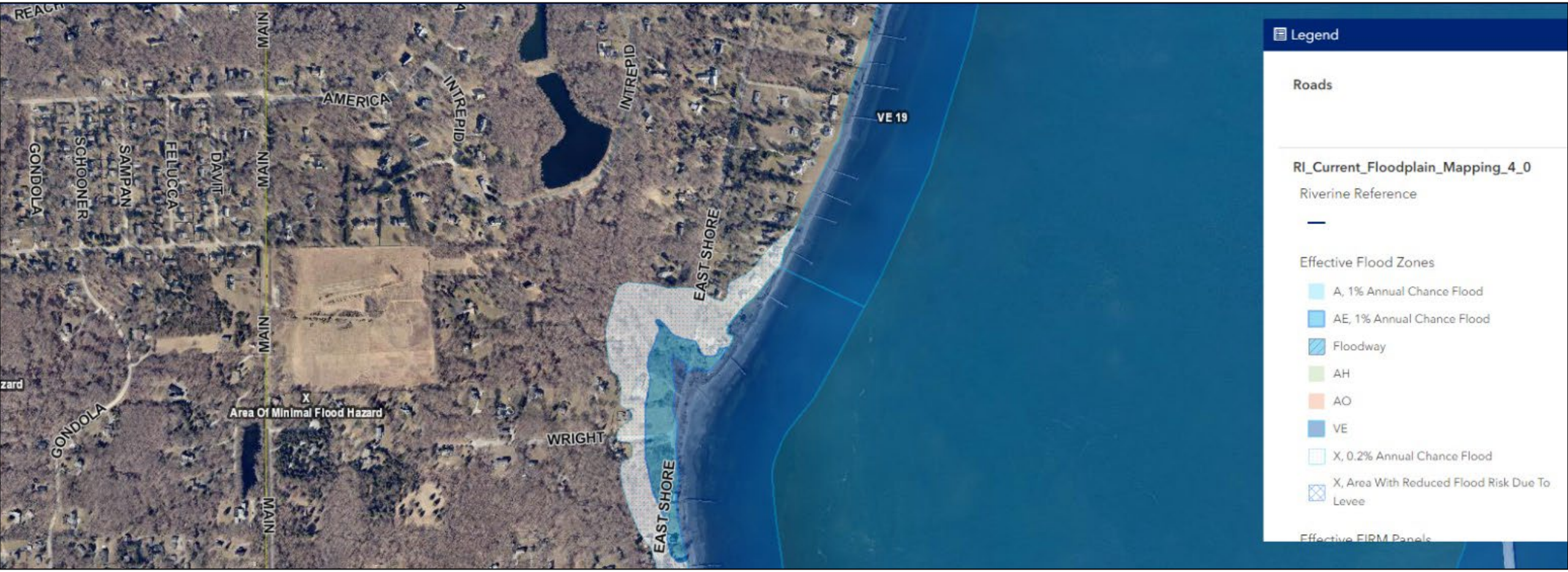


Actions to Date

- Spring 2022: Contract with VHB for Readiness Analysis
- Summer-Fall 2022: Peer exchanges and development
  - October: FHWA Peer Exchange
  - December: AASHTO Peer Review
- 2022-2023: Hydraulic Analysis
  - Analysis of SLR Impact
  - Alternatives Analysis

Current Flood Zones in Jamestown

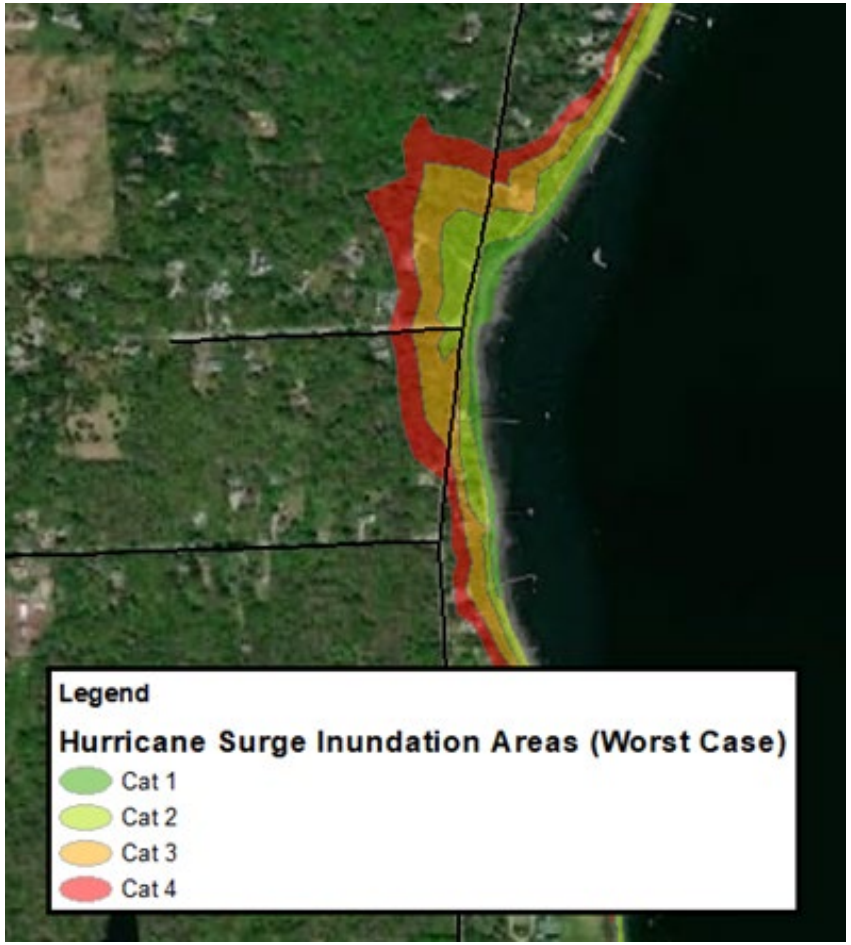
Current Flood Zones in Jamestown

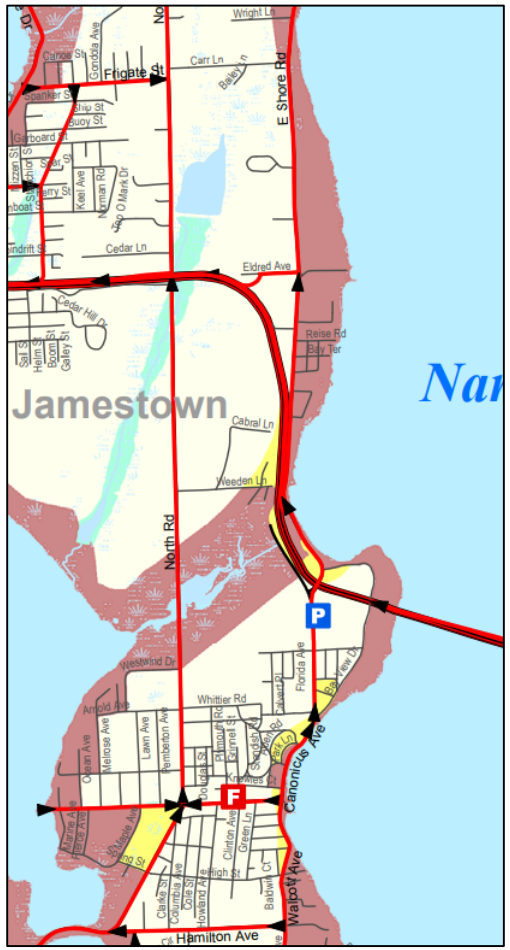


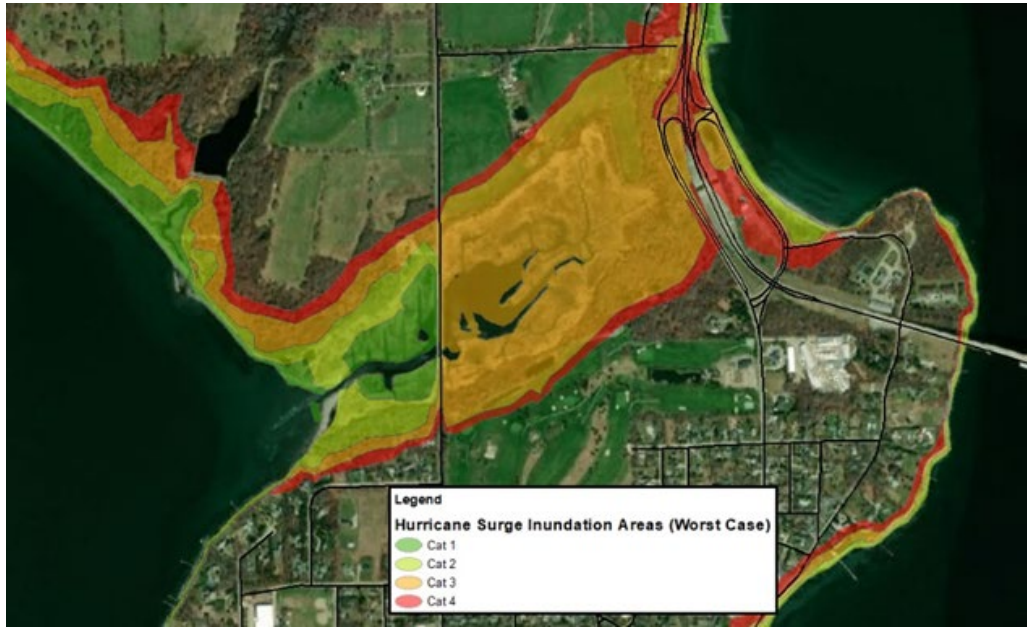
Bridge #113-Conanicut Bridge on East Shore Road is in a VE flood zone and has a 1% annual chance of flooding.

Projected Hurricane Storm Surge in Jamestown

- Flooding
- Evacuation Routes
- Surge Danger







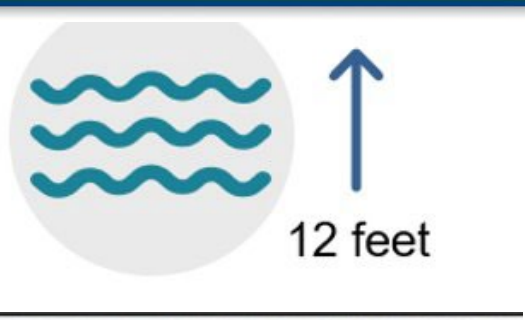
Future Sea-Level Rise Only

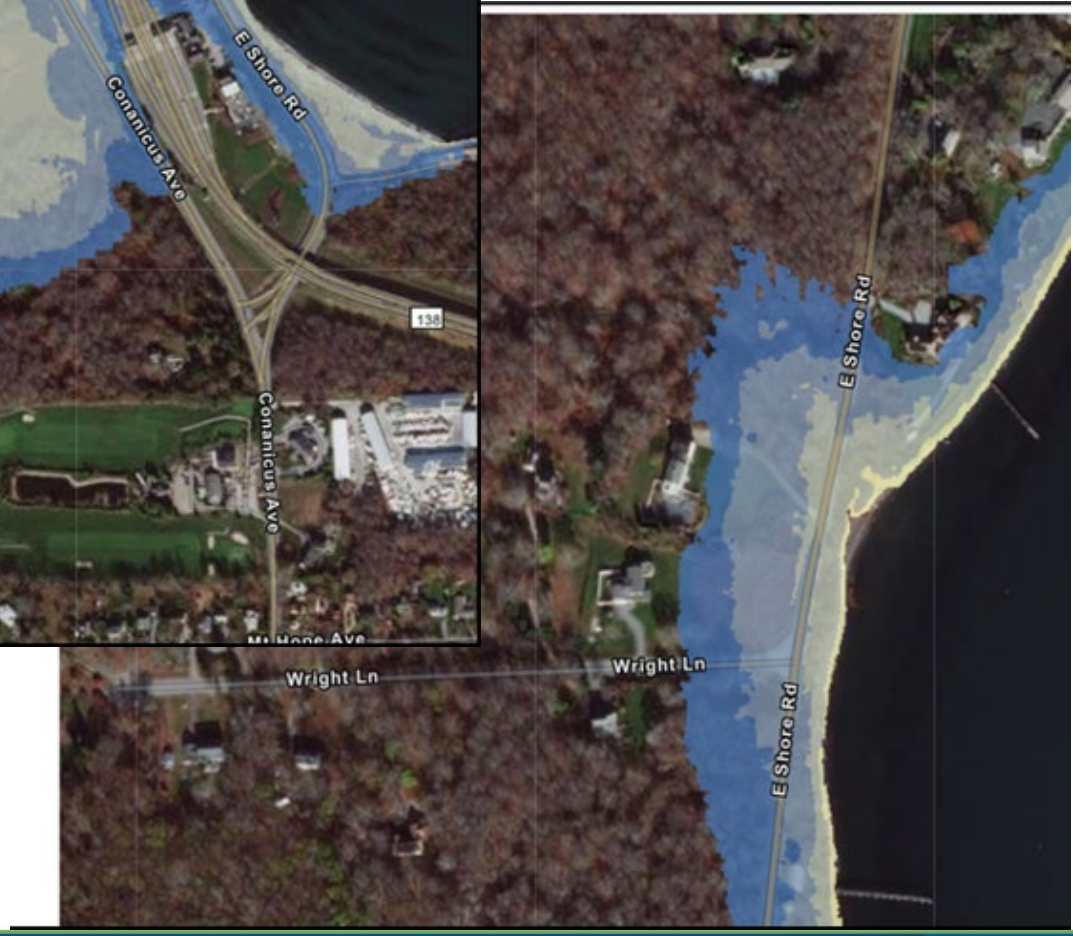
Up to 3 feet of SLR by 2050

These impacted areas are projected to expand over time, causing at least three feet of sea level rise along East Shore Road by 2050. That's <u>just</u> for sea level rise (SLR), not storm surge or additional flooding.

By 2050 sea level rise will spread well past the current edges of Great Creek. East Shore Rd. and Conanicus Ave. will still be out of the tidal zone.

Current Storm Surge Levels

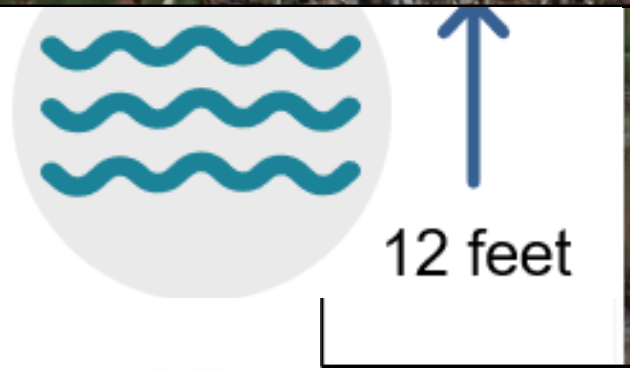




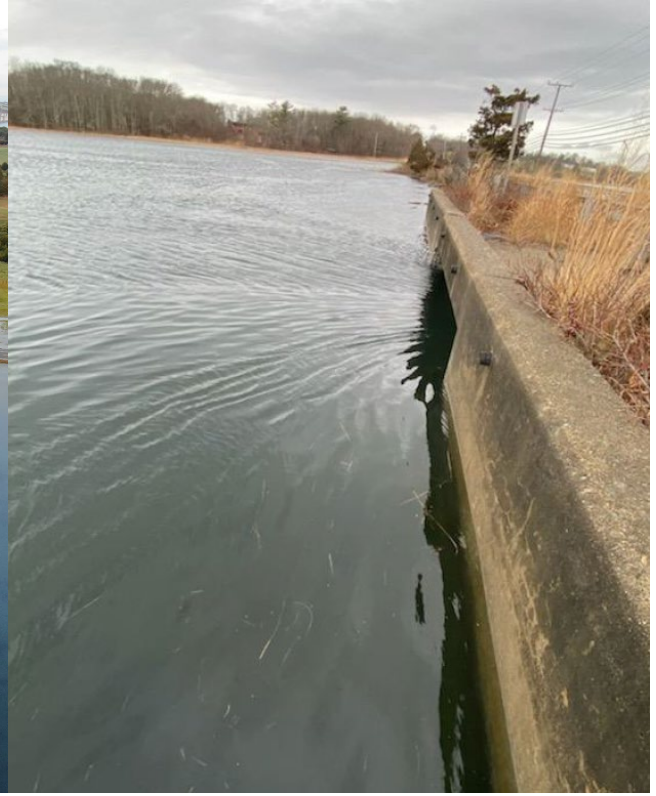
During a 1% annual chance storm today, the water is modeled to be 12 feet deep at the Bridge #113-Conanicut Bridge on East Shore Road and at Great Creek.

At East Shore Road and Conanicus Ave., the predicted depth is 4-8 feet.

Future SLR + Storm Surge



- 2050 Sea level rise indicates that both Conanicut and Round Swamp bridges will be overtopped if replaced at their existing grades
  - Storm surge on top of sea level rise amplifies effects
    - Increases risk of damage to structures



Abandonment: $22.9 M

In-Kind Replacement $29.7 M

Enlarge Hydraulic Openings $30.2 M

Raise Elevation, Capacity $60.4 million

Alternatives Analysis

- **Of the 5 Alternatives Developed, RIDOT Identified Alternative 5 as its Preferred Option**

** All estimates include roadway work on North Rd, Narragansett Ave, and Alternative 3 for East Shore Road paving and Bridge #113*

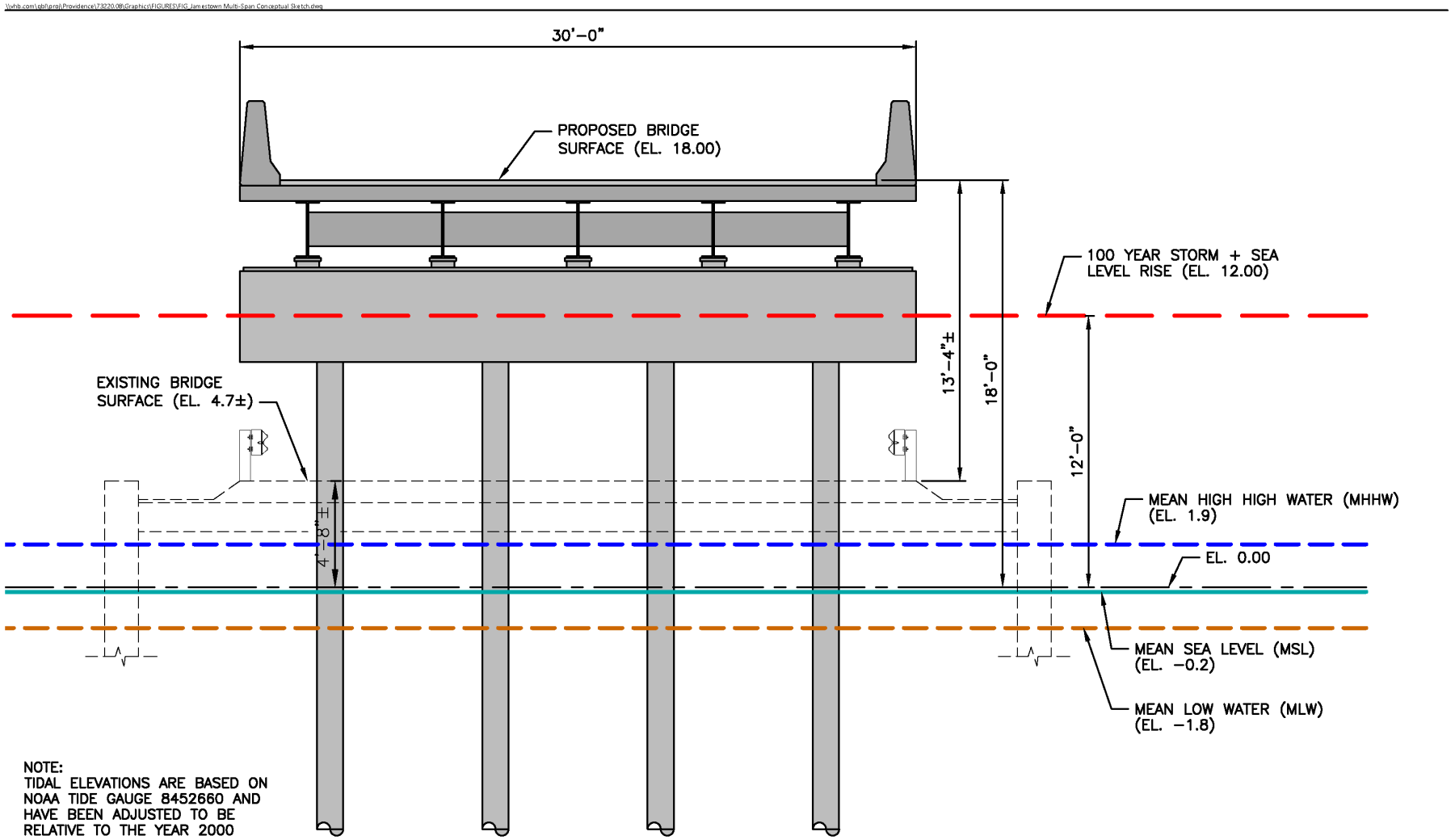
Alternative 5: Construction Multi-Span Bridge $94.3M

Existing Round Swamp Bridge #289

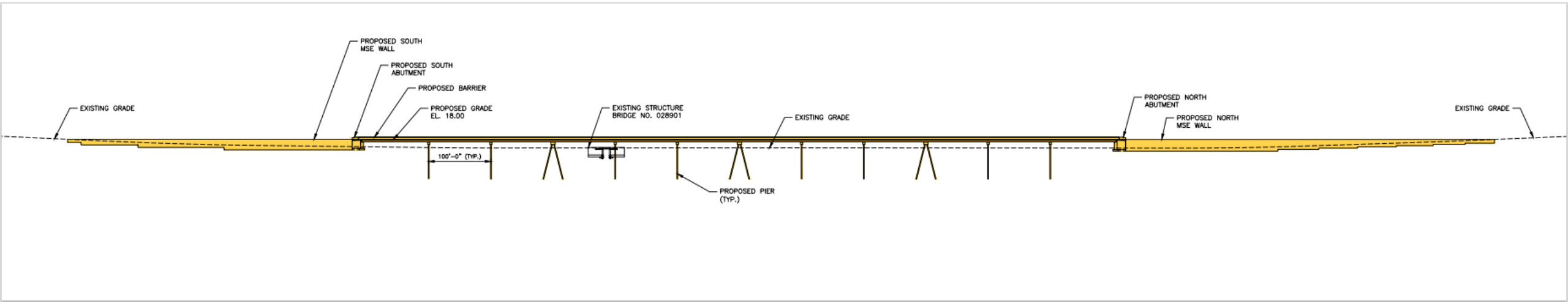
Proposed Round Swamp Bridge #289

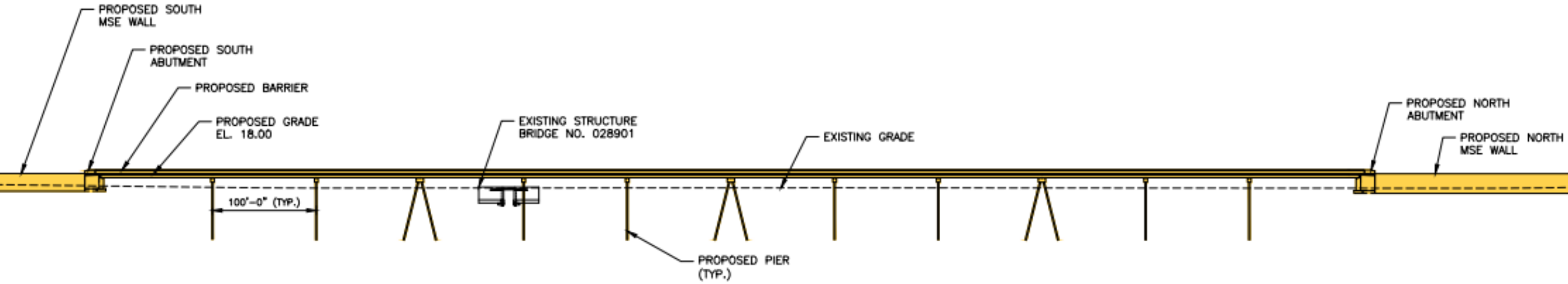
Alternative 5

- A 1,250 foot multi-span bridge would replace the existing causeway and undersized culverts
- Benefits:
  - Elevates existing roadway while addressing the ongoing issue of the undersized hydraulic opening of the existing culvert
  - Maximum level of protection from flooding through SLR, storms, and tidal events
  - Smaller footprint of permanent impacts compared to raising the roadway and increasing size of culverts (Options 3 & 4)



Alternative 5 - Profile





Action Steps

- Commit to an Alternative
- Additional stakeholder engagement
- Amend STIP to reflect increased budget and revised project schedule
- Seek additional funds through Discretionary Grant(s):
  - PROTECT Grant
  - Bridge

Thank You

Pamela Cotter

Administrator of Planning