



Planning for Sea Level Rise in the Ocean State



Julia Gold

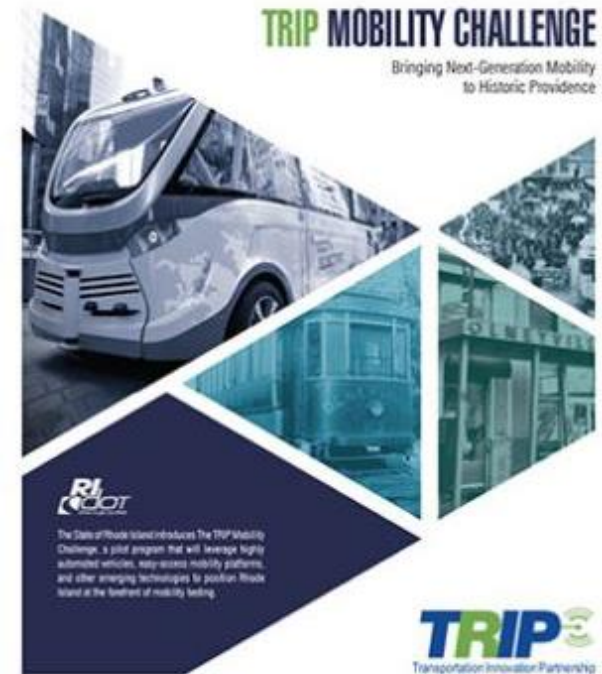
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The Office of Sustainability and Innovation

- Energy and Sustainability
- Climate Change and Resilience
- Mobility and Transportation Choices
- Innovation



BACKGROUND

Rhode Island- the Ocean State

- 48 miles long
- 37 miles wide
- 39 cities and towns— 22 are coastal
- **400 miles of coastline**



Newport Harbor

RIDOT manages the state's largest capital assets:

- **1,176 bridges**
- **more than 2,900 lane miles of roadway**

For decades, Rhode Island's roads and bridges have been ranked among the worst in the United States.



Rt. 37 Cranston

MOVING FORWARD

Adopting an Asset Management Approach

- In 2016, Governor Gina Raimondo signed into law the **RhodeWorks** bill, allowing RIDOT to implement truck tolling, GARVEE bond refinancing, and access to additional bonds.
- With RhodeWorks, RIDOT established the **first ten-year State Transportation Improvement Program (STIP)**.
- The Ten-Year program provides an opportunity to design a plan based on **asset management principles**.



— State of Rhode Island —



Transportation Improvement Program
FFY 2018-2027



MOVING FORWARD

Asset Management with transparency and accountability

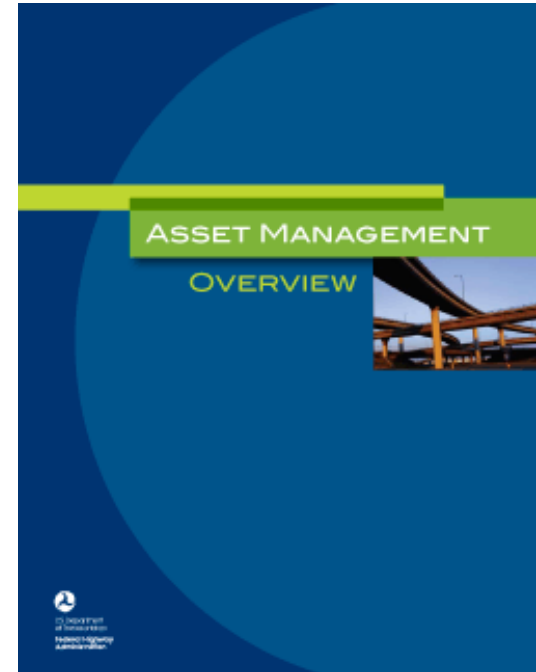


ASSET MANAGEMENT

Under FHWA guidelines, every state DOT is required to develop a risk-based asset management plan. (23 U.S.C. 119(e)(1), MAP-21 § 1106).

Our Transportation Asset Management Plan (TAMP) will serve as the guide for RIDOT to achieve its mission in:

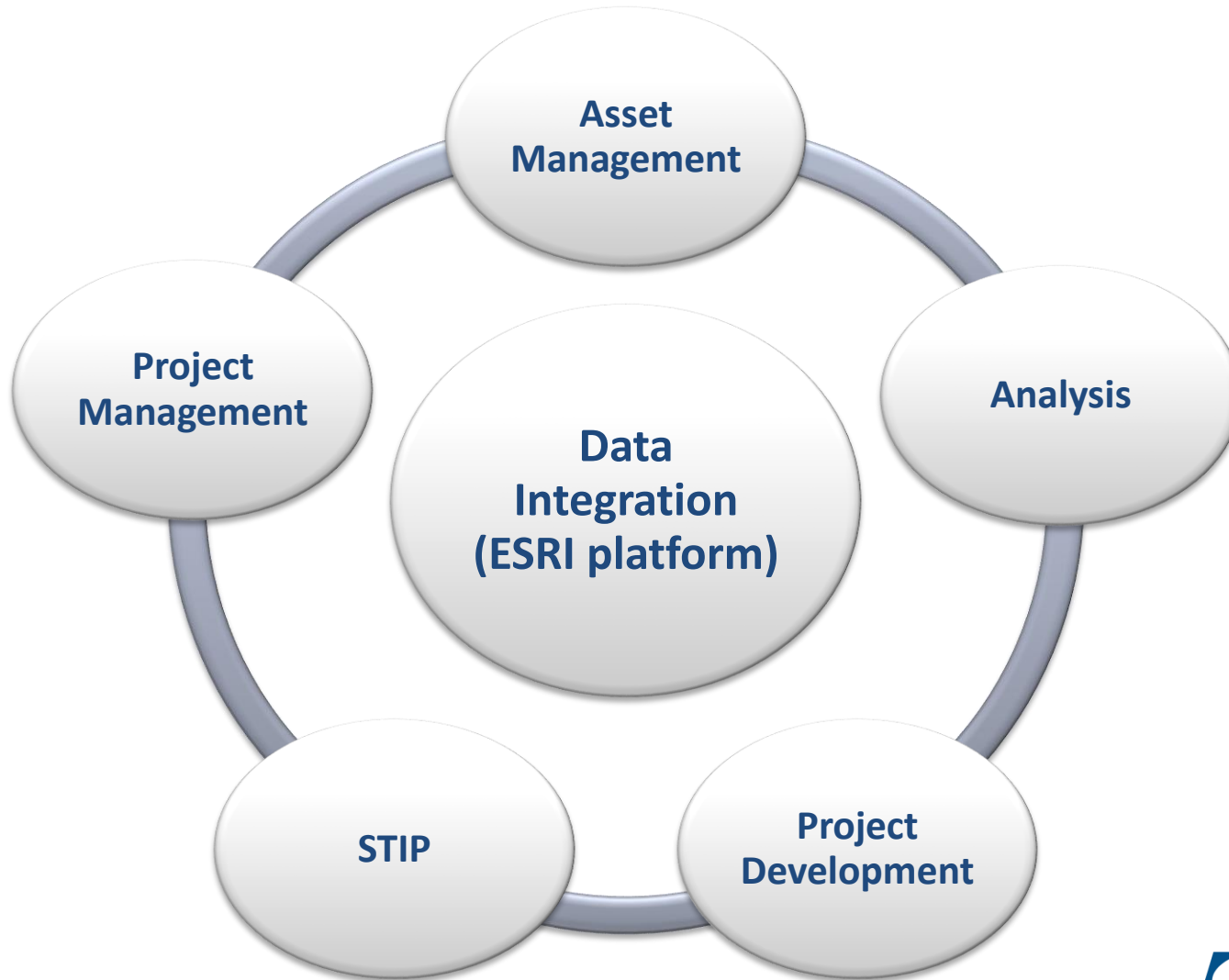
- **Sustainable asset stewardship**
- **Effective use of resources**
- **Robust justifications for funding and other decision making**



ASSET MANAGEMENT

- Consider all risks and opportunities.
- Fix what most needs to be fixed.
- Ensure a state of good repair.
- Think long-term, system wide, and holistically.

Data Integration



The Environmental Resiliency Tool

The **Environmental Resiliency Tool** will allow RIDOT, local governments, and other state agencies to assess the unique environmental risks associated with asset management.

Assets and Risks:

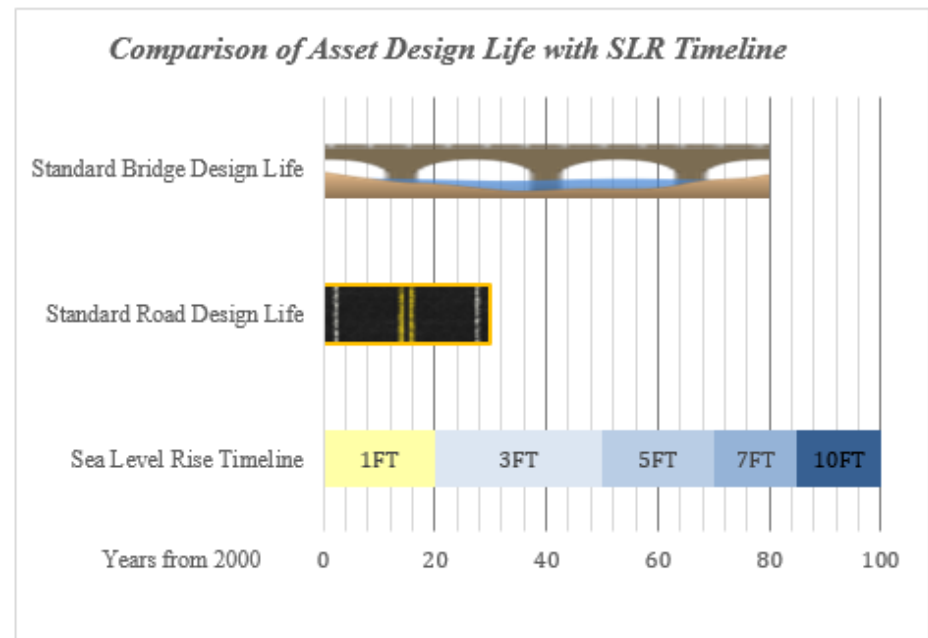
Roads and bridges

Sea level rise / storm surge

Inland Flooding

Structure:

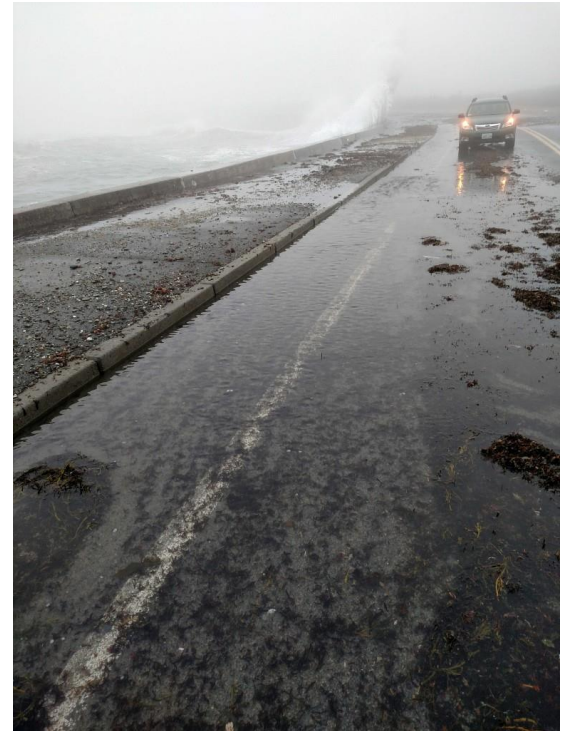
Geospatial analysis, overlaying asset and environmental data



The Environmental Resiliency Tool

The Tool will include three key deliverables:

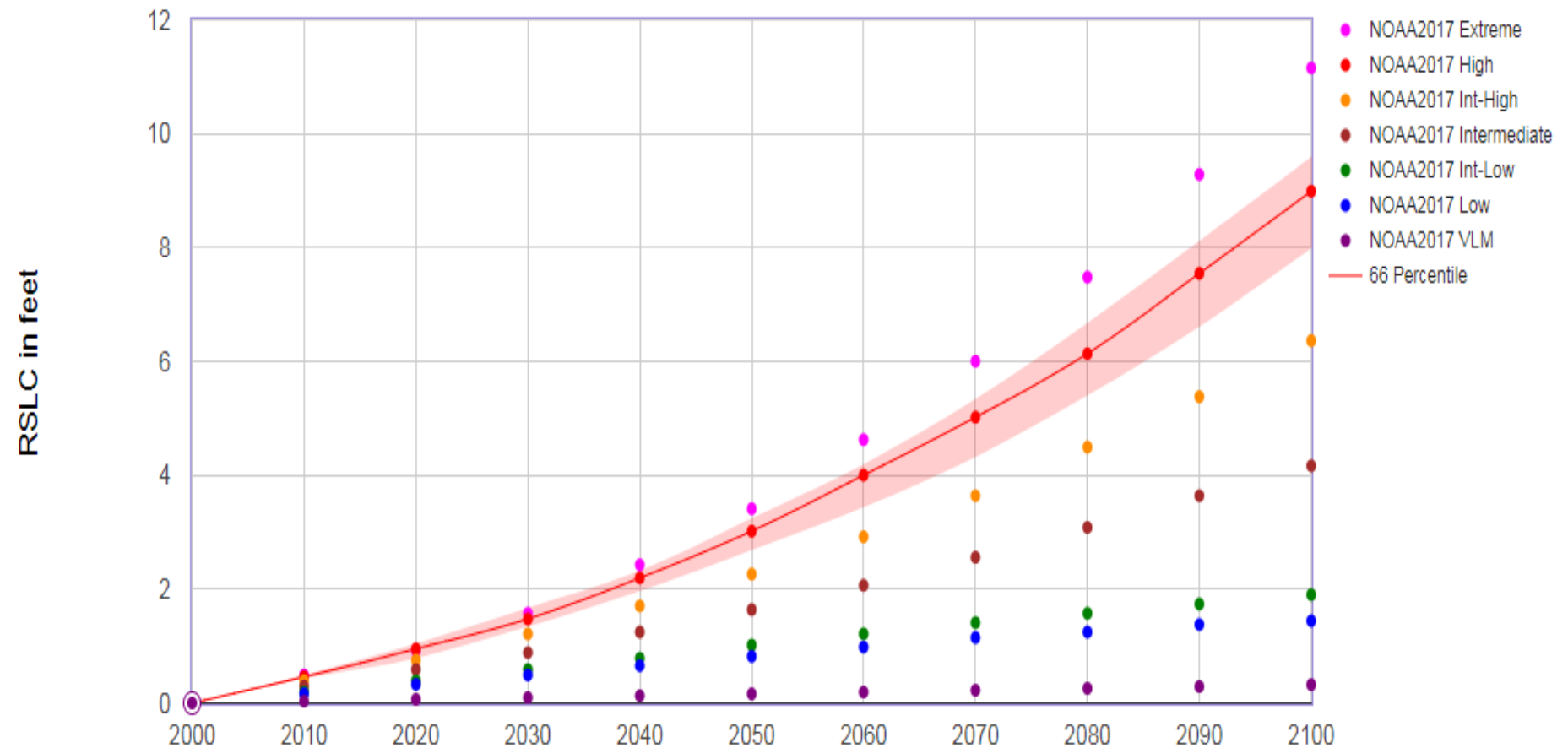
1. An easy-to-use, online platform that will allow users to identify environmental and natural risks and overlay them with other asset management information
2. A detailed, instructive guide that will help users implement smart, resilient policies and asset management strategies
3. A template for RI municipalities to utilize when proposing projects for the STIP.



Ocean Drive, Newport

Sea Level Rise Projections

NOAA et al. 2017 Relative Sea Level Change Scenarios for : NEWPORT



STORMTOOLS- Sea Level Rise Map Viewer

ArcGIS ▾ STORMTOOLS for Beginners

Modify Map

Details | Basemap |

Share | Print ▾ | Measure | Find address or place

About | Content | Legend

Legend

Will 1-FOOT of SEA LEVEL RISE affect my property?



Will 2-FEET of SEA LEVEL RISE affect my property?



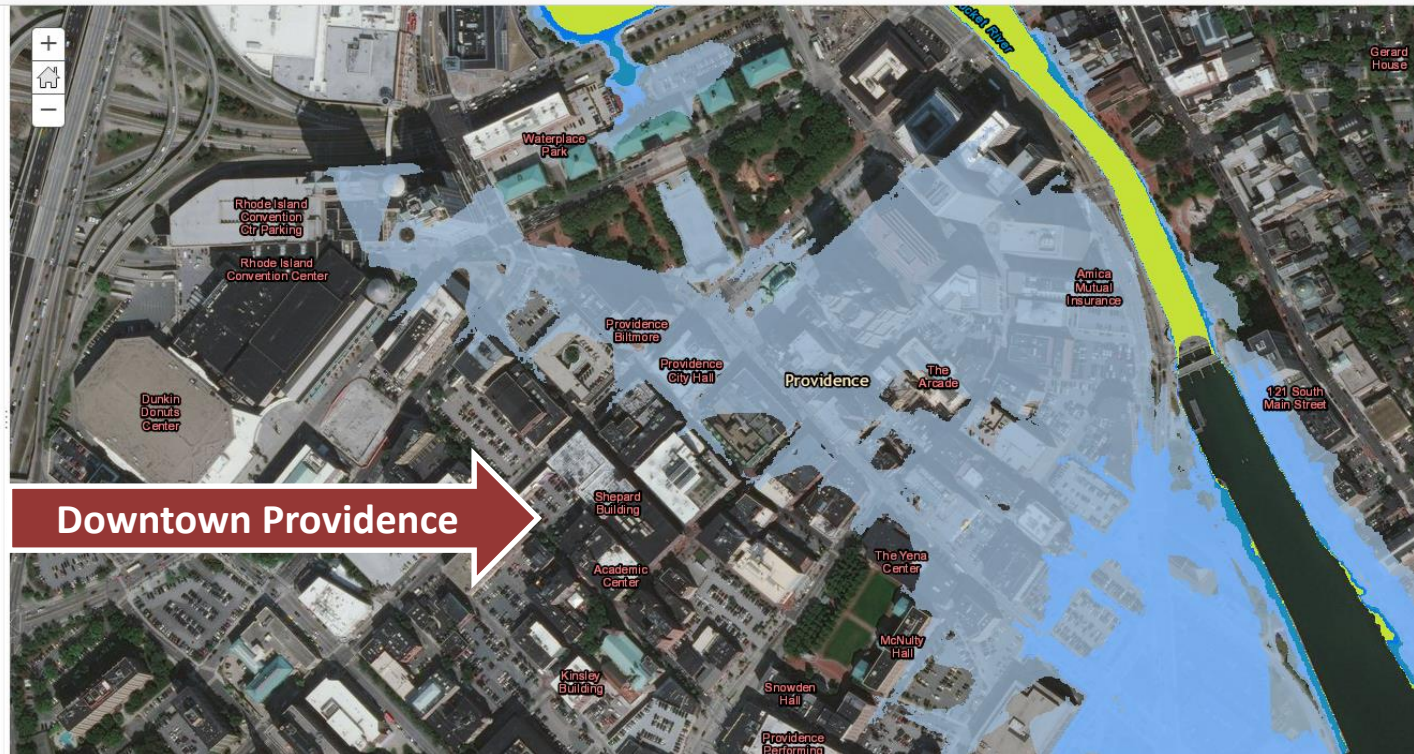
Will 3-FEET of SEA LEVEL RISE affect my property?



Will 5-FEET of SEA LEVEL RISE affect my property?

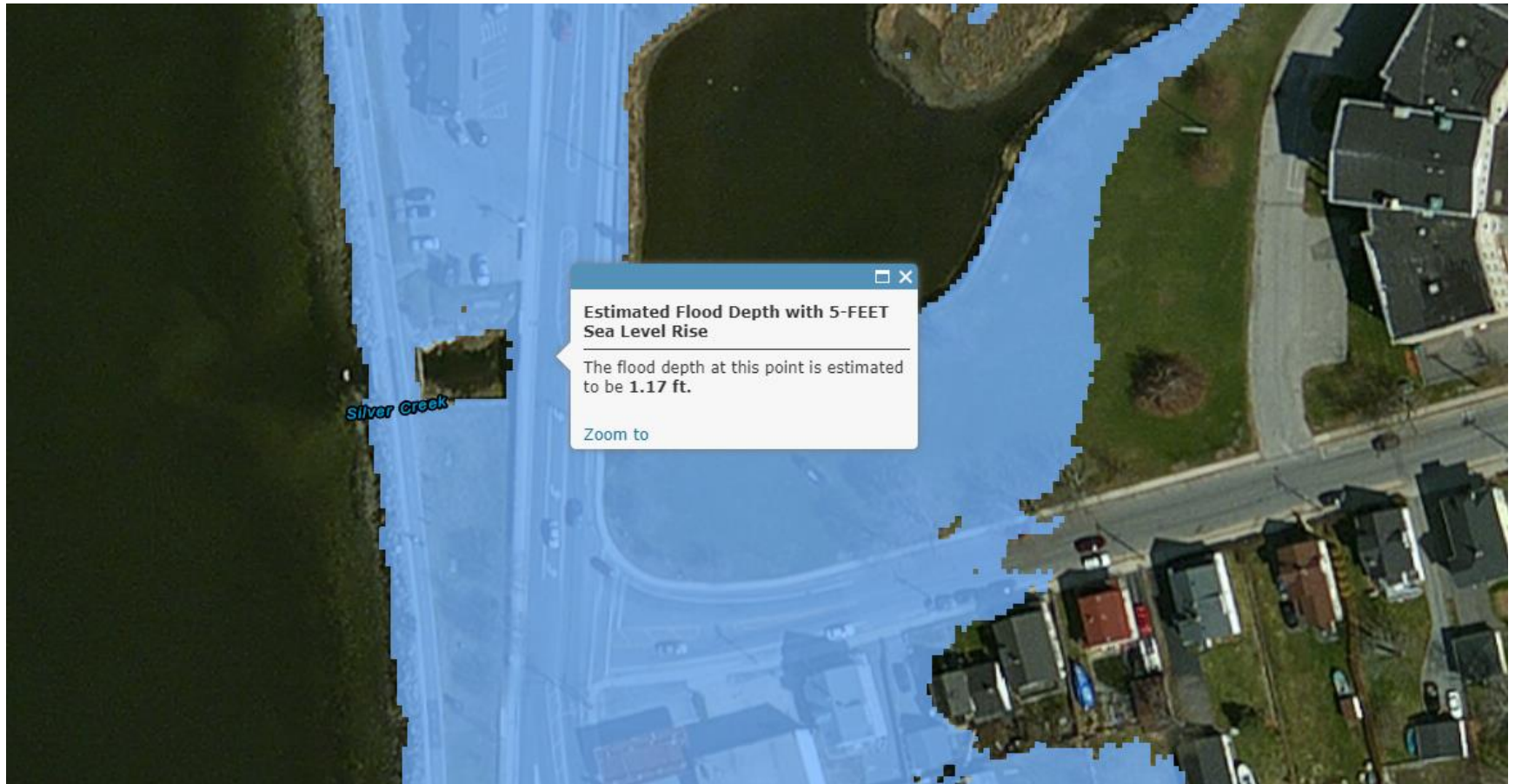


Will 7-FEET of SEA LEVEL RISE affect my property?



Downtown Providence

STORMTOOLS



Flooding from 5' of Sea Level Rise. Bristol, RI, Hope St. and Washington St.

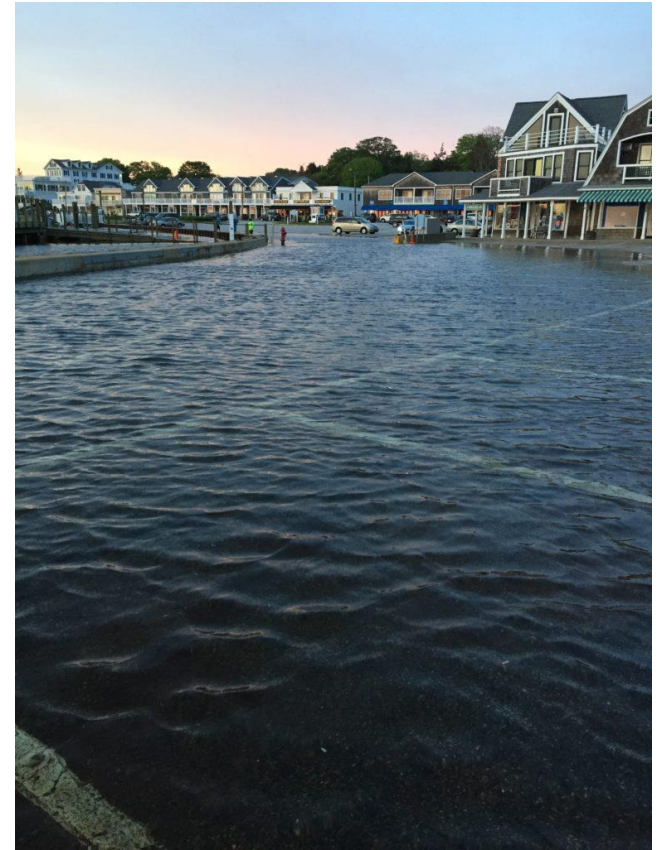
IMPLEMENTATION



Providence River Pedestrian Bridge- 18" added to design due to SLR risks

NEXT STEPS

- Development of the platform
- Current projects- assessment/updates
- Training and integration throughout RIDOT
- Policy development – scenario planning
- Long-term updates
 - New data (inland flooding, freeze thaw cycles, extreme heat, erosion, etc.)
 - Additional assets (shared use bike paths, stormwater infrastructure, etc.)



Recent king tide, Westerly

The Complicated Questions & Next Steps

- How do we plan for risk on a project level, when the whole system will be impacted?
- What's the best way to challenge the status quo based on uncertainty?
- How do we develop useful guidance that allows for flexibility and situational needs?

Questions?

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