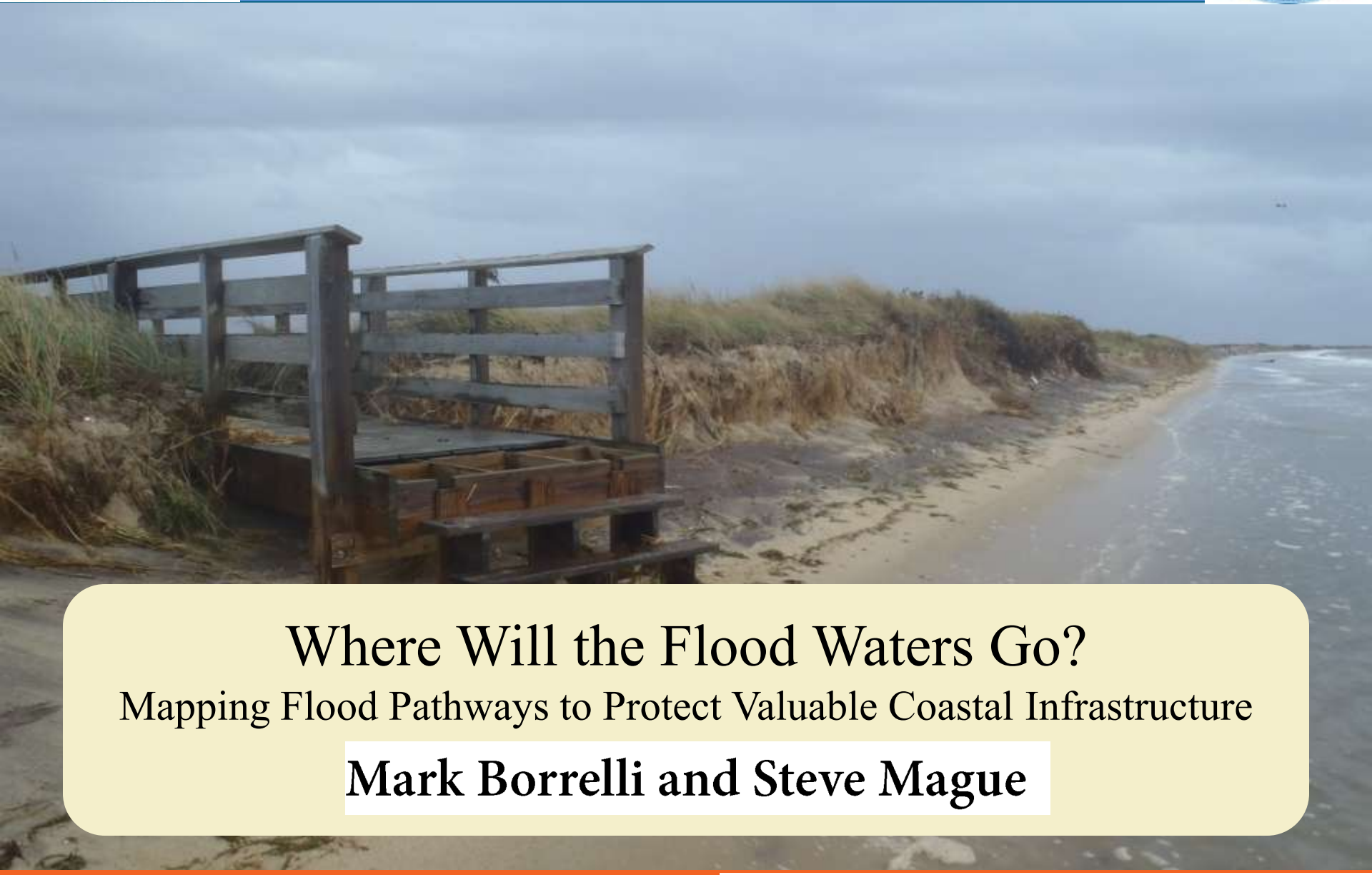


Where Will the Flood Waters Go?

Mapping Flood Pathways to Protect Valuable Coastal Infrastructure

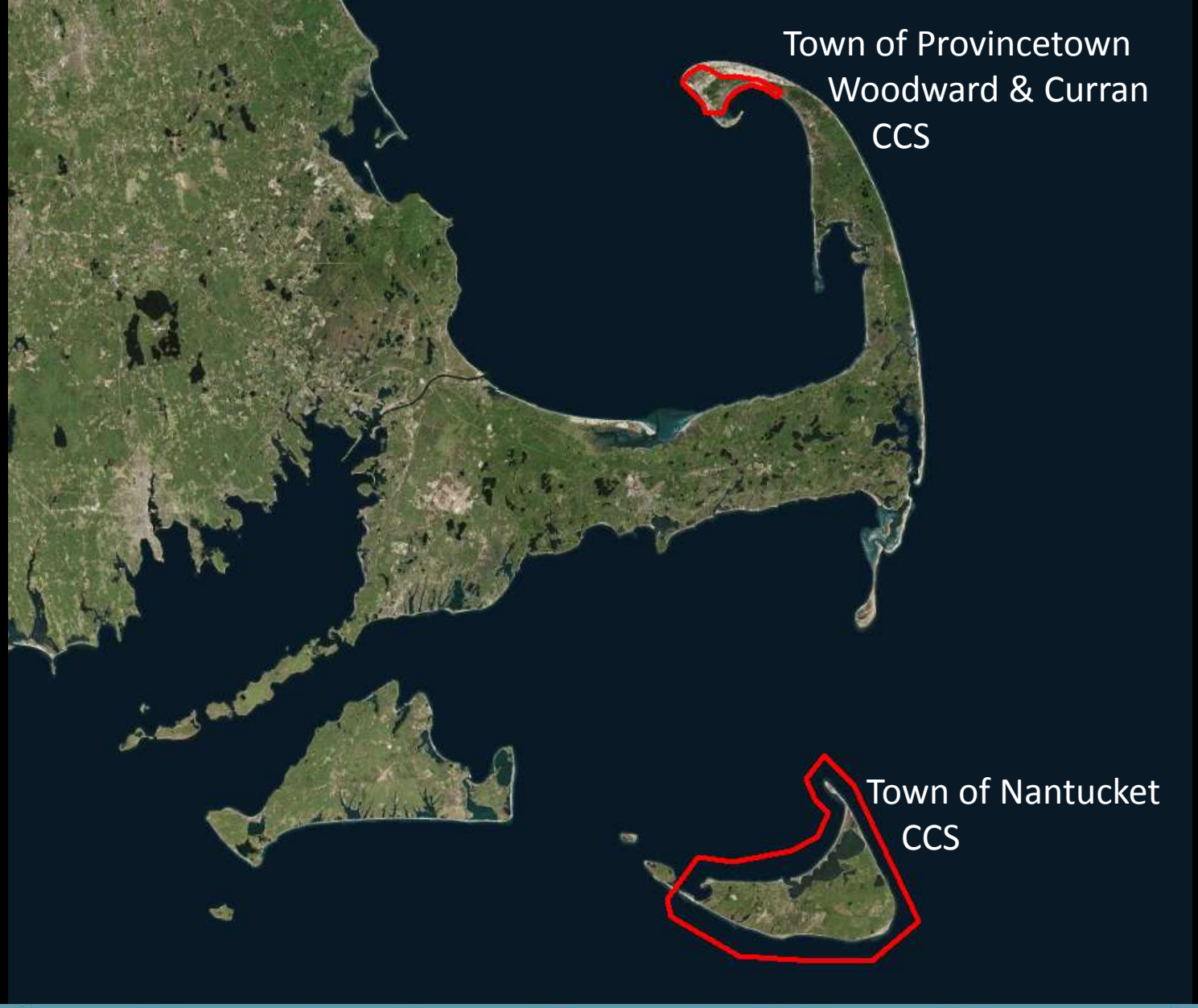
Mark Borrelli and Steve Mague

Problems facing coastal municipalities

- ‘Nuisance Flooding’
- Sea Level Rise
- Managed Retreat
- Storm Prep/Response
- Resource allocation

Why Map Storm-Tide Pathways

1. Useful AND usable to local entities
2. Address current and future concerns
3. Little, to no, computing resources
4. Increase resiliency and autonomy



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The Project(s)

1. Develop maps of STPs for use by towns

2. Link those STP maps to local tidal datum
   - Install tide gauge if needed

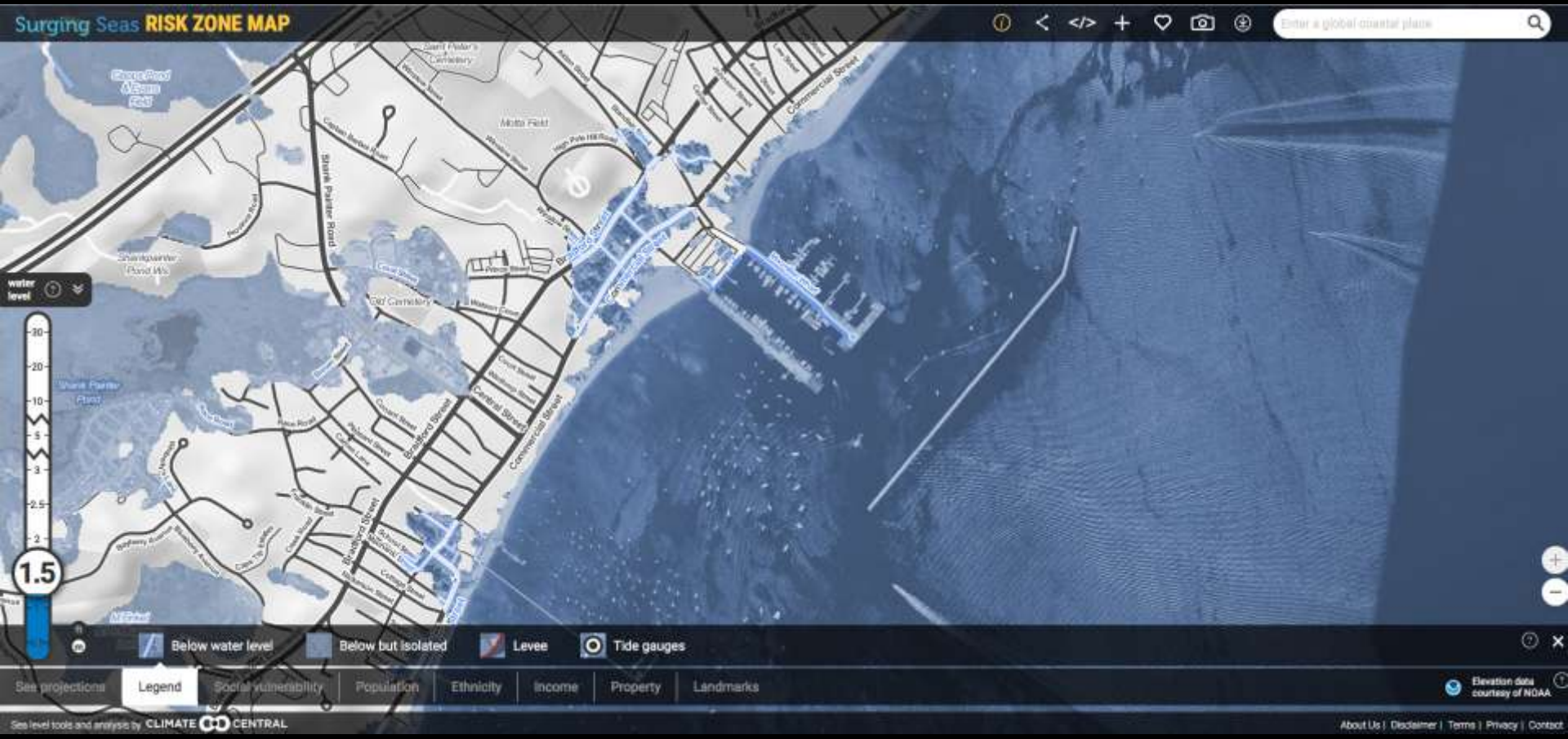
3. Add future levels of inundation to STPs

1. Develop maps of STP

- ID potential STPs using data viz software
  - Use best available elevation data
  - Fledermaus, ArcGIS
- Field Survey all STPs using RTK-GPS
- Develop hardcopy and digital maps

Surging Seas

(http://sealevel.climatecentral.org/)



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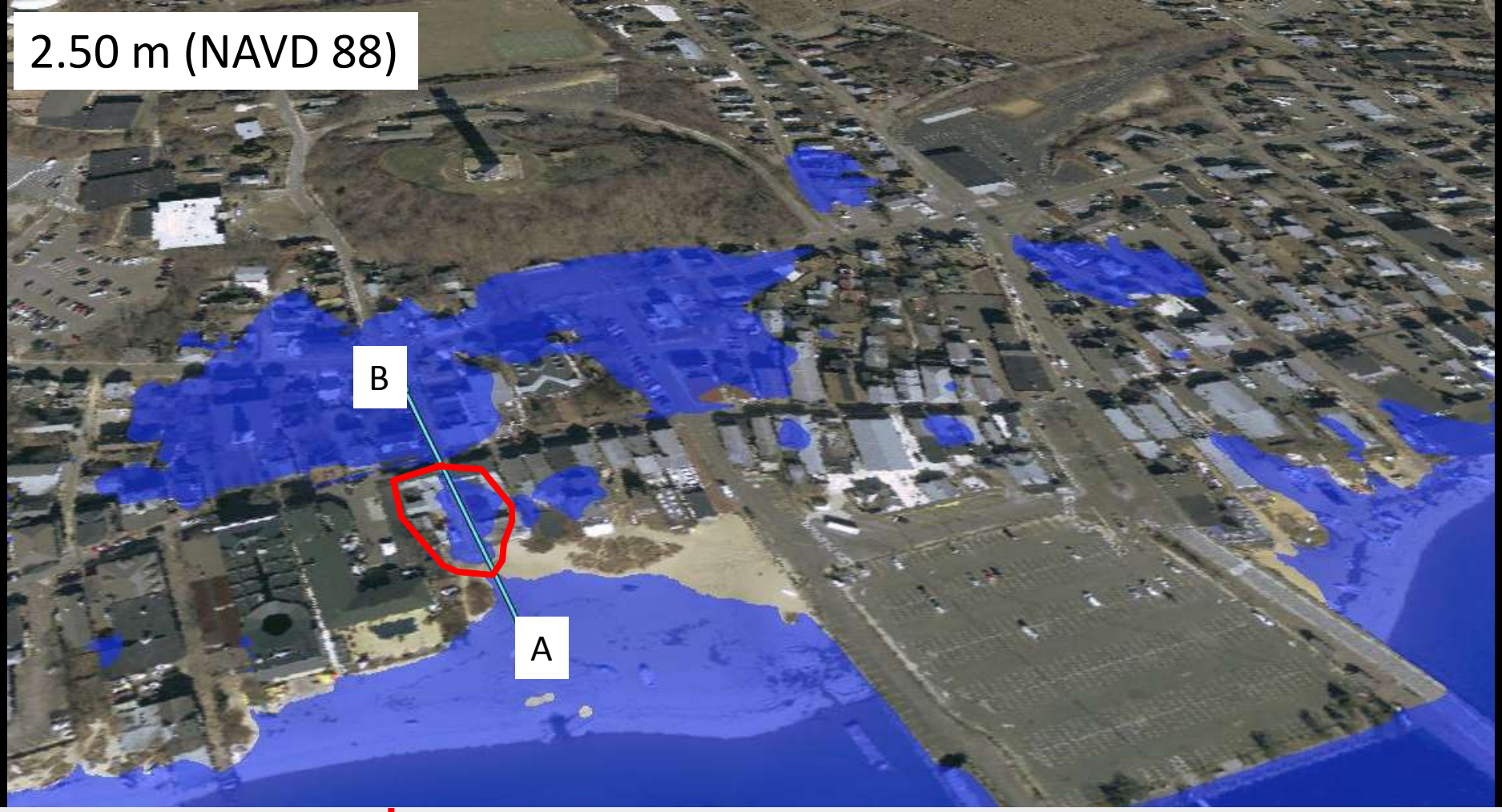
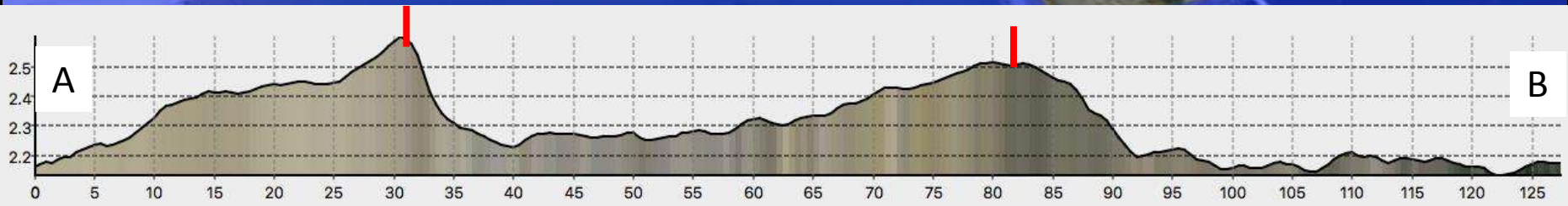
Downtown Provincetown





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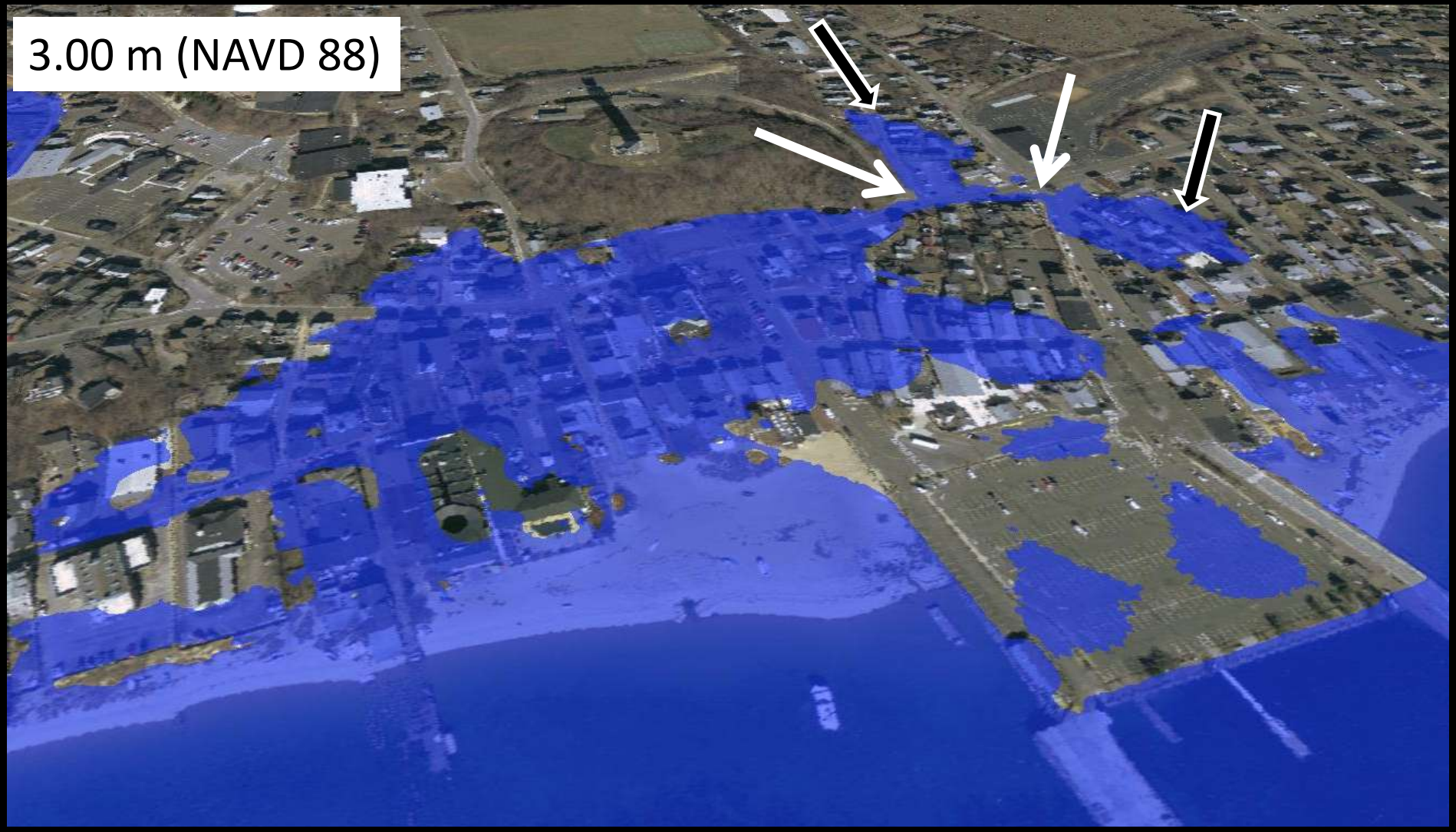
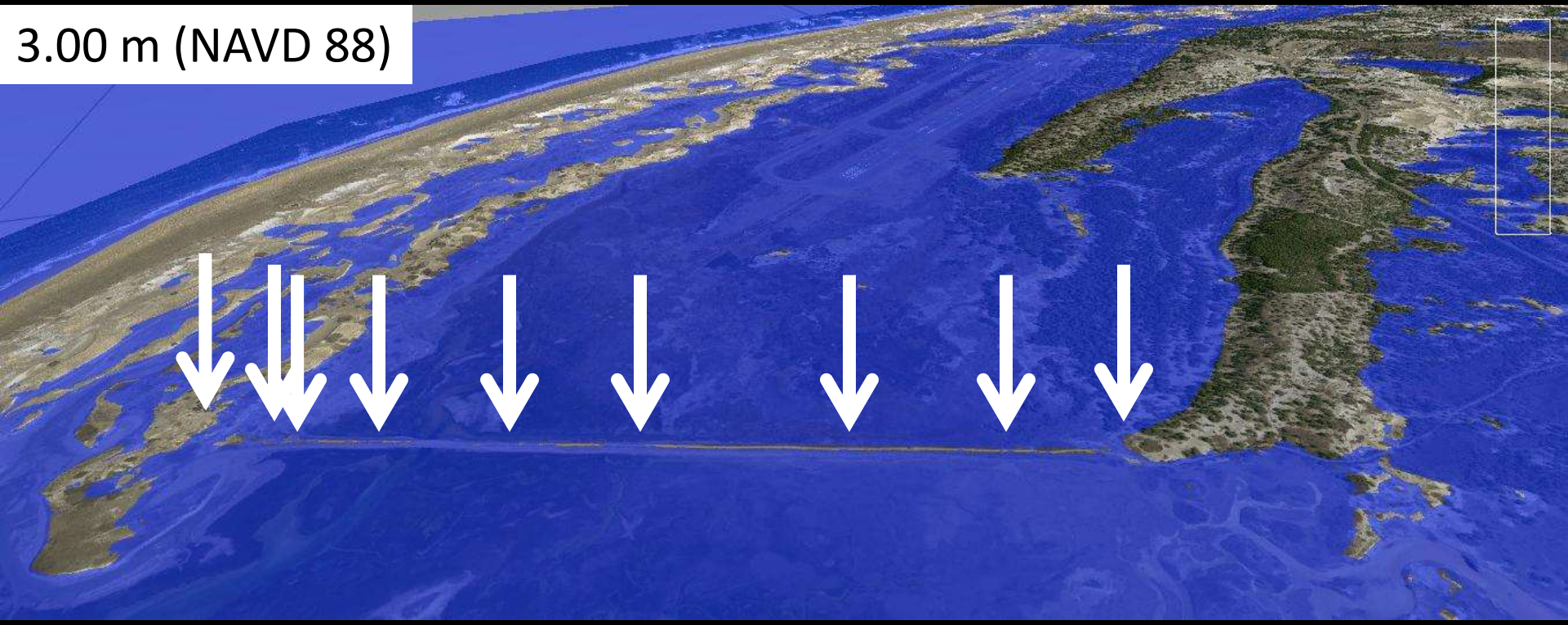
Secondary Pathways



Provincetown Airport



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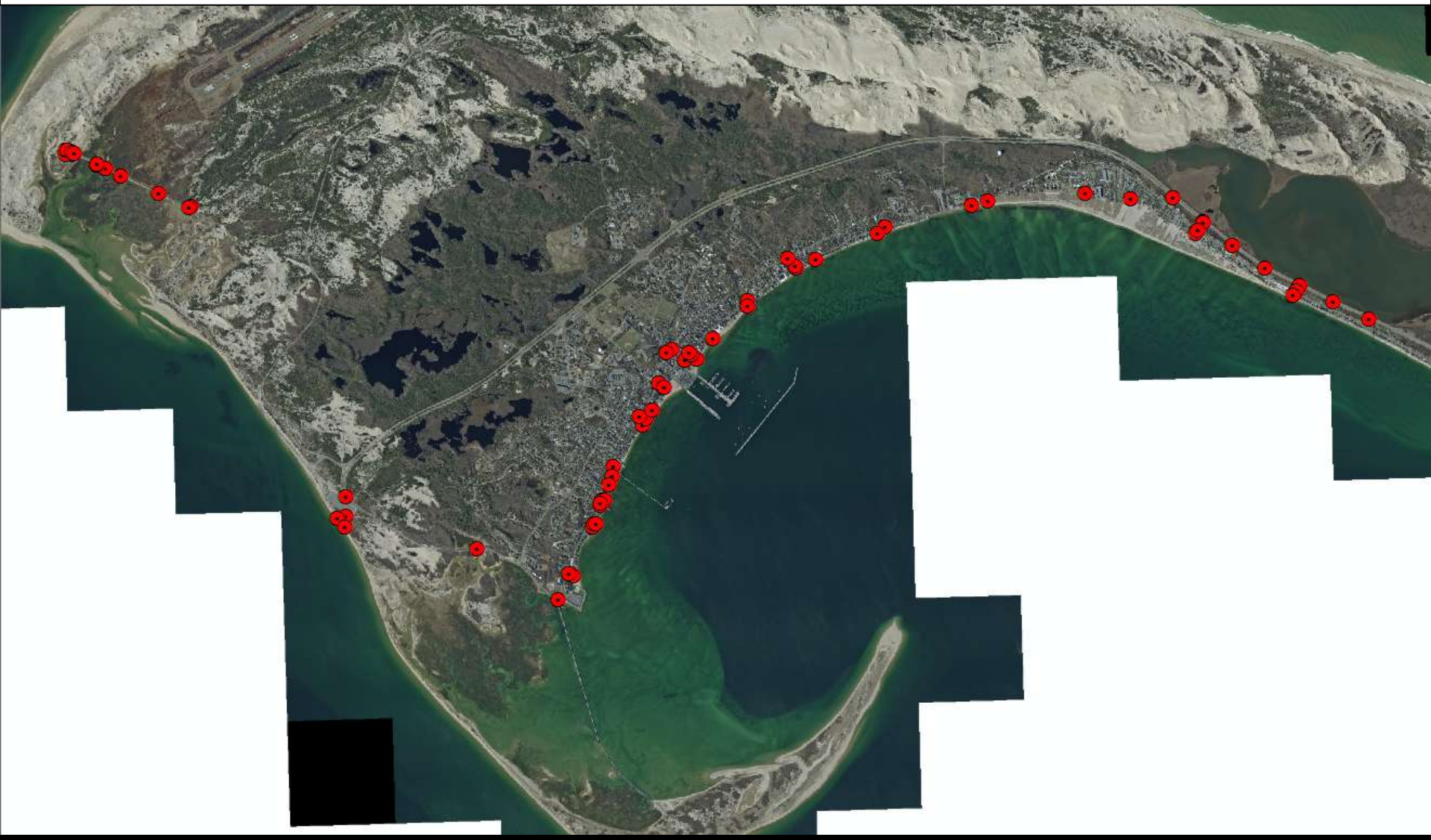
Preliminary Map of STPs (n = 117)



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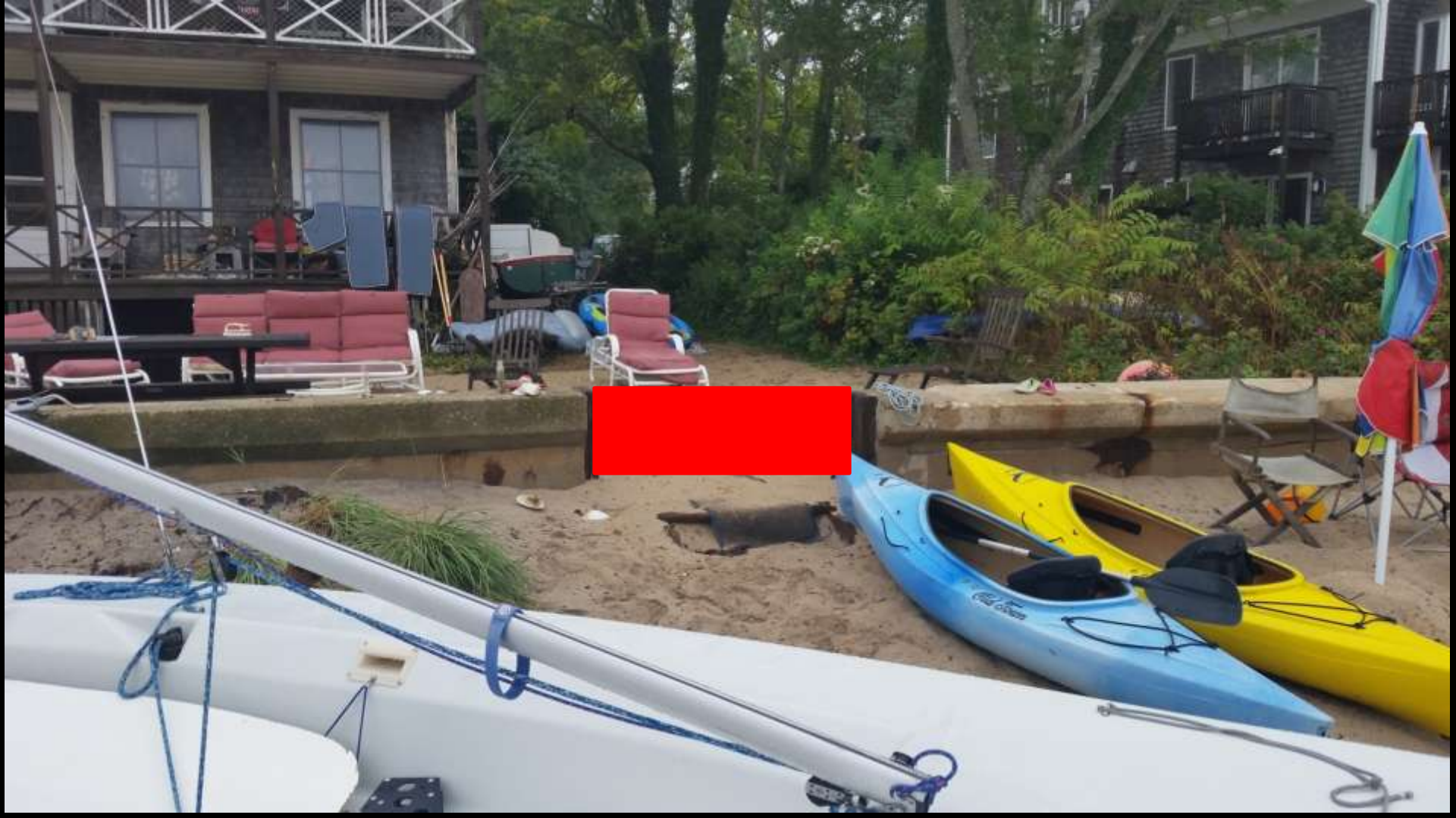

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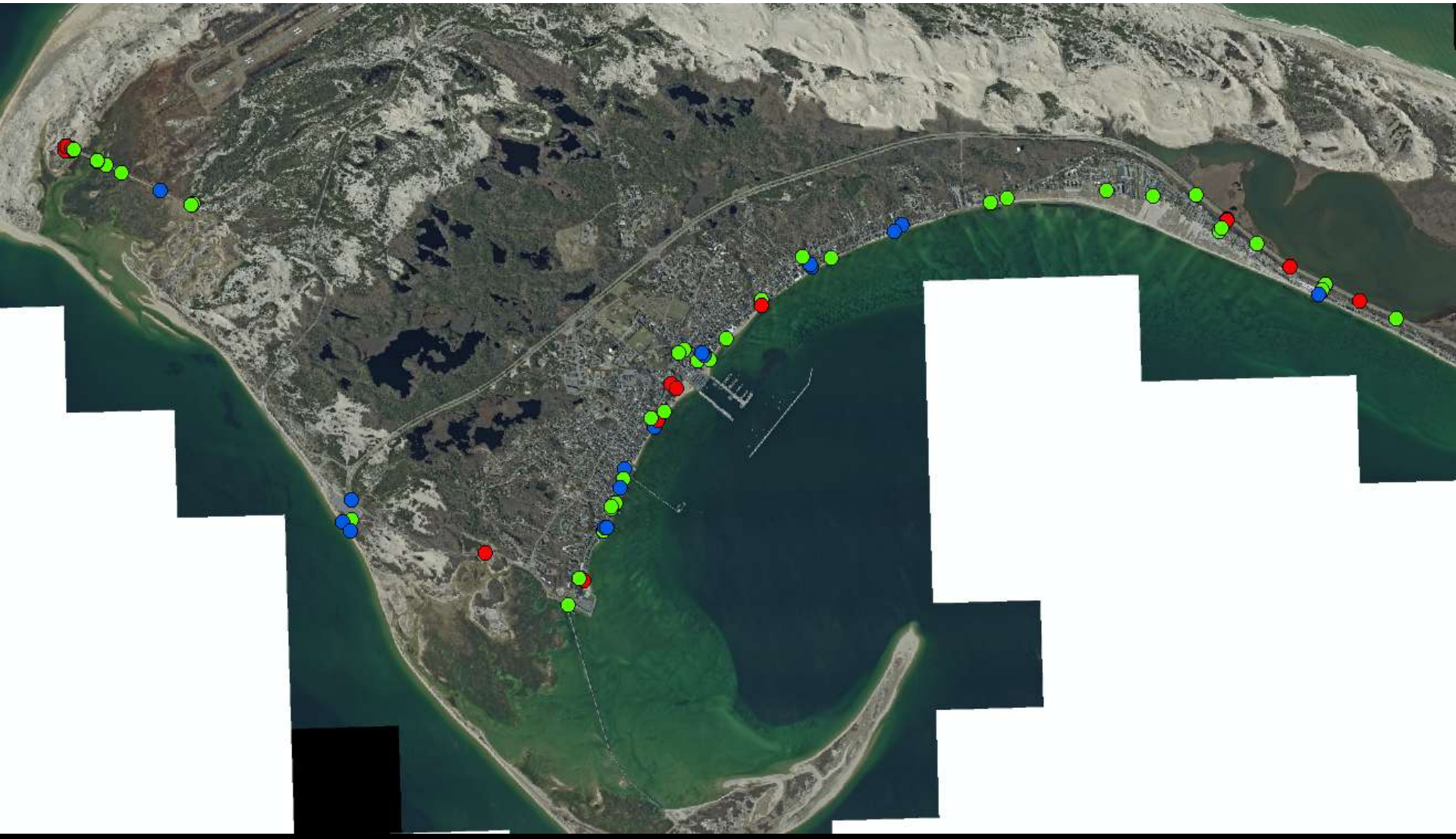
Link those STPs to local tidal datum



Challenges and Lessons Learned

- Dynamic Coastal Settings
- Problems with Visualization
- Area of Inundation Extents
  - Low Relief

Acknowledgements

Graham Giese, Theresa Smith, Pat Hughes

Massachusetts Office of Coastal Zone Management
- Steve McKenna
- Patricia Bowie

Town of Nantucket:
- Dave Fronzuto (Emergency Management & Marine Safety Coordinator)

Town of Provincetown:
- Richard Waldo (DPW Director)
- Rex McKinsey (Harbormaster)

Woodard and Curran
- Mary McCrann
- Greg Pellerin
- Mary House