Incorporating CISA's Infrastructure Resilience Planning Framework into Port Master Planning (Port of Providence, RI)

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IRPF Background

Norfolk, VA

Providence, RI

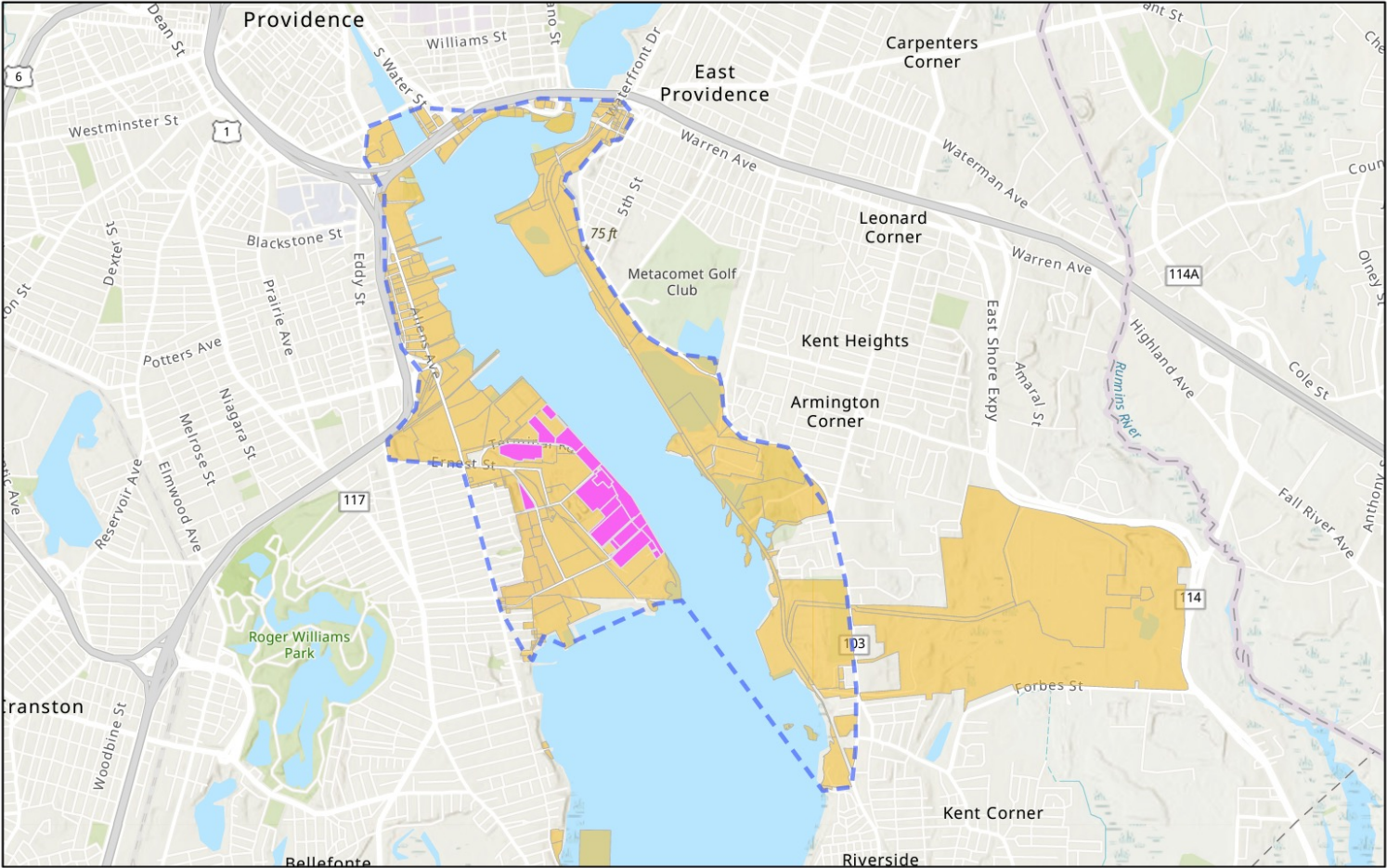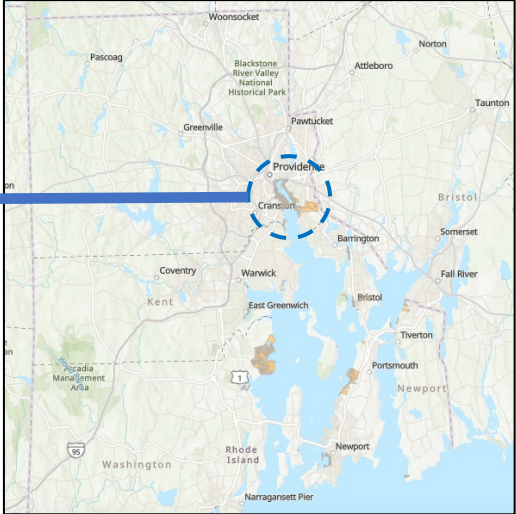Galveston, TX

- IRPF released in Nov. 2022
- Cyber and Infrastructure Security Agency (CISA) collaborated with DHS Center of Excellence for testing and implementation
- ProvPort case study is one of three in progress, along with Norfolk (VA) and Galveston (TX)

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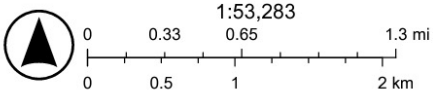
Proposed Study Area

State of Rhode Island

Proposed Study Area

ProvPort Leased Parcels

Ports and Commercial Harbors RIGIS Layer

1:53,283

0   0.33   0.65   1.3 mi

0   0.5   1   2 km

Esri, NASA, NGA, USGS, FEMA, University of Rhode Island, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS,

The University of Rhode Island

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Overall goal for IRPF project

Expand the planning effort to incorporate a wider stakeholder input than traditional port master planning

Document and map the infrastructure systems that have interdependencies with the port and port tenants

Broaden the study area to include properties not directly under ProvPort's jurisdiction along Providence Harbor

Conduct a deep assessment of climate and natural hazard risks by leveraging URI's capacity
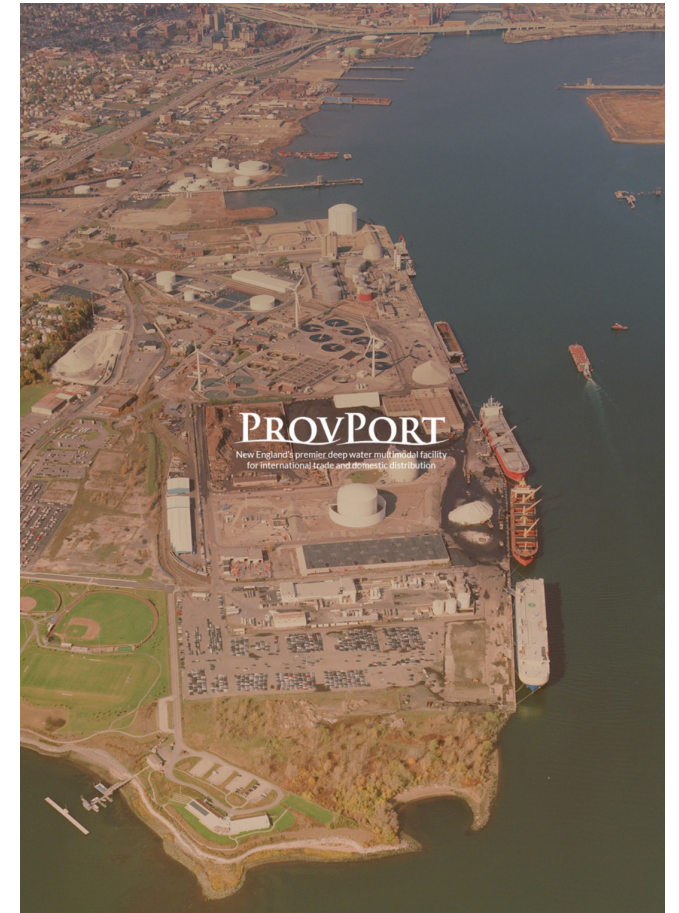
Pilot the IRPF framework in a live exercise and provide a set of lessons learned to the IRPF leads

Overall Goals for ProvPort Master Plan

- Evaluate existing ProvPort infrastructure and recommend capital projects

- Identify target properties in and around the port for port expansion

- Identify community benefits and sustainability projects to be funded

CISA & Port Community Goals for the IRPF Role in the Port Master Plan

Stakeholder engagement includes community and private sector partners

Business risk should be considered for long-term resilience of the community

Discussion with critical infrastructure operators and key businesses

Addition of risk assessment with documented consequences to master plan

U.S. Energy Secretary Jennifer Granholm visiting a fabrication and assembly facility for offshore wind turbines at the Port of Providence, Thursday December 2nd, 2022. (AP Photo/Jennifer McDermott, AP News Online)

The University of Rhode Island

IRPF 5-STEP GUIDANCE WITH TOOLS & RESOURCES

JOINT CONSULTANT + URI LEAD

1 Lay the Foundation - How to form a collaborative planning group, engage infrastructure stakeholders, and review existing information that may be relevant to the planning effort.

URI LEAD

2 Identify Critical Infrastructure – How to identify infrastructure that is critical to the community and identify dependencies among those systems and assets.

3 Assess Risk – Approaches for assessing risk to critical infrastructure that can inform the development and prioritization of mitigation measures.

CONSULTANT LEAD

4 Develop Actions – Guidance on identification of mitigation strategies to address priority infrastructure risks and achieve community resilience goals.

5 Implement & Evaluate – How communities can implement prioritized resilience solutions through existing planning mechanisms, potential funding sources, and technical assistance programs.

Infrastructure Resilience Planning Framework (IRPF)

JULY 2020 | VERSION 1.0

Source: IRPF Fact Sheet, CISA

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Typical Port Master Plan - *Consultant (TBD) Led*

Role of URI

Master Plan Components
1. Executive Summary
2. Goals and Objectives
3. *Community Engagement Plan (IRPF)*
4. Economic, Market, & Financial Analysis
5. Inventory & Existing Conditions
   1. Land use
   2. Other
6. Environmental Assessment
   1. Coastal & climate hazards
   2. Other environmental conditions
7. "Layout Plan"/Operational Plan
8. Design Guidelines
9. Project Identification
10. Financing Options
11. Operational and Land Use objectives for the future port
12. *Infrastructure Interdependencies (IRPF)*

Consultant/URI Joint Leads
How does port interact with communities
What are community interests

URI leads
Inventory of port region
Current land utilization
Land use change since 2009

URI leads
Flood risks
Impact & Consequence analysis
Climate risk

Consultant/URI Joint Leads
Who depends on the port
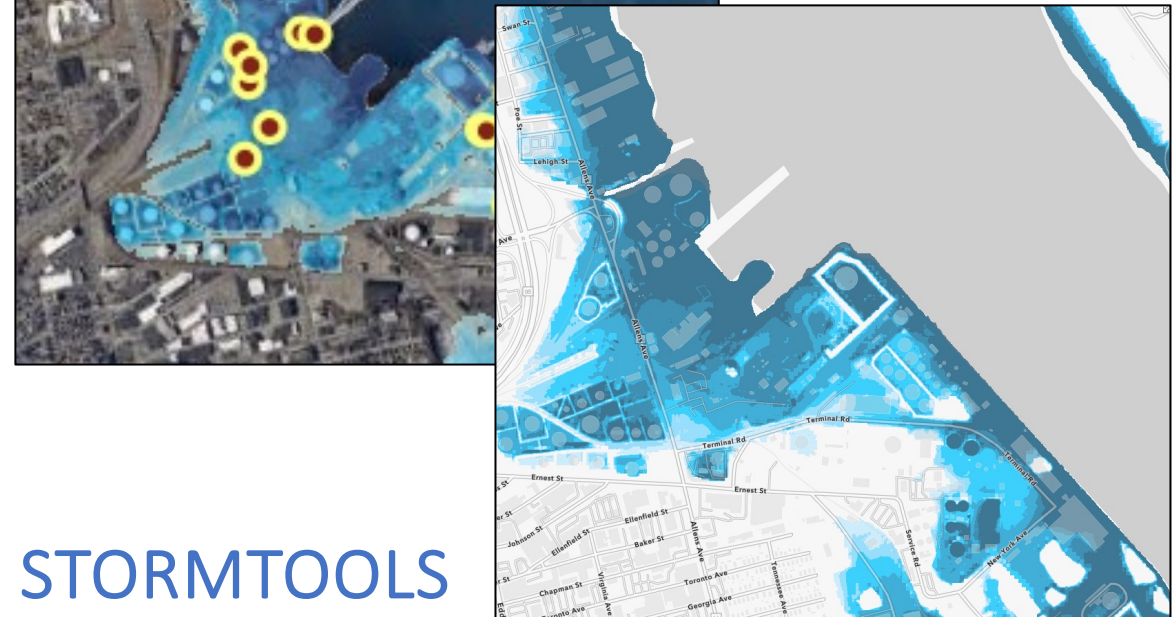What infrastructure port relies upon

Coastal Hazards Output in Risk Assessment

- *Combine existing modeling initiatives*: probabilistic (STORMTOOLS) & deterministic (RI-CHAMP), damage functions (CERI) and qualitative data (RI-CHAMP)

- *Individualized risk assessments* that assess data from ~35 businesses in the study area with report capabilities
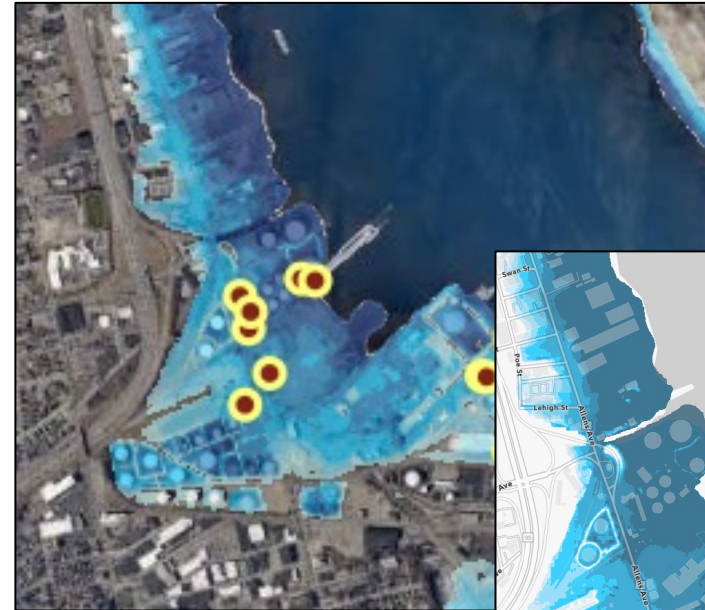
RI-CHAMP

STORMTOOLS

Baseline Stakeholder Engagement in the Port Master Plan

- 4 community meetings in Wards 10 and 11, plus public hearing at end (City)
- Community Engagement Plan (IRPF)
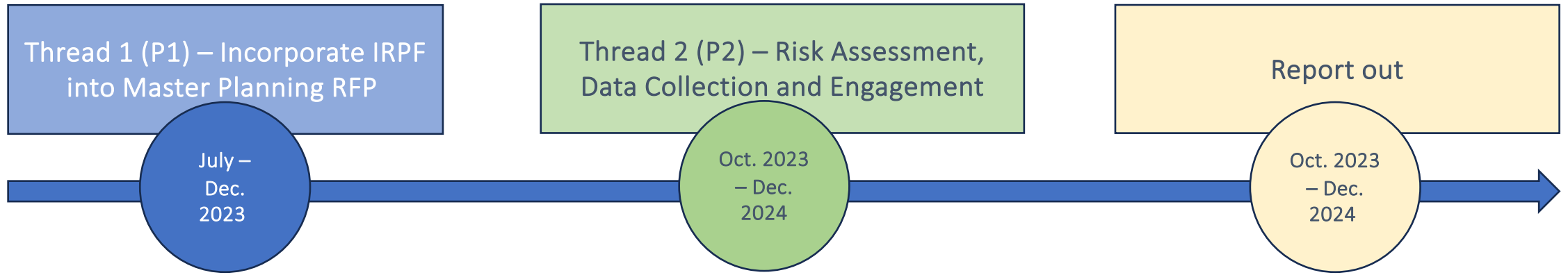- Stakeholder Mapping

(Community workshop in PVD Ward, City of Providence)

(Stakeholder Meeting of the Providence Pilot Project, EPA 2019)

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Thread 1 (P1) – Incorporate IRPF into Master Planning RFP

July – Dec. 2023

Thread 2 (P2) – Risk Assessment, Data Collection and Engagement

Oct. 2023 – Dec. 2024

Report out

Oct. 2023 – Dec. 2024

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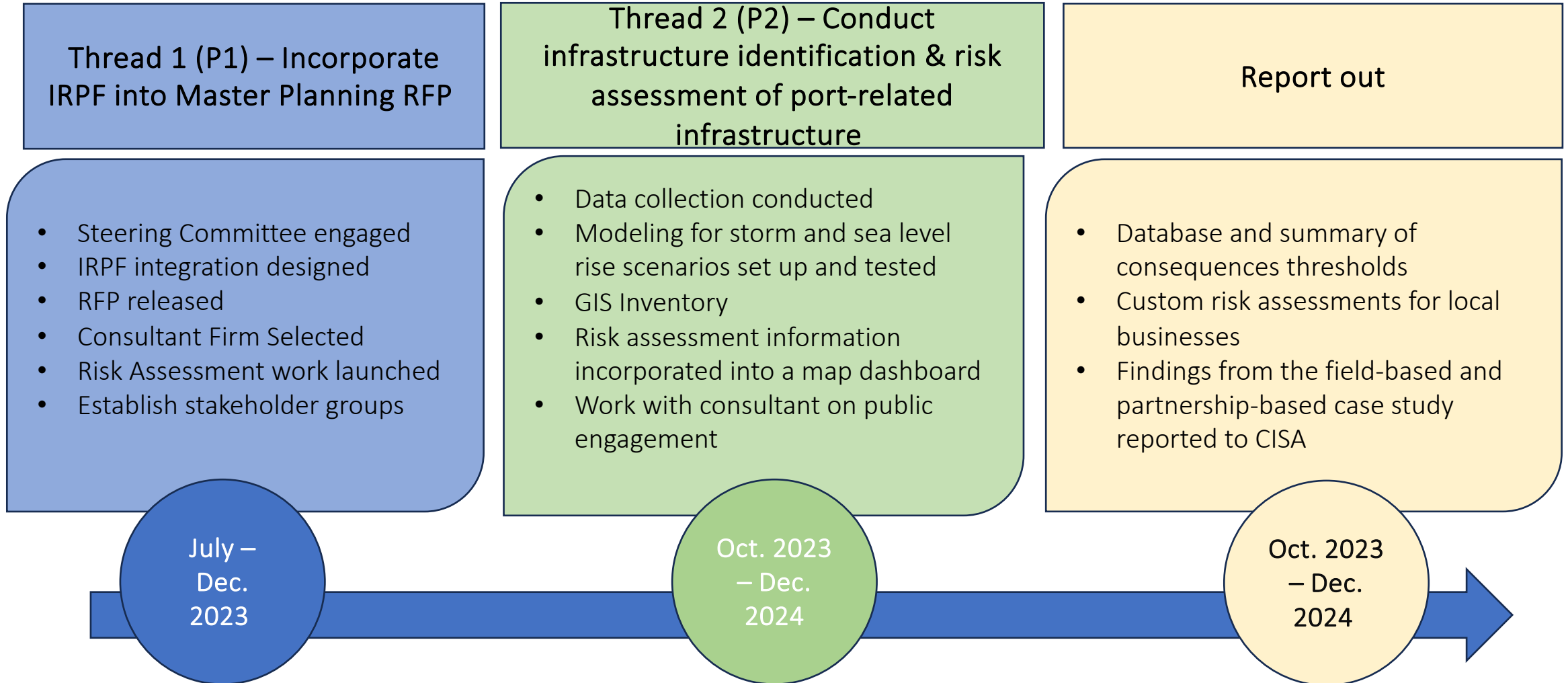
Thank you.

Inventory, Land Utilization, and Land Use Change

Ports & Commercial Harbors Dataset

- Reflects 2004-2008 conditions; update now underway

- Dataset includes:
  - Parcel identifiers
  - Zoning
  - Usages (e.g., marine commercial & industrial)
  - Purposes (e.g., liquid cargo)
  - Quantities (e.g., number of piers, wharves, drydocks, berthing)
  - 70+ characteristics included

Project Timeline

Thread 1 (P1) – Incorporate IRPF into Master Planning RFP

- Steering Committee engaged
- IRPF integration designed
- RFP released
- Consultant Firm Selected
- Risk Assessment work launched
- Establish stakeholder groups

July – Dec. 2023

Thread 2 (P2) – Conduct infrastructure identification & risk assessment of port-related infrastructure

- Data collection conducted
- Modeling for storm and sea level rise scenarios set up and tested
- GIS Inventory
- Risk assessment information incorporated into a map dashboard
- Work with consultant on public engagement

Oct. 2023 – Dec. 2024

Report out

- Database and summary of consequences thresholds
- Custom risk assessments for local businesses
- Findings from the field-based and partnership-based case study reported to CISA

Oct. 2023 – Dec. 2024

URI also leading a team assessing the integration of the CISA IRPF framework for three case study locations: Norfolk VA, Galveston TX, Providence RI. *January 2024 – September 2026.*