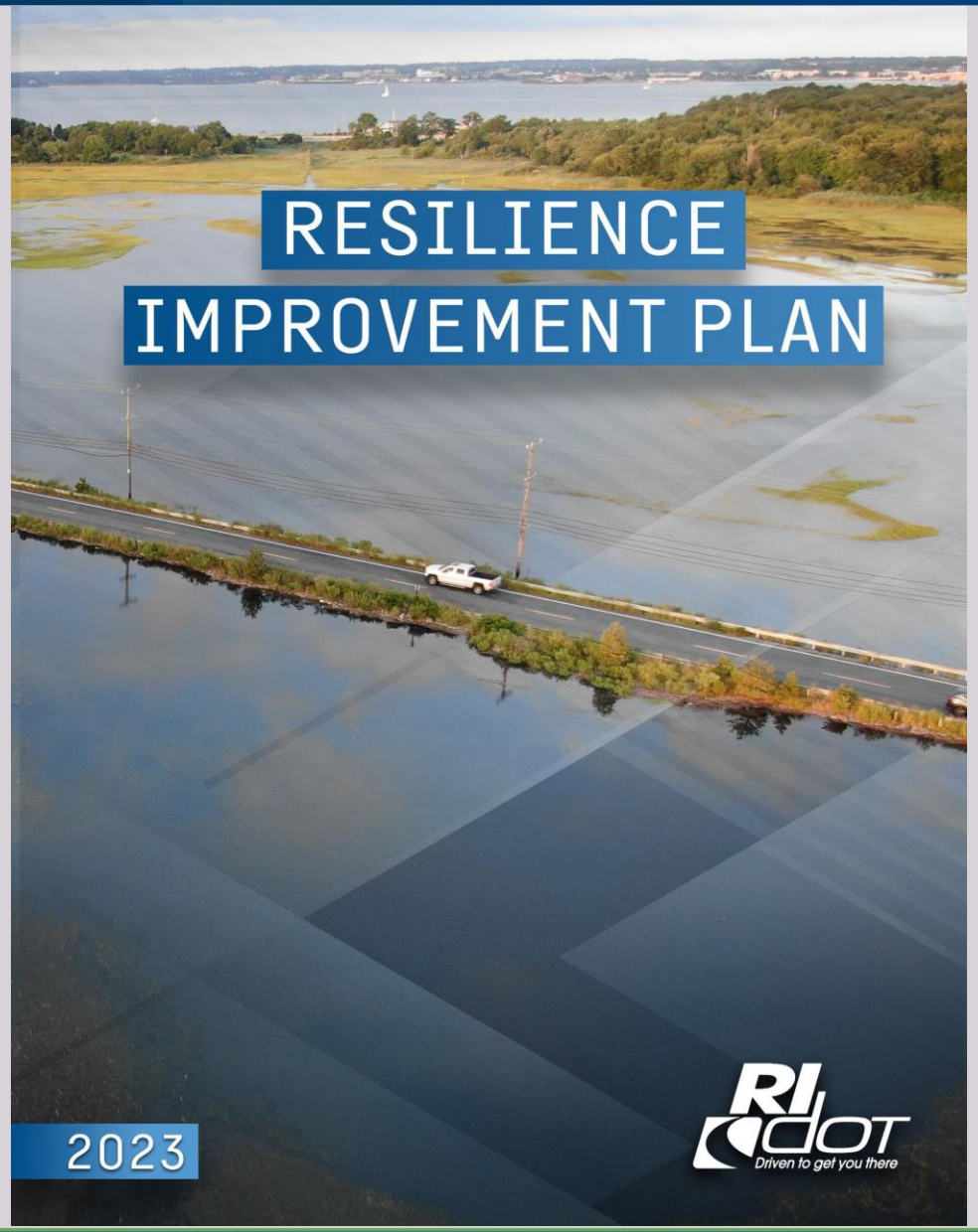
RIDOT Resilience Improvement Plan

Executive Climate Change Coordinating Council (EC4)

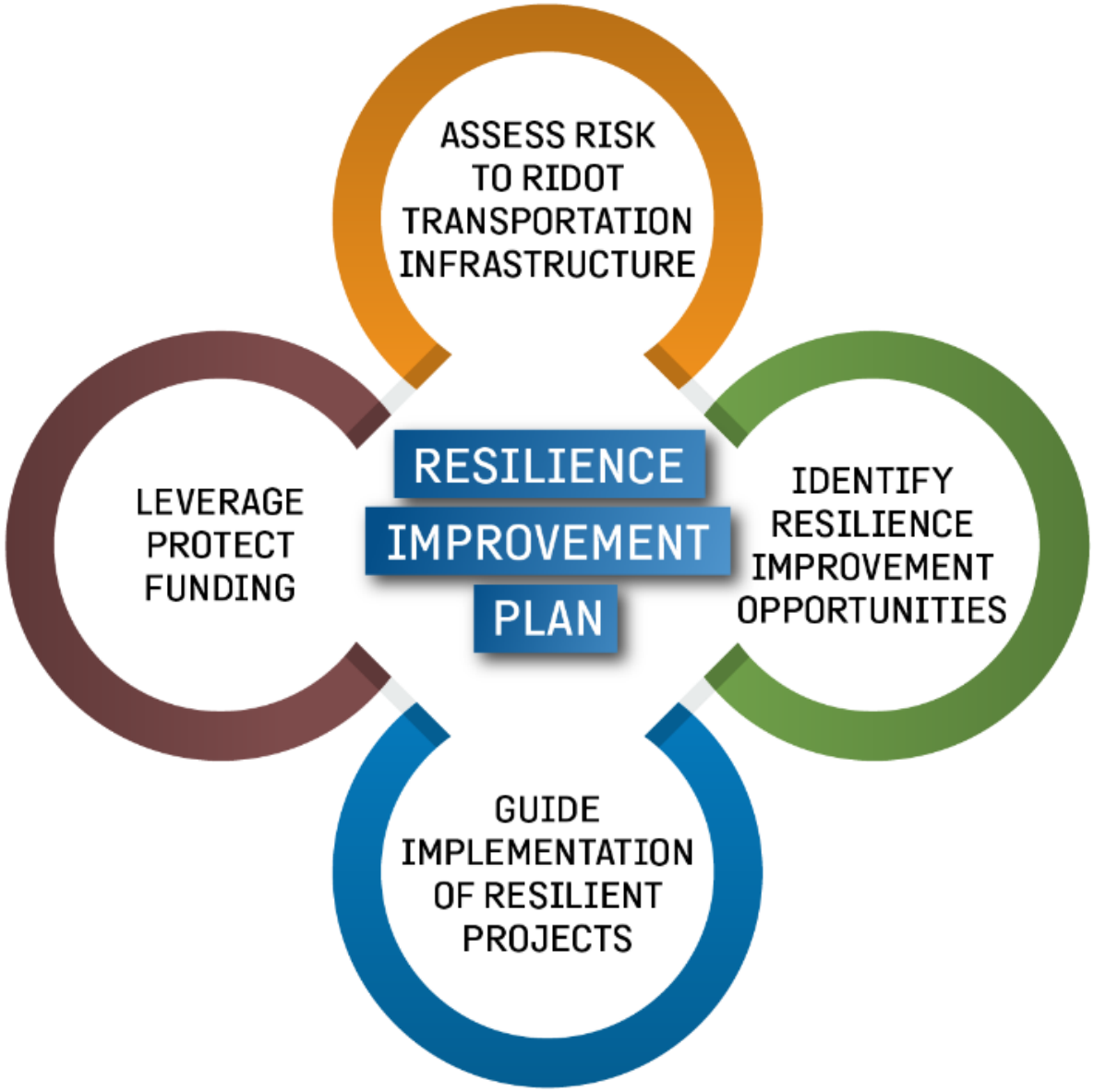


Introduction

- Purpose and Vision
- Definition of Resilience
- Alignment of RIP with other Plans
- Resilience Framework
- Methodology Overview
- Criticality Framework
- Risk-Base Vulnerability Assessment
- Stakeholder Engagement Plan
- Overall Progress and Next Steps

Purpose and Vision

- Support RIDOT mission and vision
- Build on previous studies, existing data and processes
- Coordinate with other plans



RESILIENCE DEFINITION

The ability of the Rhode Island transportation system to anticipate, prepare for, and adapt to changing conditions; and withstand, respond to, and recover rapidly from any disruptions.

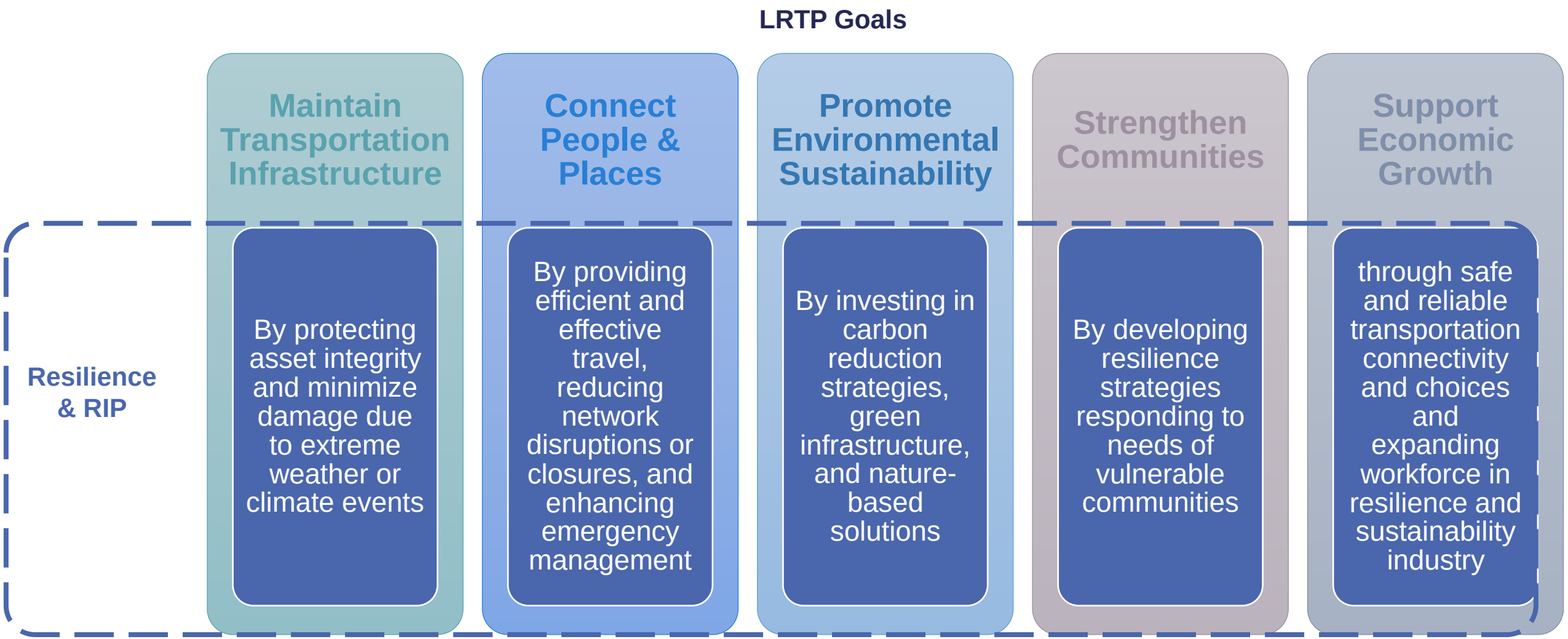
SUPPORTS RIDOT MISSION:

Designs, constructs, and maintains the state's surface transportation system

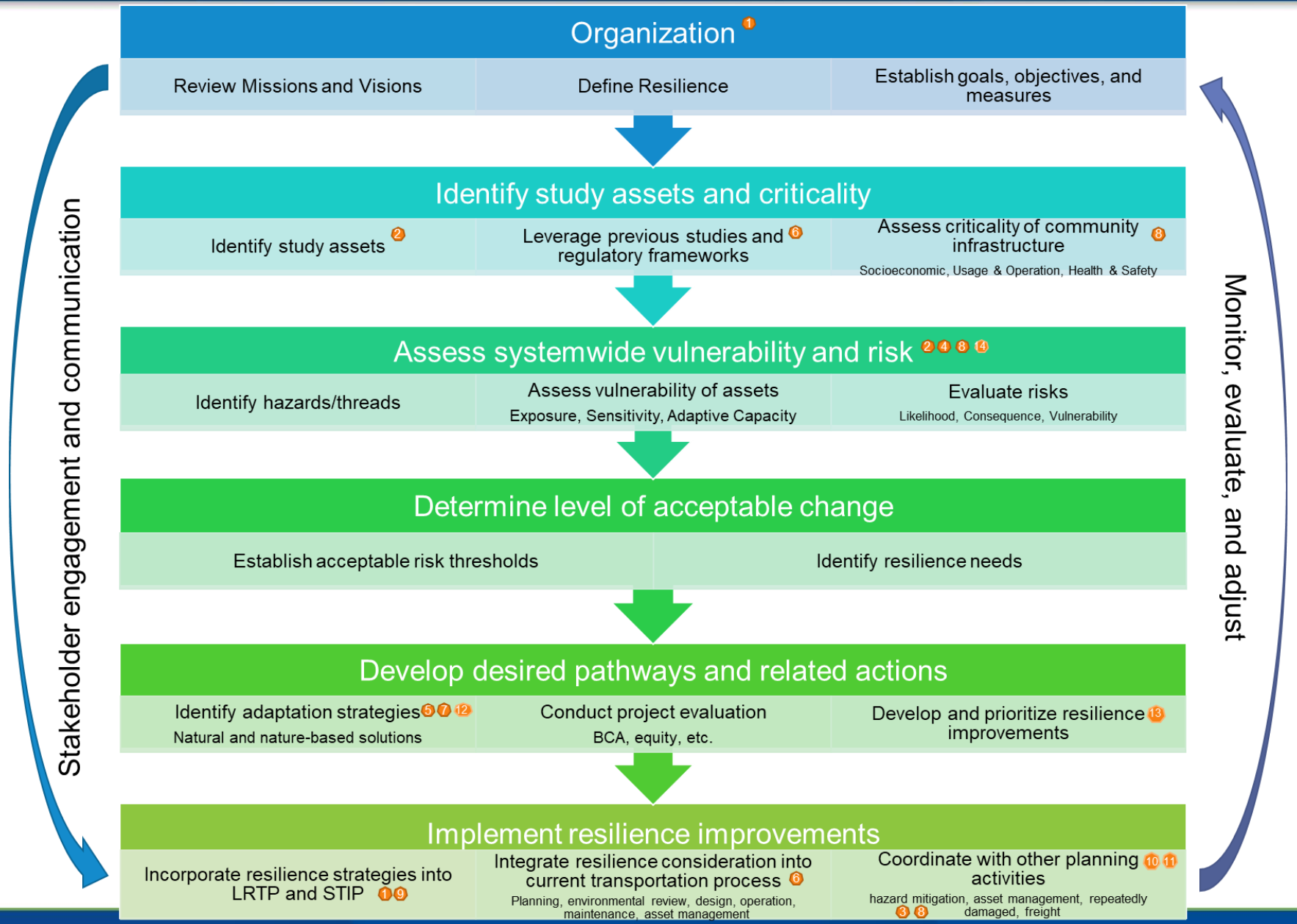
ALIGNS WITH RIDOT VISION:

Create a multimodal transportation network that connects people, places, and goods in a safe and resilient manner by providing effective and affordable transportation choices that are supportive of healthy communities, provide access to jobs and services, and promote a sustainable and competitive Rhode Island economy

Alignment - Supports RIDOT LRTP Goals



Resilience Framework



PROTECT - Resilience Improvement Plan	
The Plan Shall..	
1	Encompass immediate and long-range planning activities and resilience investments
2	Demonstrate a system-wide approach to transportation system resilience
3	Consistent with and complement State and local hazard mitigation plans
4	Include a risk-based assessment of vulnerability to current and future weather events and natural disasters
Shall, as appropriate..	
5	Describe ways to improve response to impacts and changes
6	Describe the codes, standards, and regulatory framework to ensure improvements
7	Consider benefit of natural Infrastructure
8	Assess community infrastructure resilience
9	Use a long-term planning period
May also..	
10	Designate evacuation routes and strategies
11	Plan for response to anticipated emergencies
12	Describe the resilience improvement policies
13	Include investment plan & priority projects
14	Use science and data

Methodology Overview - Study Assets

- Roads (1,930 miles)
- Shared use paths (395 miles)
- Bridges (1,358)
- Drainage pipelines (34,480)
- Sidewalks (422 miles)
- Stormwater treatment units (1,942)

Methodology Overview – Hazards and Horizons

Hazards

- Inland Flooding
- Storm Surge
- Sea Level Rise

Horizons:

- 2035
- 2050
- 2100

Consult Hazard Mitigation Plan

Focus on High Priority Hazards This Round

Methodology Overview – Analysis Approach

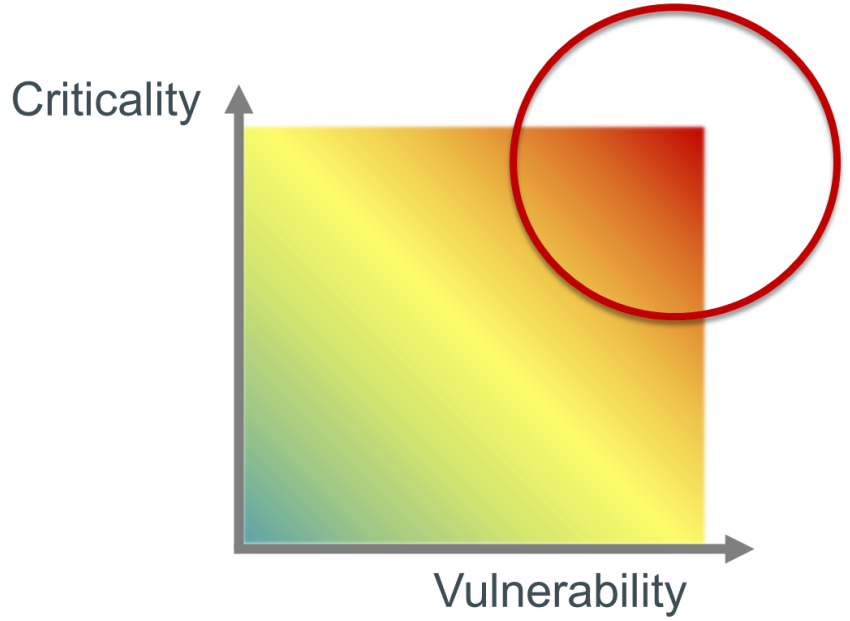
Resilience Improvement Plan Analysis

Criticality Assessment

The degree to which a given asset is important to the unimpeded operation of the transportation system in Rhode Island

Risk-Base Vulnerability Assessment

The degree to which a system is susceptible to, or unable to cope with adverse effects of climate change or extreme weather events



Methodology Overview - Criticality Framework

Criticality Score = Usage and Operational Score + Socioeconomic Score + Health and Safety Score

Usage and Operational Importance

- Evacuation Routes / Lifelines (2)
- Functional Class (2)
- AADT (2)
- Freight Network (2)
- Northeast Corridor (1)
- Broadband Network (1)

Socioeconomic Importance

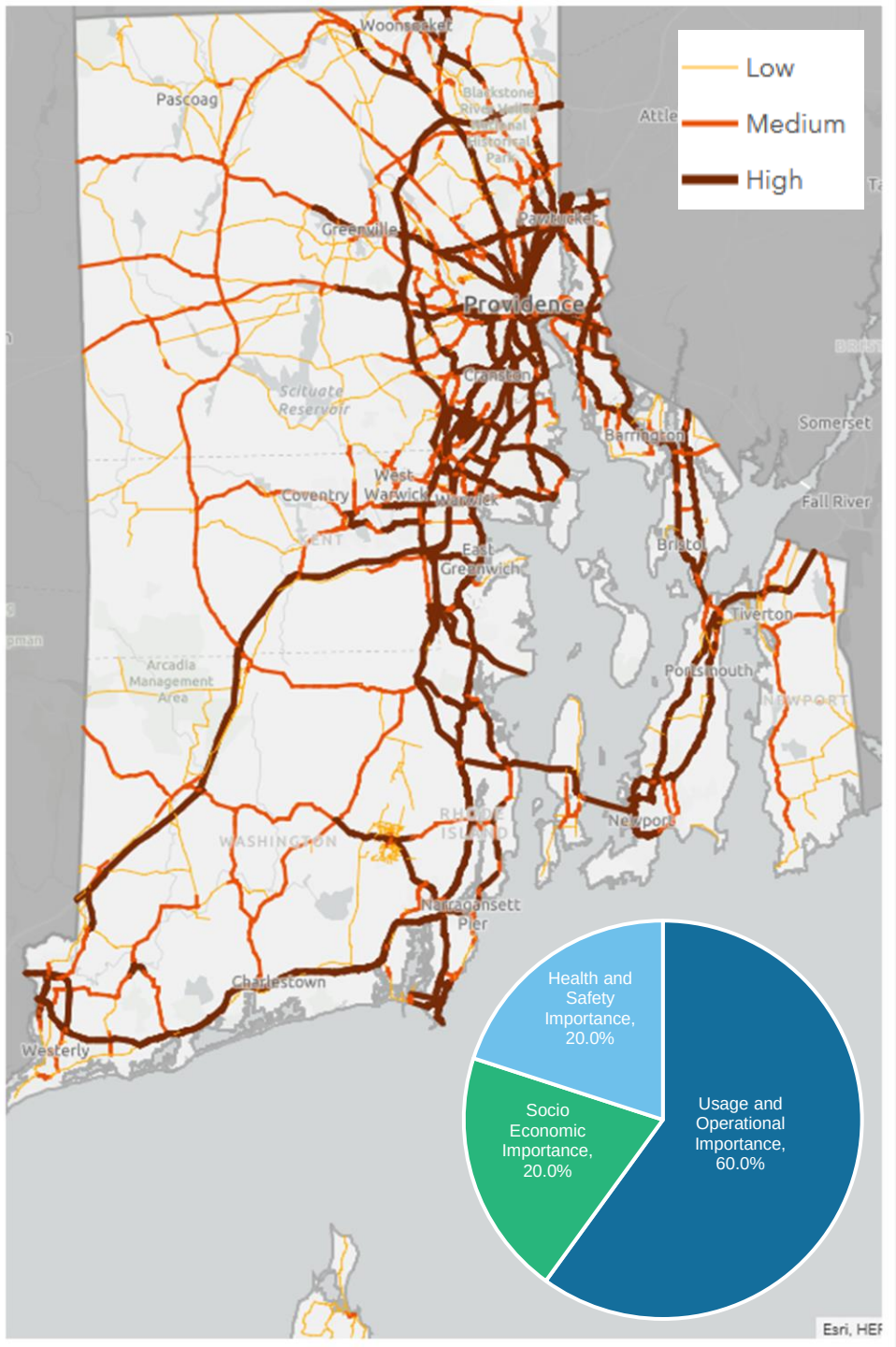
- Equity Areas (4)
- Population Density (3)
- Employment Density (3)

Health and Safety Importance

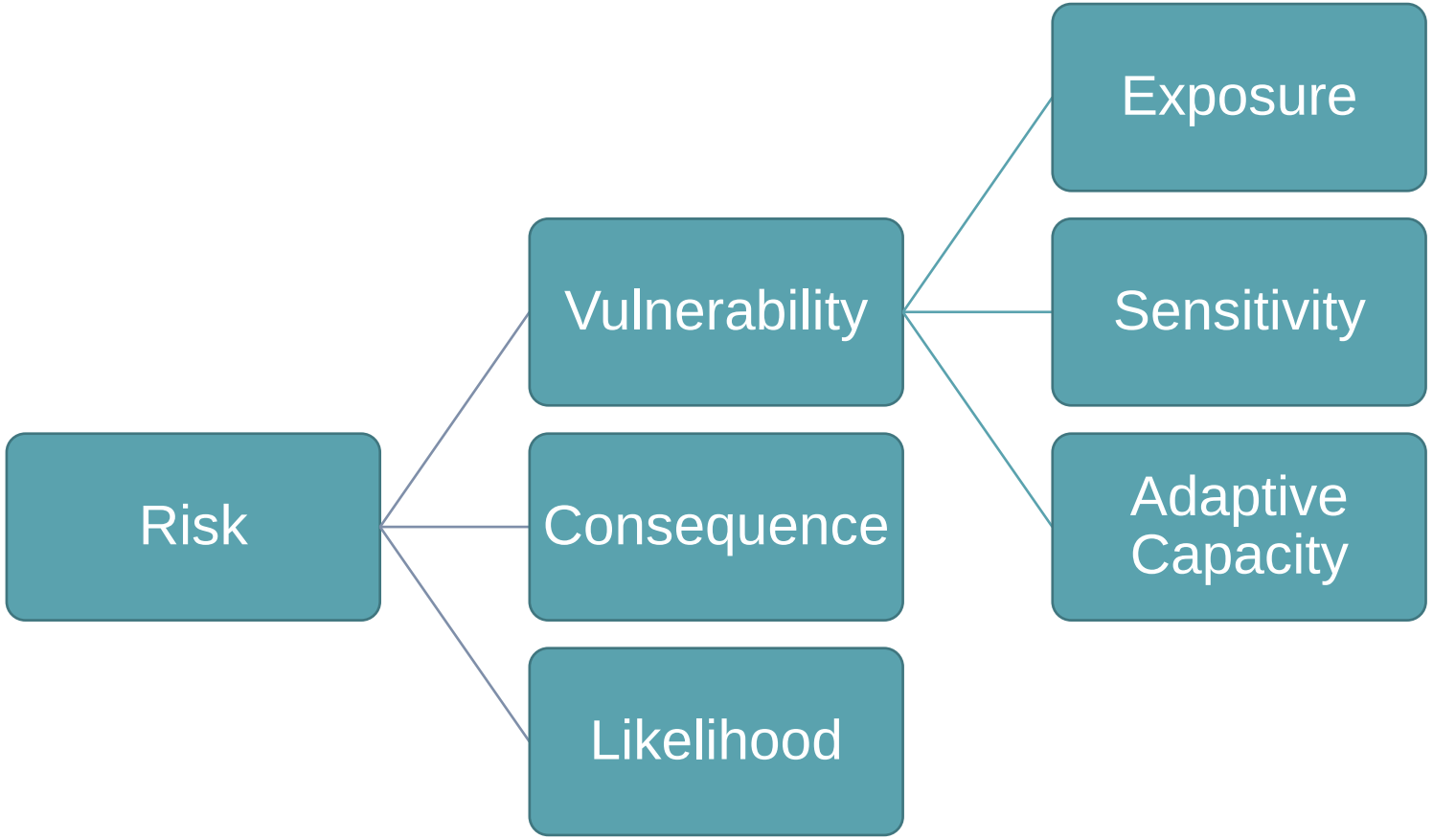
- Access to Dam (1)
- Access to Fire or Police Stations (1)
- Access to Hospitals (1)
- Access to Schools (1)
- Access to Emergency Shelters (1)
- Access to Power plants (1)
- Access to Transit Centers (1)
- Access to Airport (1)
- Access to Seaports (1)
- Access to Maintenance Facilities(1)
- Access to Military Installations(1)

Criticality Assessment - Preliminary Results

- Tested three weighting options
- Selected as it best highlights the assets that are most important to the operation of RIDOT transportation system, including providing accessibility and mobility to underserve communities
- Refined based on inputs from stakeholder workshop and public meetings



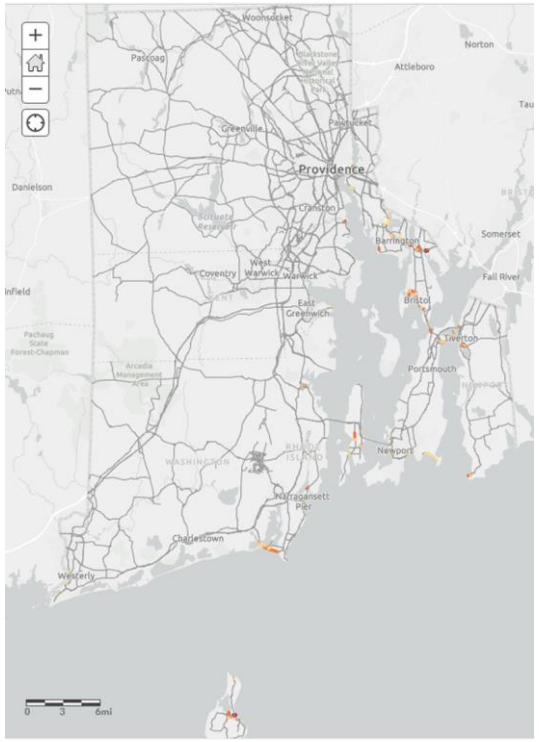
Risk-Based Vulnerability Assessment



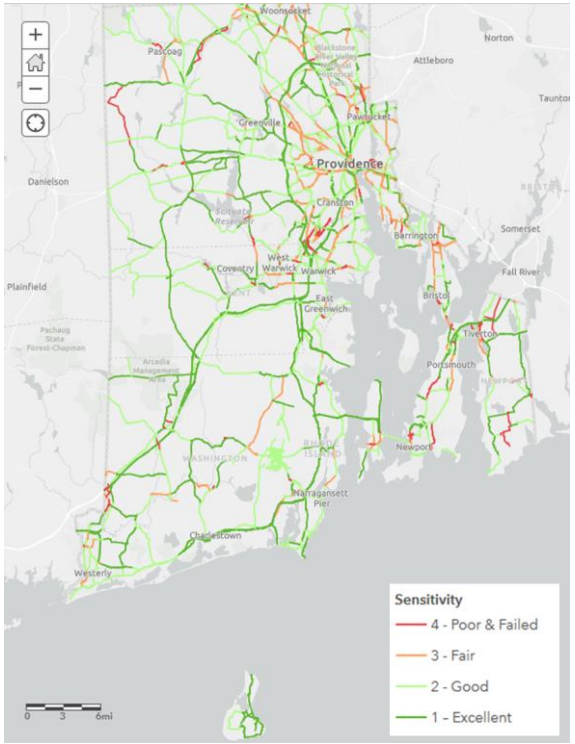
FHWA VAST Tool

Preliminary Results

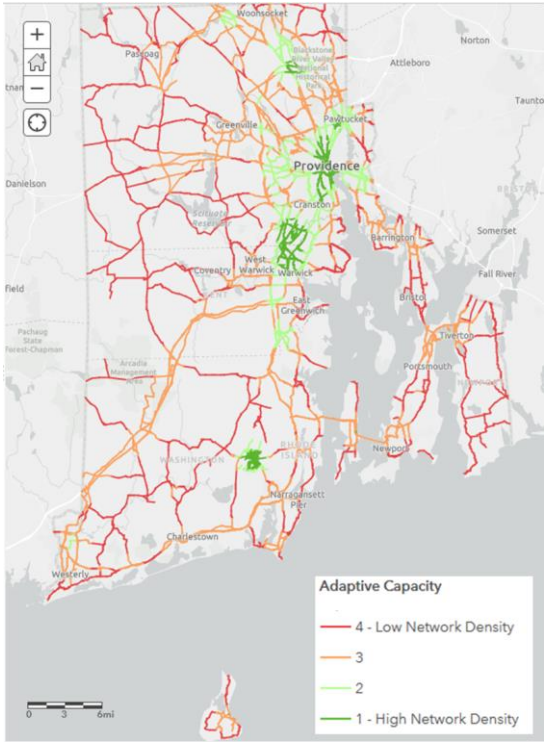
Exposure – Sea Level Rise Inundation



Sensitivity – Pavement Condition



Adaptive Capacity - Network Density



Stakeholder Engagement

FHWA Division Coordination

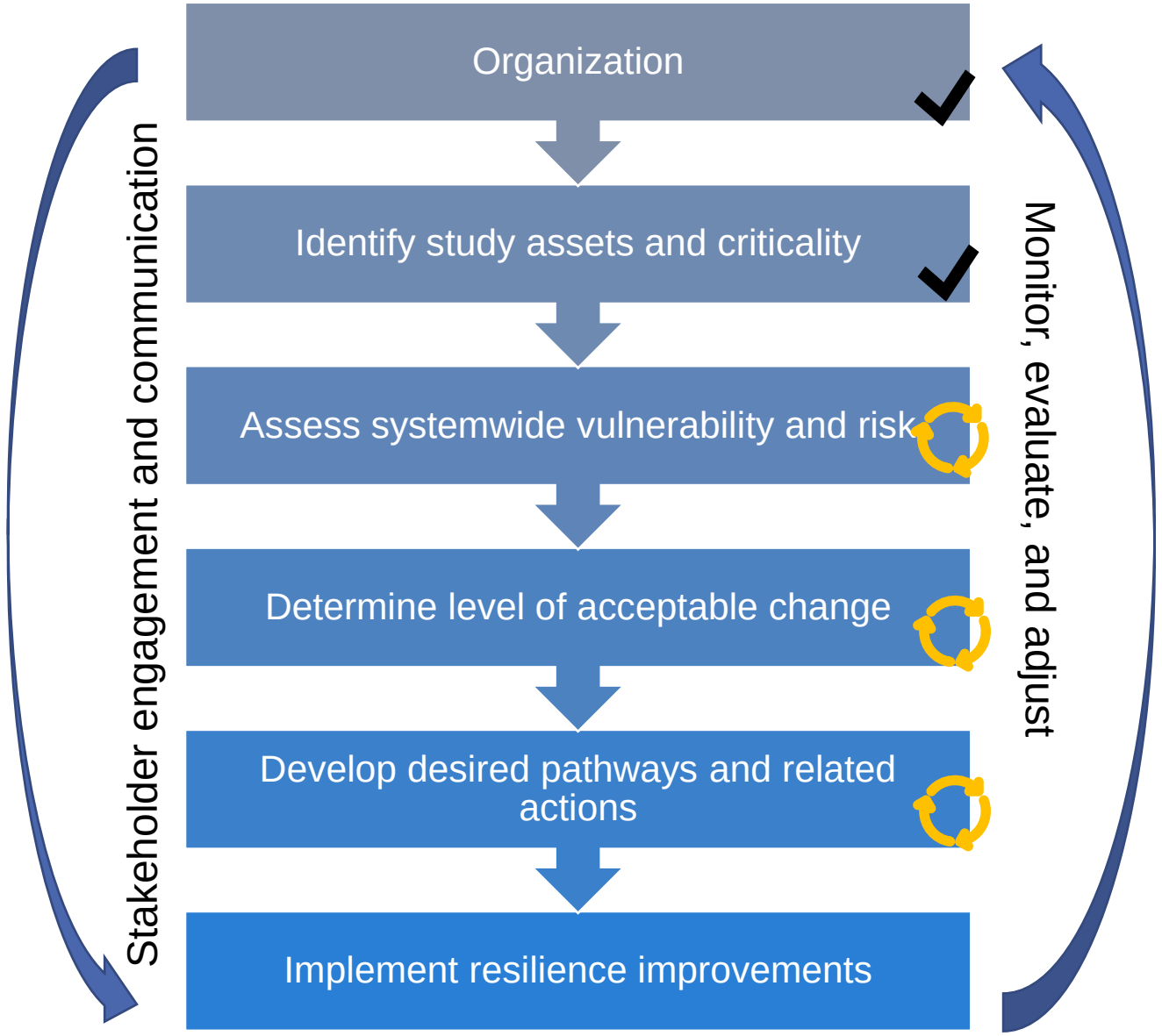
Stakeholder Workshops

Public meetings

- TAC
- EC4
- State Planning Council

Overall Progress and Next Steps

- Complete vulnerability and risk analysis
- Develop resilience strategies
- Create framework for integration
  - Project Development
  - Coordination with other planning activities
  - Current Practices and Functions



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Driven to get you there