ROCKINGHAM PLANNING COMMISSION

Empowering Communities

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Seacoast Transportation Corridor Vulnerability Assessment

Corridor Advisory Committee

March 13, 2020

Seacoast Transportation Corridor Vulnerability Assessment (STCVA)

- A partnership between:
  - Rockingham Planning Commission
  - NH DES Coastal Program
  - NH Department of Transportation
  - University of New Hampshire
  - 10 NH coastal municipalities
- Funded as a 2019 NOAA Project of Special Merit

This project was funded,in part, by NOAA's Office for Coastal Management under the Coastal Zone Management Act in conjunction with the New Hampshire Department of Environmental Services Coastal Program.

Seacoast Transportation Corridor Vulnerability Assessment (STCVA)

- Project timeline and tasks (refer to handout)
- Corridor Advisory Committee (CAC) charge and role
- Overview of Project deliverables

- RPC Transportation planning process

Seacoast Transportation Corridor Vulnerability Assessment (STCVA)

- Project goals are to:
  - Assess the impacts of projected sea-level rise on the seacoast transportation network
    - 1.0', 1.7', 4.0' and 6.3' at 2050

      (Tides to Storms and consistent with 2020 NH Science Summary)
    - Project area from Route 1A to I-95 west to include major local connector roads
  - Evaluate changes in traffic volume, travel patterns, road capacity, road conditions using travel demand model
  - Identify priority sites in the network impacted by flooding
  - Identify adaptation and resilience strategies for priority sites
  - Improve RPC/MPO decision making processes

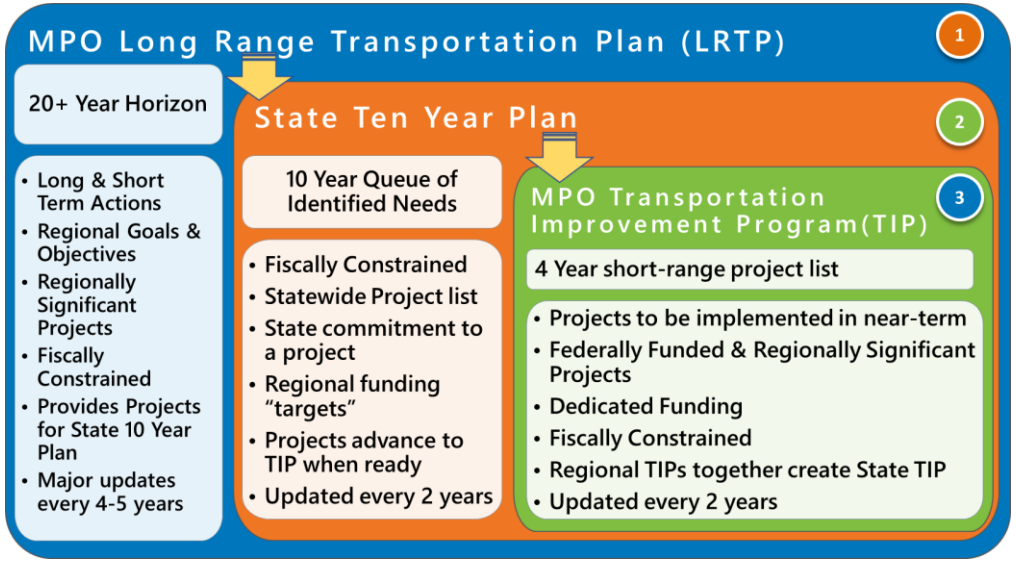
Seacoast Transportation Corridor Vulnerability Assessment (STCVA)

- Capitalize on municipal expertise and experiences
- Understand NHDOT and municipal roadway network management, policies and planning
- Inform state and local hazard mitigation planning efforts
- Inform coastal region climate adaptation and resilience planning

Transportation Planning Approach

MPO Core Functions

- Establish a Continuing, Cooperative, and Comprehensive (3Cs) transportation planning process
  - Prepare a Long Range Transportation Plan (LRTP) with a 20+ Year horizon
  - Develop a short-range Transportation Improvement Program (TIP) with a 4 year horizon
  - Identify and monitor system Performance targets



- Provide a FORUM to address issues that transcend municipal boundaries
- Serve as a RESOURCE to provide technical planning assistance to communities and facilitate regional coordination
- A VOICE for informing the legislature and state and federal agencies about the region's needs and priorities

Importance of Resiliency Planning

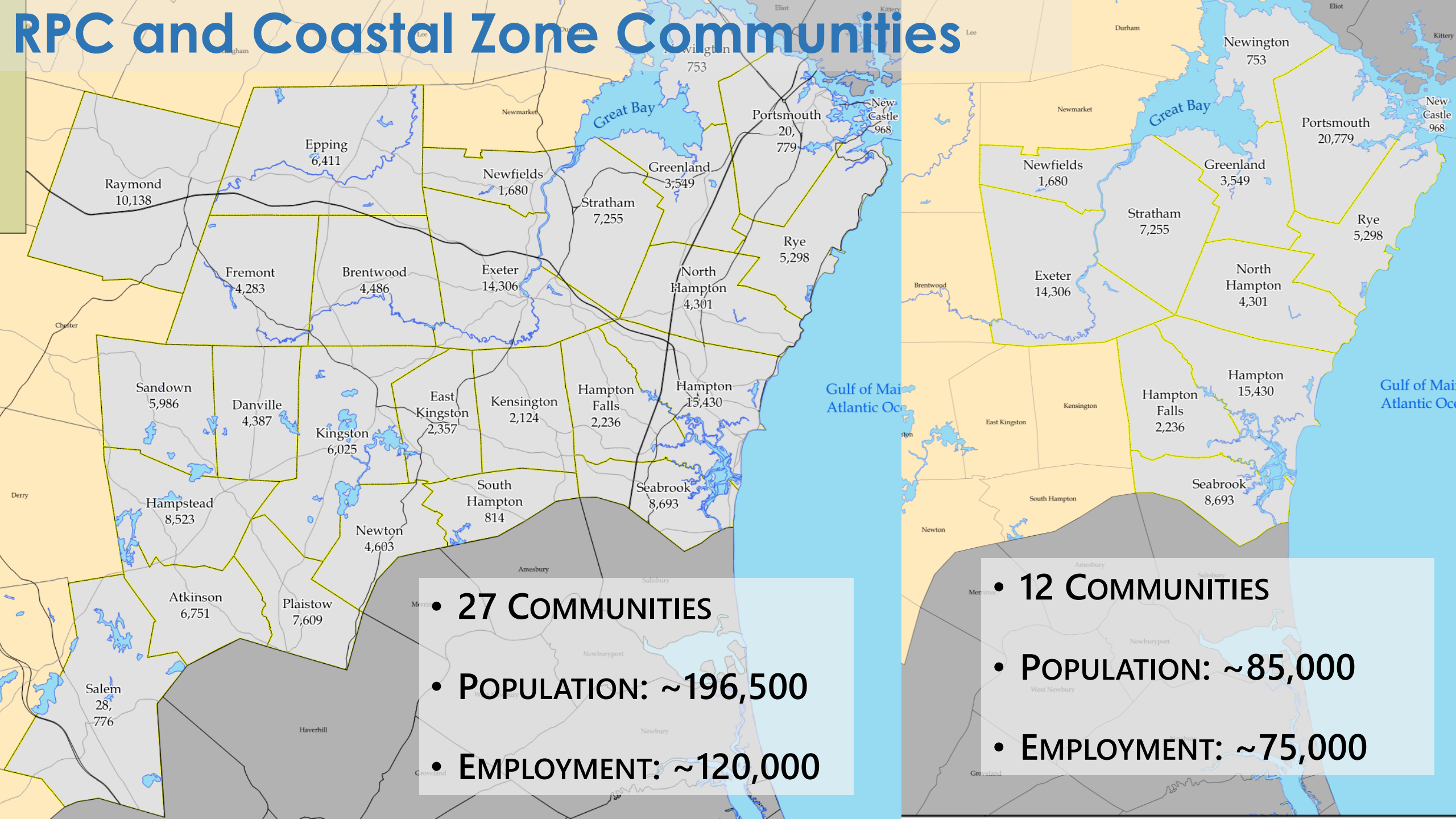
MPO's purpose is to plan for the long-term needs of the regional transportation system

- Provides the means for people to access social, economic, and environmentally valuable/desired locations
- Current science indicates that planners need to account for sea level rise to maintain access to those locations in coastal NH

Planning a Resilient Transportation System helps to

- Reduce the likelihood of systemic disruptions to functionality
- Increase the capacity to absorb these disruptions and still function
- Ensure that all have the ability to access the transportation system during disruptions
- Reduce the time that is needed to return to normal functioning

RPC and Coastal Zone Communities



- 27 Communities
- Population: ~196,500
- Employment: ~120,000

- 12 Communities
- Population: ~85,000
- Employment: ~75,000

STCVA Transportation Planning Outcomes

- Enhanced understanding of risks to transportation network from climate change
- Identify critical links and impacts of closures on the rest of the transportation network
- Develop improvement concepts and costs to better understand scope and scale of building a more resilient system
- Improve use of resiliency factors in the project selection process
- Provide data and analysis for other planning and project development efforts.
- Define policies that can facilitate a more resilient transportation system

Integrating STCVA & Resiliency into Transportation Planning

- LRTP
  - Fully incorporate into goals and objectives
  - Develop focused performance metrics
  - Identify long-term project needs
  - Better understand investment options

- TIP/Ten Year Plan
  - Better define project selection criteria
  - Enhance MPO data and decision-support tools
  - Information to feed into project development efforts

23 CFR 450.306(b)

"consideration and implementation of projects, strategies, and services that will address the following factors: . . . (9) Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation."

23 CFR 450.324(f)(7)

"Assessment of capital investment and other strategies to preserve the existing and projected future metropolitan transportation infrastructure, provide for multimodal capacity increases based on regional priorities and needs, and reduce the vulnerability of the existing transportation infrastructure to natural disasters."

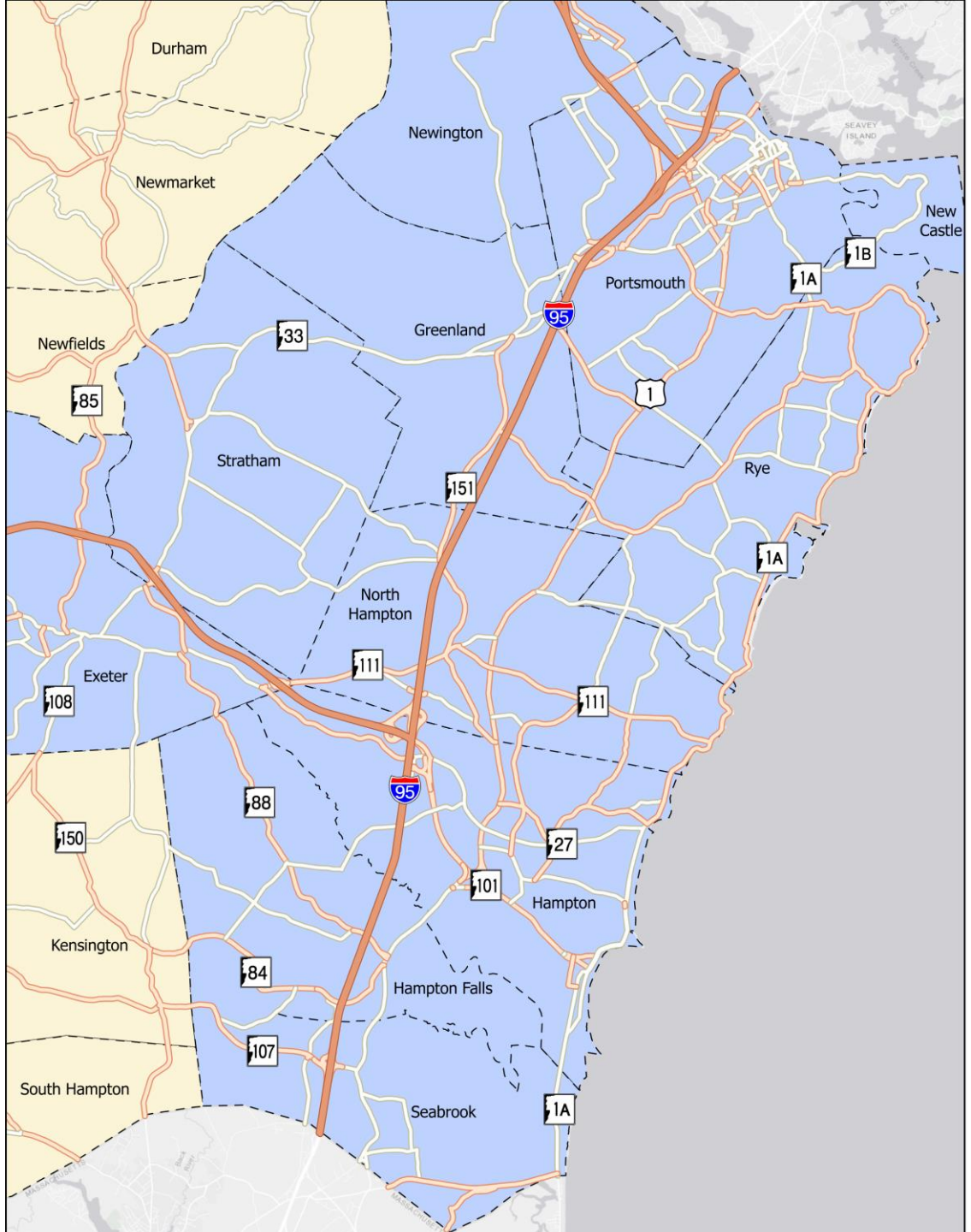
Addressing STCVA Goals

- Assess the impacts of projected sea-level rise on the seacoast transportation network (model)
- Evaluate changes in traffic volume, travel patterns, road capacity, road conditions using travel demand model (model)
- Identify priority sites in the network impacted by flooding (model & project team and partners)
- Identify adaptation and resilience strategies for priority sites (project team and partners)
- Improve RPC/MPO decision making processes (project selection criteria and performance metrics)

Regional Travel Demand Model

- Demographic data – employment, population
- Uses demographic projections aggregated into zones to estimate future travel in the region.
- Model attempts to find most efficient path for all trips between zones.
- Many, but not all, roads are included
- Focusing on impacts on coastal corridors

Regional Travel Demand Model



STCVA Goals - Regional Travel Demand Model

- Overlaying sea-level rise projections and determining what model links and nodes are impacted
- Attempting to understand how the system operates with the traffic capacity of effected links being extremely low or eliminated
- Conducting Select Link Analysis to understand origin and destination of each trip through impacted links
- Conducting Select Zone Analysis to understand the origin and destination of trips between zones
- Other analyses based on usefulness

STCVA Goals – Adaptation and Resilience Strategies

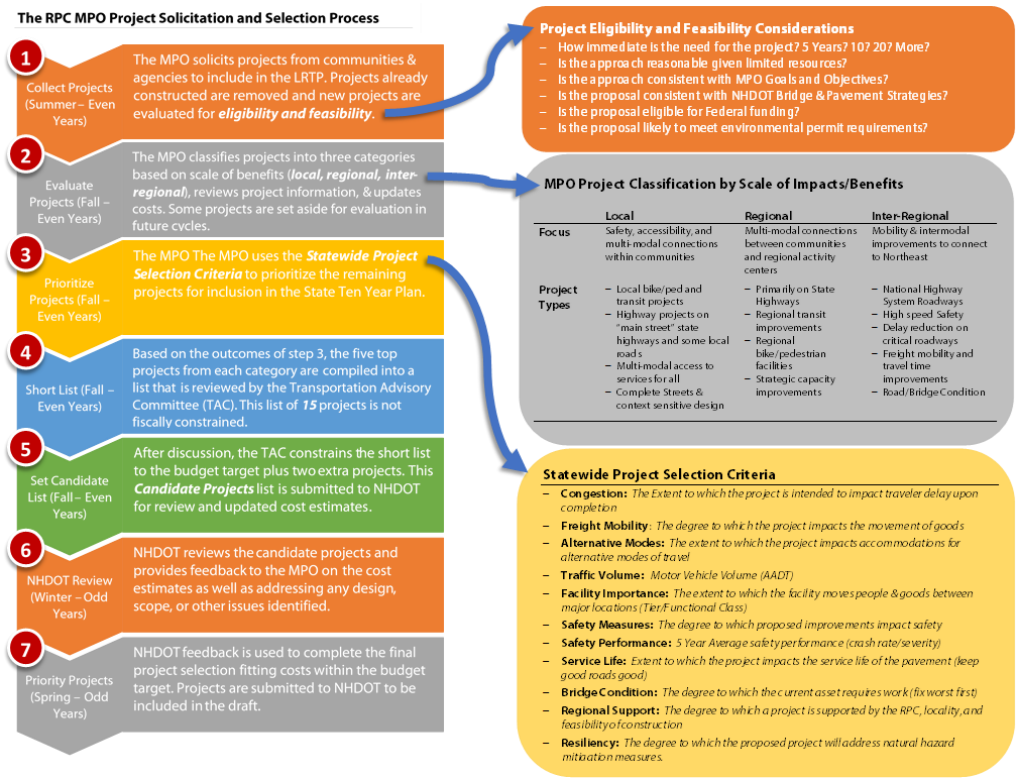
- Travel demand model can help identify priority locations
- Identifying strategies will be a collaborative effort with all project team and study partners
- Can utilize Federal Highway Administration frameworks to help organize and categorize options.
- Adaptation and Resilience – protect, accommodate, retreat, avoid

STCVA Goals - RPC/MPO Decision Making Process

- **Modify Project Selection Criteria to better incorporate resiliency planning**
  - Facility Importance is already included but needs to be better defined
  - Need to better address exposure to risk
  - Address proposed impacts of project

"The degree to which the proposed project will address natural hazard mitigation measures"

- **Develop Performance Metrics to track progress towards regional goals**
  - Pavement & Bridge Condition (State Highways)
  - Highway Safety
  - Travel Time Reliability (State Highways)
  - Need to track change in exposure to risk
  - Other metrics?



For More Information

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