

## Recommendations – Prioritization of Resilience Investments

Prioritizing how and where to spend transportation funding is an important consideration for UCTC as it integrates the results of the vulnerability assessment into its planning and decision-making processes. Even before the Bipartisan Infrastructure Law (BIL) was passed, the FAST Act required state and metropolitan transportation planning agencies to include resilience as a planning factor. Metropolitan transportation plans needed to include an assessment of capital investment and other strategies to reduce the vulnerability of the existing transportation infrastructure to natural disasters.

The vulnerability assessment of transportation infrastructure in UCTC region has provided UCTC the ability to deploy decision-support approaches that are both **needs-based** (e.g., *critical facilities, vulnerability, and/or identified areas of concern from practice inputs from stakeholders*) and **opportunity investments** that may line-up with maintenance schedules, UCTC’s TIP, or other existing work programs.

### *Needs-based Prioritization:*

Results of the vulnerability assessment have been provided in a format that combines both the vulnerability and criticality of assets by hazard types. Tiers or rankings based on combined vulnerability and criticality could be used for prioritizing the most vulnerable and critical assets impacting regional mobility. The figure below shows the tiering of vulnerability and criticality into high/moderate/low tiers to organize assets based on their combined measure of vulnerability and criticality for prioritization considerations.

Vulnerability	High	High Vulnerability, Low Criticality	High Vulnerability, Moderate Criticality	High Vulnerability, High Criticality
	Moderate	Moderate Vulnerability, Low Criticality	Moderate Vulnerability, Moderate Criticality	Moderate Vulnerability, High Criticality
	Low	Low Vulnerability, Low Criticality	Low Vulnerability, Moderate Criticality	Low Vulnerability, High Criticality
		Low	Moderate	High
		Criticality		

Source: FHWA Resilience and Durability Pilot, Resilient Tampa Bay Transportation.

### ***Opportunity Investments***

Transportation agencies often integrate the results of their vulnerability assessments into work programs and projects that are being considered in the future to make design changes or perform alternatives analysis to mitigate potential vulnerabilities. For example, UCTC could consider screening projects in their existing work program to the vulnerability assessment results to flag projects that are anticipated to be vulnerable based on the results of this study. This information could be used as a prioritization factor in UCTC's project programming to identify resilience approaches to mitigate those vulnerabilities or by making design changes (if they are not yet finalized) to add resilience improvement(s) to address those vulnerabilities. UCTC may tap into funding programs like the Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) or others to fund potential incremental costs. The following prioritization actions may be considered early on in the project development process to integrate the results from this study into UCTC's decision-making:

- Screening projects during planning to flag investments in particularly vulnerable areas – either to incorporate climate-resilient or adaptive design principles to address potential climate change impacts.
- Include resilience as a criteria for evaluating projects for funding (as a prioritization factor)
- Consider future environmental conditions in corridor planning studies (the results from the UCTC vulnerability assessment are available at an individual asset level). A corridor-level view (roll-up/summary of asset information) of the vulnerability assessment results may be needed when making programming decisions.

### ***Risk-Informed Prioritization***

A key next step in using the vulnerability assessments for prioritization is incorporating risk. Risk considers the probability and the consequence (e.g., severity, cost) of the hazard. BIL and the PROTECT program stipulate the use of risk-based vulnerability assessments. This provides for a more robust decision-making process and provides the rationale for evaluating potential investments using a benefit-cost or a multi-criteria analysis to justify the cost of implementing such adaptation or mitigation options.