UNITED STATES
DEPARTMENT OF TRANSPORTATION

Resilience Provisions in IIJA-Related TRB Special Report

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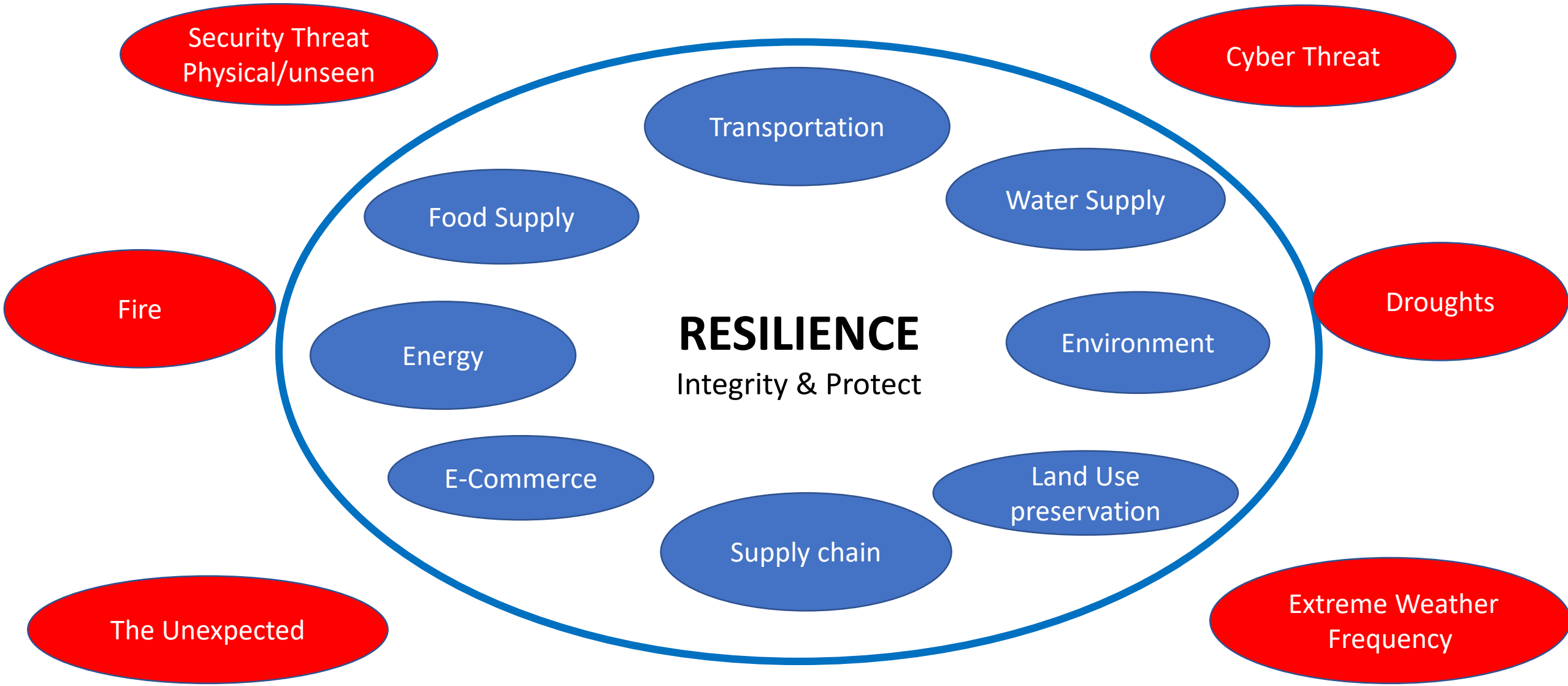
TRB Resilience Metric Study Workshop
June 16, 2022

Resilience – Interdependent Network System



Infrastructure Investment and Jobs Act (IIJA) 2022

- Largest ever infrastructure investment: $1.2 Trillion
- Title I, Subtitle D - Climate Change, Sections 11401 to 11406
- Multi-modal transportation resilience resonates throughout the legislation with key considerations
  - Increased investment and incorporation of benefit-cost analysis (BCA)
  - Mitigation and Planning requirements
  - Equity considerations and Community engagement
  - Increased Interagency Collaboration

Resilience Is Not A New Concept

- Exxon Valdez oil spill instituted the oil vessel response plans and an increase in pipeline corrosion detection technology.
- Ethanol derailments led to the redesigned DOT 112 tank car.
- Interstate 35W bridge collapse spotlighted the need for bridge investments and performance measures.
- Several Hazardous Material incidents (aviation, rail and freight) led to certification, permit process, redesign and inspection protocols.
- Severe extreme weather events led to Gulf Coast Study, Vulnerability Assessment tool, Long Range Transportation Planning, Sandy Hurricane pilots, Katrina investments and Flood Risk Management.

TRB Special Report 340: Five Recommendations

- Recommendation #1: All projects considered for Federal funding should go through a resilient assessment to assure resilience benefits are included.
- Recommendation #2: Promote the use of benefit cost analysis for project justifications.
- Recommendation #3: Develop tool(s) for estimating resilience investment benefits and prioritization.
- Recommendation #4: Use other transportation data resources.
- Recommendation #5: Multi-modal Agency collaboration on design standards and assessments.

IIJA Transportation Resilience Provisions

- Transportation Resilience and Adaptation Centers of Excellence (TRACE) -10 Regional Center to address resilience concerns*
- Advanced Research for Projects Agency – Infrastructure (ARPA-I)
  - Innovative research expanded and continuous opportunity for new technology and performance metrics to solve our most immediate and future transportation related issues*
- IIJA defines Protective Features
  - Improvement will mitigate the risk of recurring damage or the cost of future repair from extreme weather, flooding, and other natural disasters.
  - Authorizes 15% of annual apportionment of National Highway Performance Program to be used for “protective features”.

* Programs have not yet received appropriations.

IIJA Transportation Resilience Provisions

- Performance Management Data Support Program expanded to include collaboration effort and to integrate real-time data sources for transportation use.
  - Agency Coordination effort to gather transportation data.

- Promoting Resilience Operations for Transformative, Efficient and Cost-saving Transportation Programs (PROTECT)
  - Voluntary Resilience Improvement Plans
  - Formula funding plus discretionary grants

IIJA Transportation Resilience Provisions

- Port Infrastructure Development Program
- Bridge Investment Program
- **Other Agency Resilience Efforts**
  - Water and Wastewater Systems (EPA)
  - Energy Sector/Grid (DOE)
  - Policy to strengthen our public-private partnerships and federal assistance programs throughout all government agencies

DOT Resilience Activities

- Transportation Resilience Metrics Study - FY20
- Transportation Resilience Technical Assistance expanded - FY21
  - 3rd International Conference on Resilience to Natural Hazards and Extreme Weather anticipated late 2023.
  - Expand research NCHRP 2023-A-08 Development of the AASHTO Highway Asset Risk & Resilience Manual to include other modes.
- Resilience and Disaster Recovery Prioritization Tool to be released August 2022
  - Incorporates BCA component for resilient investment and prior – travel demand model as the data foundation.
  - MPO Partnership (Hampton Roads, Hillsborough, Galveston).
  - Hampton Roads utilizes the tool to prioritize rural transportation projects.

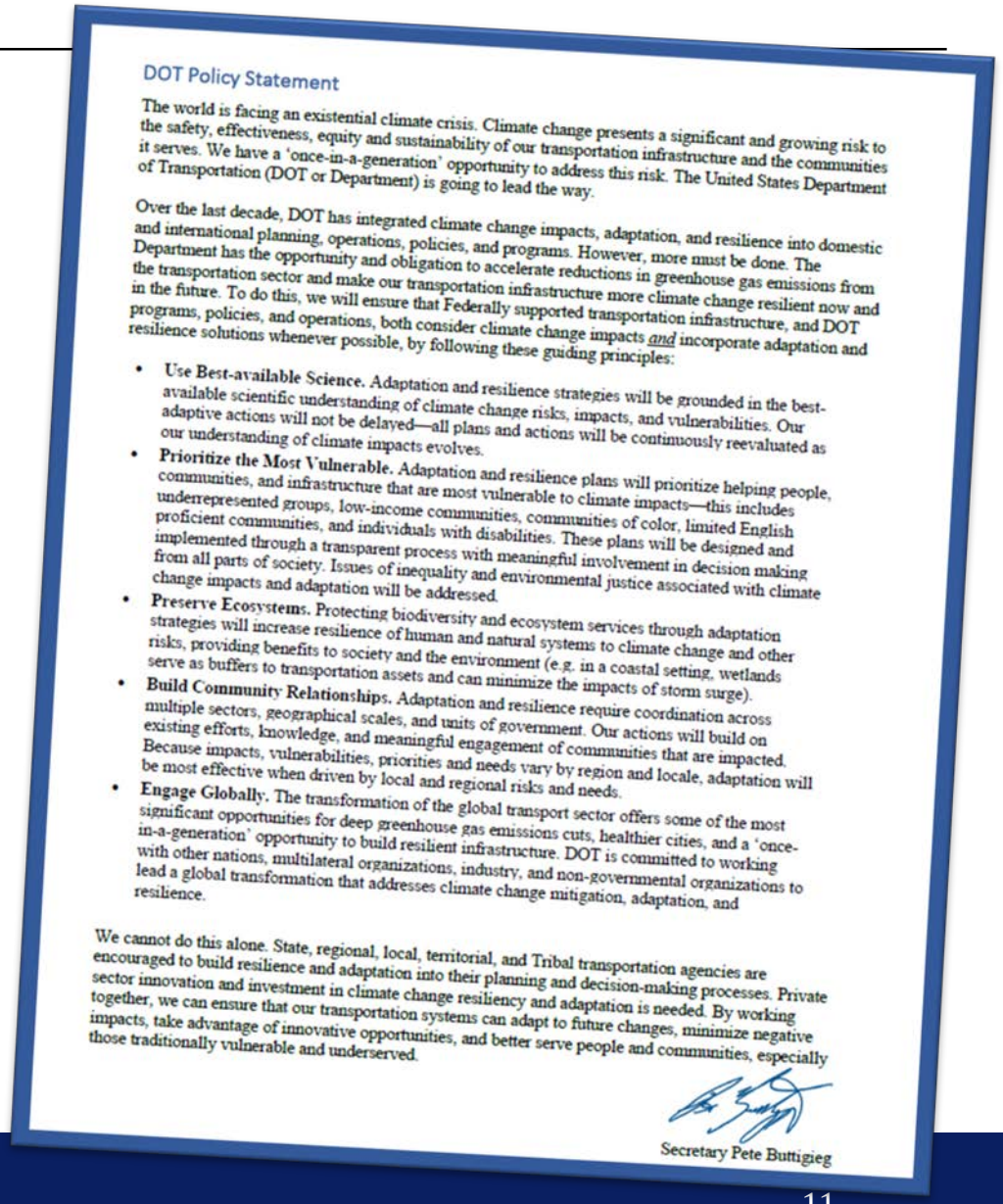
DOT Resilience Activities

- Appointed Chief Science Officer.
- Re-established the Resilience Task Force co-led by Offices of the Assistant Secretaries for Research and Technology, and for Policy.
- Departmental Adaptation, Mitigation and Resilience Action Plans and Policy Statements.

Climate Adaptation & Resilience Plan

US DOT Climate Action Plan, Revitalizing Efforts to Bolster Adaptation & Increase Resilience

- Use Best-available Science
- Prioritize the Most Vulnerable
- Preserve Ecosystems
- Build Community Relationships
- Engage Globally



DOT Policy Statement

The world is facing an existential climate crisis. Climate change presents a significant and growing risk to the safety, effectiveness, equity and sustainability of our transportation infrastructure and the communities it serves. We have a 'once-in-a-generation' opportunity to address this risk. The United States Department of Transportation (DOT or Department) is going to lead the way.

Over the last decade, DOT has integrated climate change impacts, adaptation, and resilience into domestic and international planning, operations, policies, and programs. However, more must be done. The Department has the opportunity and obligation to accelerate reductions in greenhouse gas emissions from the transportation sector and make our transportation infrastructure more climate change resilient now and in the future. To do this, we will ensure that Federally supported transportation infrastructure, and DOT programs, policies, and operations, both consider climate change impacts *and* incorporate adaptation and resilience solutions whenever possible, by following these guiding principles:

- **Use Best-available Science.** Adaptation and resilience strategies will be grounded in the best-available scientific understanding of climate change risks, impacts, and vulnerabilities. Our adaptive actions will not be delayed—all plans and actions will be continuously reevaluated as our understanding of climate impacts evolves.
- **Prioritize the Most Vulnerable.** Adaptation and resilience plans will prioritize helping people, communities, and infrastructure that are most vulnerable to climate impacts—this includes underrepresented groups, low-income communities, communities of color, limited English proficient communities, and individuals with disabilities. These plans will be designed and implemented through a transparent process with meaningful involvement in decision making from all parts of society. Issues of inequality and environmental justice associated with climate change impacts and adaptation will be addressed.
- **Preserve Ecosystems.** Protecting biodiversity and ecosystem services through adaptation strategies will increase resilience of human and natural systems to climate change and other risks, providing benefits to society and the environment (e.g. in a coastal setting, wetlands serve as buffers to transportation assets and can minimize the impacts of storm surge).
- **Build Community Relationships.** Adaptation and resilience require coordination across multiple sectors, geographical scales, and units of government. Our actions will build on existing efforts, knowledge, and meaningful engagement of communities that are impacted. Because impacts, vulnerabilities, priorities and needs vary by region and locale, adaptation will be most effective when driven by local and regional risks and needs.
- **Engage Globally.** The transformation of the global transport sector offers some of the most significant opportunities for deep greenhouse gas emissions cuts, healthier cities, and a 'once-in-a-generation' opportunity to build resilient infrastructure. DOT is committed to working with other nations, multilateral organizations, industry, and non-governmental organizations to lead a global transformation that addresses climate change mitigation, adaptation, and resilience.

We cannot do this alone. State, regional, local, territorial, and Tribal transportation agencies are encouraged to build resilience and adaptation into their planning and decision-making processes. Private sector innovation and investment in climate change resiliency and adaptation is needed. By working together, we can ensure that our transportation systems can adapt to future changes, minimize negative impacts, take advantage of innovative opportunities, and better serve people and communities, especially those traditionally vulnerable and underserved.

Secretary Pete Buttigieg

Why The Workshop and the Pathway Forward

- One equation will not solve the problem and it is a global issue
- Redefine our partnerships and get community engagement involved
- System approach and assure benefits are balanced
  - Correction in one area could impact another area negatively
- Expand research parameters –
  - Look beyond your own subject matter expertise

Thank You