State of Texas Resiliency Working Group

Summary Report on December 10th, 2020 Virtual Meeting

Attendance

Abraham Geevarghese
Adam Beckom
Akhil Anil Rajput
Allie Blazosky
Allie Isbell
Alyssa Chavez
Amir Esmalian
Ana Ramirez Huerta
Anand Puppala
Andrew Mao
Anthony Jones
Ashby Johnson
Barbara Maley
Ben LaBorde
Bill Frawley
Bob Dickinson
Brittney Gick
Carlos Calle
Casey Wells
Catherine McCreight
Catherine Wolff
Chad McKeown
Charles Airiohuodion
Chris Evilia
Chris Van Slyke
Clay Barnett
Dan Rudge
Dan Seedah
Darcie Schipull
David Ellis
David Friedenfeld
David Jones
Donald Koski
Elias Rmeili
Eva Garcia
Faxi Yuan
Feng Hong
Genevieve Bales
Ginger Goodin
Greg Wood
Heather Ashley-Nguyen
Heather Holsinger
Heng Wang
Hugo Hernandez
Hui Wu
Ibrahima Tembely
James Travis
Janie Temple
Jeffrey English
Jeffrey Neal
Jessica Castiglione
John Bilyeu
Jolanda Prozzi
Jose Campos
Julie Fulgham
Justin Morgan
Karen Bukhard
Karen Burkhard
Karen Owen
Karla Weaver
Kathryn Vo
Kevin Feldt
Kevin Hall
Kim Neely
Kirby Snideman
Kirk Fauver
Kris Knoll
Laura Norton
Lynn Hayes
Major Hofheins
Mansour Shiraz
Maria Champine
Marisabel Ramthun
Matt Miller
Meagan Coughlin
Melba Schaus
Michael Batuzich
Michael Bolin
Michael Howell
Michael Leary
Mike Burns
Mohammad Al Hweil
Pete Madrid
Qing Li
Qingchun Li
Raymond Sanchez Jr.
Rea Donna Jones
Rebecca Lupes
Rebecca Pinto
Robert MacDonald
Roberto Rodriguez
Ronisha Hodge
Roxana Ene
Ryan Granger
Stephan Gage
Stephen Keen
Tharani Krishnakumar
Thomas Barnett
Tim Lomax
Todd Carlson
Tom Bruechert
Tony Ogboli
Vickie Alexander
Vishu Lingala

Introductions

Chris Evilia and Bill Frawley made brief introductory remarks in reviewing the agenda, relaying the importance of resilience, and summarizing prior efforts leading up to the formation of the statewide Texas Resiliency Working Group within the Texas MPOs (TEMPO) organizational umbrella. Bill Frawley advised that a possible output of this work group could be a framework or template that MPOs can use to tailor to their area when considering how to address resiliency within their project analysis and selection.

Presentations

Integrating Natural-Hazard Resilience into Transportation Planning

Becky Lupes,
Federal Highway Administration,
Office of Natural Environment,
Sustainable Transportation and Resilience Team

Becky Lupes made the following key observations:

1. Though there is flexibility in applying various resiliency-related regulatory requirements, one that has arisen recently has a stricter emphasis from *23 CFR 667*- Periodic Evaluations of Damaged Facilities. As of November 23, 2020, *23 CFR 667* requires MPOs and state DOTs to evaluate roads, highways, and bridges on both NHS and non-NHS asset lists that are being damaged repeatedly due to emergency events to be evaluated for alternative design prior to inclusion in the STIP.
2. Multiple resources are available on FHWA website, including a white paper describing MPO and State DOT practices integrating resiliency into transportation planning: https://www.fhwa.dot.gov/environment/sustainability/resilience/ongoing_and_current_research/planning/

The audience had several questions for Becky including:

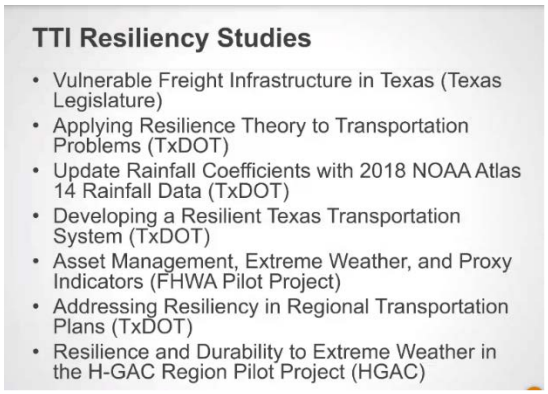
1. *Is SH 71 considered as a facility with repeat damage from wildfires in Bastrop area?*- It was not identified as a repeat damage location in TxDOT's 667 submittal (James Travis, FHWA responding).
2. *How do Natural and Nature-Based Features (NNBF) work?*- A web resource is available (https://www.fhwa.dot.gov/environment/sustainability/resilience/ongoing_and_current_research/green_infrastructure/) developed by FHWA discussing ways to develop transportation projects in ways that use natural processes to improve roads resistance to erosion. In addition, Corpus Christi MPO is involved in an NNBF project.
3. *What is considered resiliency-scale disruption vs. daily or regular disruptions?*- Encourage agencies to look at alternatives such as alternate routes, or dynamic message signs and signal timing adjustments in response to smaller scale regular disruptions occurring from operational issues, compared to larger scale resilience event. If sunny day floods, or increased rail or pavement buckling from extreme heat occur, then it is likely to be on a regional vs. specific roadway scale and program and planning costs are likely to go higher.

Overview of Completed TTI/TxDOT Resiliency Workshops

Jolanda Prozzi
Texas A&M Transportation Institute
Environment and Planning Program

Jolanda Prozzi made the following key observations:

1. Texas legislature initiated the first TTI inquiry into resiliency through request to assess vulnerability of freight infrastructure in Texas. Since then TTI has led efforts to develop a decision support tool for resiliency improvement strategies in the Houston-Galveston metropolitan area and host a number of resiliency workshops.
2. Texas MPOs were surveyed in the spring of 2019 and results reveal that 1/3 of MPOs have goals and definitions of resiliency, while 1/5th have resiliency metrics.
3. Based on slate of resiliency workshops there are workgroup, there are needs to:
    a. continue hosting multidisciplinary workshops,
    b. develop modular/flexible resiliency frameworks,
    c. establish and maintain a resiliency data clearinghouse,
    d. and create tools (e.g., scenario planning tools) that can draw on complex data sets to convey regional asset vulnerabilities to natural and man-made disasters for use in communicating to decision makers and inclusion in performance-based project selection.



The audience had several questions for Jolanda including:

1. *How would you communicate to smaller MPO policy boards why staff is spending time on resiliency?*- It would require first a framework that addresses resiliency in relative terms for the smaller MPO. This would establish thresholds and criteria to consider vulnerability, and resiliency at the scale that matters to various Texas MPO policy boards.
2. *On resiliency metrics are there some examples of metrics which MPOs can use?*- TTI categorized resiliency metrics in use by those related to infrastructure, those related to operations, and those related to redundancy:
    a. Infrastructure: roads can withstand a category x hurricane event or 100+ year flood event. Or roads can be inundated x times per year to get at robustness of infrastructure.
    b. Operations: roads will be operational within x hours of an event at x level of service or x% of additional travel time per planning time index or other measures.

c. Redundancy: # of alternative routes and/or modes to critical regional corridors.

Discussion on Potential Activities, Possible Goals and Objectives

The work group provided comments on potential resiliency-related goals and topics:

1. Eva Garcia: Incorporating active transportation planning into resiliency considerations (e.g., natural and nature-based features).
2. Kirk Fauver: Development of a standard framework and checklists for identifying how to better integrate resiliency into the metropolitan planning process.
3. Ashby Johnson: suggested goal: criteria that could be used to score projects for Plan and TIP selection.
4. Heather Holsinger: keep track of developments in NCHRP 08-129 (due out in 2022)- https://apps.trb.org/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=4741
5. Ashby Johnson: framework and catalogue of applicable strategies, costs, benefits (game plan) for recovery (especially for goods movement) so a community can get back to normal faster.
6. Jeffrey Neal: Identification/quantification of both risks and benefits in planning for resiliency.
7. Cameron Walker: a process to explain how we measure resiliency within scoring and project selection. What the measurements are, whether we have improved from past investments. What is the threshold for an extreme event and what could be a method to deliver a high level low-cost vulnerability assessment that is readily communicated to policy boards.
8. Michael Howell: Understanding how to incorporate resiliency into an understandable and quantifiable measure is what's needed.
9. Eva Garcia: Incorporating resiliency strategies into roadway design manual.
10. Dan Rudge: how to educate officials on how resiliency is important.

Discussion on Organization, Membership, and Structure

A few key items from this discussion include:

1. Jeff Neal with NCTCOG will chair the resiliency working group.
2. Action items include:
    a. Prioritize issues noted above.
    b. Develop and formalize communications and outreach mechanisms to include broader subject matter experts (NOAA, NWS, USGS, USACE, universities) and resiliency community (freight providers, ports, transit, TxDOT, municipalities, counties, special districts). Jolanda mentioned how periodic workshops serve as critical venues to bring all groups together under one roof.