



MEMORANDUM

TO: Transportation Planning Board Technical Committee
FROM: Stacy Cook, TPB Transportation Planner, Andrew Meese, Systems Planning and Performance Manager
SUBJECT: Scope and Outreach for TPB Resiliency Study
DATE: January 29, 2021

BACKGROUND

In February, TPB staff will conduct outreach to its members through its TPB Technical Committee liaisons. Staff will be looking for support to document activities at each member agency related to transportation resiliency planning – specifically, staff are looking to gather responses to a series of questions about resiliency planning for natural disasters, extreme weather and stormwater mitigation planning.

This memorandum documents the purpose of the research, the approach to TPB Technical Committee member outreach, the federal resiliency planning requirements for MPOs, and summarizes the scope and schedule of this research project.

OVERVIEW

TPB is conducting research, with consultant support, to document activities that TPB members and select partners are undertaking to prepare for the transportation system to be resilient in the face of natural disasters. The purpose of this work is to respond to one of the federal Planning Factors and to advance important planning work and regional coordination on the topic of resiliency, one of TPB's policy priorities. This study is referred to as the TPB resiliency study.

As context to this effort, it should be noted that TPB and COG are conducting or have conducted numerous efforts regarding climate change and resiliency. For the purposes of clarification, these efforts are noted below. This list is not comprehensive of all COG and TPB activities but is provided for the purpose of clarity. For more information about the studies listed here, please view the January 2021 memorandum that can be accessed online at:
<https://www.mwcog.org/file.aspx?&A=Uq856Jo%2f9rWyw9gxFiO9%2fHGe%2b8yO3Jm7zbuAC0jOjBM%3d>

- In 2010, the TPB joined MWCOG's action to set greenhouse gas (GHG) reduction targets to mitigate the impact of climate change.
- Over the last decade the TPB completed two studies to evaluate strategies to address these targets, including the 2010 What Would It Take scenario analysis and the 2016 Multisector

Working Group study that identified the various types of projects, programs and policies that have the greatest potential to reduce GHG in the transportation sector.

- In October, the COG Board approved the 2030 Regional Climate and Energy Action Plan. TPB issued a resolution endorsing the climate goals in this plan.

Currently, TPB is advancing the following two studies.

- TPB climate change mitigation study. staff plan to conduct additional climate planning work that would examine specific strategies to develop estimates of the levels of outcomes needed to help reduce the transportation sector's GHG emissions commensurate with the region's GHG reduction goals for 2030. (Please see link above for more information)
- TPB Resiliency Study, described in this memorandum.

OUTREACH TO MEMBERS

TPB staff request that each TPB Technical Committee member be our central 'point person' for their jurisdiction for the purpose of this information collection effort. Stacy Cook, TPB Transportation Planner, is the project manager for this research effort. TPB Transportation Planner, Leo Pineda, will be the TPB primary contact. Mr. Pineda will send emails to each TPB Technical Committee member listed in Task 2 of the scope below.

OUTREACH STEPS:

2/5/2021: TPB will provide an overview of the project and proposed outreach approach during the February TPB Technical Committee Meeting.

2/12/2021 (approximately) Leo Pineda will send materials to member contacts for review, including:

- Excel Spreadsheet, completed to the degree feasible by the consultant team, based on materials online. We'll also send a list of documents we've referenced that have been posted online by your agency within approximately the last decade.
- A copy of this memorandum

2/12/2021- 3/5/2021: TPB staff as that TPB Technical Committee representatives support this research by:

- Adding responses to the spreadsheet
- Identifying documents or initiatives that we can reference
- Providing any other information that we can use to 'fill the blanks'

2/18/2021 (Estimated date: to be scheduled) TPB staff will hold a Q/A session during the third week of February: members can call in to learn more about this effort, ask questions, etc.

3/5/2021: Requested return date for updated Excel spreadsheet and any other input

FEDERAL REQUIREMENTS

Fixing America's Surface Transportation (FAST) Act Transportation Planning Rule (May 2016) added:

- Metropolitan Transportation Plan must assess capital investment and other strategies that reduce the vulnerability of existing transportation infrastructure to natural disasters (23 CFR450.324(f)(7)).
- MPOs recommended to consult with agencies and officials responsible for natural disaster risk reduction when developing Plan and TIP (23 CFR 450.316(b)).
- New planning factor on improving the resiliency and reliability of transportation system (23 CFR 450.206(a) and 23 CFR450.306(b)), which is:
 - Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation

Meaning of 'resilience' for the purpose of this research: As defined by the Federal Highway Administration; resilience is 'the ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions'. ¹

SCOPE OF WORK

The primary activities will include researching and documenting agency adaptation and stormwater mitigation activities and initiatives to assist TPB in assessing capital investment and other strategies that reduce the vulnerability of existing transportation infrastructure to natural disasters, identify opportunities for regional coordination. The consultants will produce a resiliency white paper to communicate about the findings of this research.

TASKS:

Task 1. Task Order Management – ongoing

Task 2. Develop a framework for documenting information

Develop a framework for documenting information about resiliency planning in the TPB planning region. This research will focus on adaptation planning for natural disaster/extreme weather resiliency and stormwater mitigation activities. **(COMPLETE)**

The consultant is collecting information for each of the following TPB member transportation agencies:

- Virginia: OIPI, DRPT, VDOT
- D.C.: DDOT, DCOP
- MDOT including its transportation business units, MTA (MARC), MDTA and MDOT SHA.
- WMATA,

¹ [PowerPoint Presentation \(trb-adc60.org\)](http://trb-adc60.org)

- VRE,
- NVTA,
- NPS,
- NCPC

Selected local jurisdictions transportation departments:

- Arlington County, VA
- Alexandria, VA
- Charles County, MD
- Fairfax County, VA
- Frederick County, MD
- Loudoun County, VA
- Montgomery County, MD
- Prince George’s County, MD
- Prince William County, VA

The framework for collection information is complete, is was designed to capture information on the following topics. Please see Appendix A to this memorandum to view the research framework template.

- Goals
- Vulnerability Analysis
- GIS Data and other information about high priority infrastructure and vulnerabilities
- Adaptation Strategies
- Project Development approaches: (program review, maintenance)
- Stormwater

Task 3. Resiliency Planning Information Gathering and Documentation

Develop a draft and final approach and schedule for conducting research and communicating with and gathering information from the jurisdictions. Implement the approved approach.

3.1 Desk research to complete the framework (question template) for each agency listed in Task 2. **(COMPLETE)**



3.2 Conduct outreach to TPB members complete frameworks (to add information that might not be available via desktop research).

3.3 Identify infrastructure that should be considered for future evaluation: Conduct a comprehensive review of the information provided by members regarding vulnerability assessments, including the infrastructure that members identified as high priority, and that which was identified as vulnerable to various impacts of extreme weather and natural disaster (e.g., high heat days, flooding, sea level rise). Review these findings against the TPB region transportation facilities to identify important facilities that are not listed and should be evaluated for natural disaster

vulnerabilities. Document if the 'unlisted' facilities were considered in a completed vulnerability analysis.

3.4 Document and summarize findings in a memorandum.

4. DEVELOP WHITEPAPER

Develop a whitepaper for public consumption that is responsive to the concepts listed in the preliminary table of contents. Synthesize the research findings, document regional strategies for resilience and the MPO role in resilience planning.

SCHEDULE

Task 1 – Ongoing

Task 2 – December 2020-January 2021 (complete)

Task 3.1, Desk Research – January-February

Task 3.2, Outreach to members – February-early March

Task 3.3, Identify Gaps – March-May

Task 3.4, Draft Memorandum – April

Task 4, Draft Whitepaper – May-June

Agenda Item 8, Appendix A: TPB Resiliency Study, Task 2, Research Framework Template

Category	Framework Questions	[Document A]	[Document B]	[Document C]
Goals & objectives	Is transportation resilience to climate change impacts part of the document's goals or objectives? (Y/N/Other)			
Goals & objectives	If yes/other, please describe.			
Goals & objectives	Does the document give a reason for the agency wanting to address transportation resilience to CC impacts? (Y/N/Other)			
Goals & objectives	If yes/other, please describe.			
Analysis	Does this document reference any analysis or studies (e.g., a vulnerability assessment) that the agency has undertaken regarding transportation infrastructure resiliency? (Y/N/Other)			
Analysis	If yes/other, please describe briefly here (e.g., vulnerability assessment) and add more detail in the later sections.			
Analysis	What types of transportation infrastructure were covered by the vulnerability assessment or study of climate risks to types of infrastructure? List types as named in document. Examples might include but are not limited to: roads, state highways, interstate, arterials, bridges, culverts, rail transit stations, bus stops, tunnels			
Data and information	Does the document identify transportation infrastructure that is high priority or critical? (Y/N/Other)			
Data and information	If yes/other, please briefly list the infrastructure identified and any definitions used to determine which infrastructure is high priority or critical.			
Data and information	If yes/other, is any GIS data available?			
Data and information	Does the document identify transportation infrastructure that is vulnerable to extreme weather and CC impacts? (Y/N/Other)			
Data and information	If yes/other, please briefly describe the infrastructure identified any definitions used to determine which infrastructure is vulnerable.			
Data and information	If yes/other, is any GIS data available?			
Data and information	Does the document reference any data (historical or forecasted) relating to stormwater impacts, including extreme precipitation and flooding? (Y/N/Other)			
Data and information	If yes/other, please describe (including noting whether GIS data may be available and the source of the data, if not procured by the agency).			
Data and information	Does the document reference any data (historical or forecasted) relating to coastal inundation, including sea level rise and storm surge? (Y/N/Other)			
Data and information	If yes/other, please describe (including noting whether GIS data may be available and the source of the data, if not procured by the agency).			
Data and information	Does the document reference any data (historical or forecasted) relating to landslides and other weather-related erosion of earth/materials supporting transportation structures? (Y/N/Other)			
Data and information	If yes/other, please describe (including noting whether GIS data may be available and the source of the data, if not procured by the agency).			
Data and information	Does the document reference any data (historical or forecasted) relating to impacts from extreme temperatures, including heat and cold? (Y/N/Other)			
Data and information	If yes/other, please describe (including noting whether GIS data may be available and the source of the data, if not procured by the agency).			
Data and information	Does the document reference any other GIS data relevant to transportation resilience, such as projects that have been implemented to improve resilience?			
Strategies	Has the document identified or evaluated strategies to address the identified vulnerabilities? (Y/N/Other)			
Strategies	If yes/other, please briefly describe the process for identifying and evaluating strategies.			
Strategies	Has the document selected or adopted any strategies to address the identified vulnerabilities? (Y/N/Other)			
Strategies	If yes/other, briefly describe the strategies they selected and to what types of infrastructure those strategies apply.			
Strategies	Of the selected strategies, does the document indicate that the agency has begun to implement any? (Y/N/Other)			
Strategies	If yes/other, please describe the implementation status.			
Project development	Does the document talk about how the agency selects, funds, or design/builds transportation projects? (Y/N/Other) If no, skip all project development questions.			
Project development	Does the document describe whether there is a process for screening proposed transportation projects to identify any that are in locations that are particularly vulnerable to climate impacts? (Y/N/Other)			
Project development	If yes/other, please describe the screening process.			
Project development	Within the document's account of the agency's process for selecting and prioritizing transportation projects, is there any consideration of resilience? (Y/N/Other)			
Project development	If yes/other, please describe how resilience is incorporated into project selection or prioritization.			

Project development	Does the document include any criteria for funding transportation projects include anything relating to resilience? (Y/N/Other)			
Project development	If yes/other, please describe how resilience is factored into funding criteria.			
Project development	Does the document include any guidelines/standards for project design or engineering that are designed to improve transportation resilience? (Y/N/Other)			
Project development	If yes/other, briefly describe the type of standards or guidelines.			
Stormwater	Does the agency have activities, analysis, plans, or strategies for reducing or mitigating the transportation system's contribution to stormwater impacts? (Y/N/Other)			
Stormwater	If yes/other, please describe.			
Stormwater	Is there any discussion of the interrelationships between stormwater, electrical power grids/infrastructure, and communications networks? (Y/N/Other)			
Stormwater	If yes/other, please describe.			
Coordination	Does the agency have any partners with which its working on transportation resiliency? (Y/N/Other)			
Coordination	If yes/other, please describe.			
Challenges	What is the agency's biggest challenge (if stated) for addressing transportation resiliency? Money, time, designated staff, technical expertise, other?			
Agency Contact?	If the document provides a contact person at the agency, please provide their information.			
Other?	Any other information that we should know?			