

**visualize**  
**2045** A long-range  
transportation plan  
for the National  
Capital Region

## APPENDIX L

Incorporation of the TPB Resiliency Study into the 2022  
update to Visualize 2045

Draft, March 2022



**RESILIENCY STUDY FOR THE VISUALIZE 2045 UPDATE (2022)**  
**LONG-RANGE TRANSPORTATION PLAN FOR THE NATIONAL CAPITAL REGION**  
March 2022

**ABOUT VISUALIZE 2045 & THE TPB**

Visualize 2045 is the federally required long-range transportation plan for the National Capital Region. It identifies and analyzes all regionally significant transportation investments planned through 2045 to help decision makers and the public “visualize” the region’s future.

Visualize 2045 is developed by the National Capital Region Transportation Planning Board (TPB), the federally designated metropolitan planning organization (MPO) for metropolitan Washington. It is responsible for developing and carrying out a continuing, cooperative, and comprehensive transportation planning process in the metropolitan area. Members of the TPB include representatives of the transportation agencies of the states of Maryland and Virginia and the District of Columbia, 24 local governments, the Washington Metropolitan Area Transit Authority, the Maryland and Virginia General Assemblies, and nonvoting members from the Metropolitan Washington Airports Authority and federal agencies. The TPB is staffed by the Department of Transportation Planning at the Metropolitan Washington Council of Governments (COG).

**CREDITS**

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## INCORPORATION OF THE TPB RESILIENCY INTO THE 2022 UPDATE TO VISUALIZE 2045

The TPB completed the Resiliency Study in 2021. The TPB considers the study a component of the 2022 update to Visualize 2045. The findings of this study can inform future TPB policy priorities. The findings can also inform TPB member agency actions, some of which that could be reflected in a future constrained element of the plan, as locally developed, regionally significant, projects, programs, and policies that members fund.

This Appendix provides a summary of the study. To view the complete study, please visit:

- the Visualize 2045 website climate, resiliency and environmental health page: <https://visualize2045.org/future-factor/climate-resiliency-and-environmental-health/>
- the study page: <https://www.mwcog.org/transportation/planning-areas/air-quality-and-environment/resiliency/>
- or access the full [TPB Resiliency White Paper](#) or [Memorandum](#) that documents the 2021 inventory of member resiliency planning actions directly online.

## SUMMARY OF THE TPB RESILIENCY STUDY (2021)

This appendix summarizes the TPB Resiliency Study and its completed products, including a memorandum and whitepaper, now available online on the [Visualize 2045](#) and [COG websites](#). This memorandum documents the purpose of the research, background on related planning efforts, the approach to TPB Technical Committee member outreach, the federal resiliency planning requirements for MPOs, and summarizes the tasks of this research project.

### OVERVIEW

The purpose of this study is to advance regional planning for one of the federal Planning Factors, transportation resiliency and reliability, which is also one of TPB's policy priorities.

The primary tasks, supported by a consultant team, included:

- conducting research to document planning and capital-programming activities that the TPB member agencies and select partners are undertaking to prepare for the transportation system to be resilient in the face of natural disasters;
- identifying primary vulnerabilities to natural hazards, strategies to address these, and opportunities for regional coordination on this topic; and
- identifying potential future resiliency planning opportunities consistent with the MPO role.

### BACKGROUND

As context to this effort, it should be noted that the 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%2f9rWyw9gxFj09%2fHGGe%2b8yQ3Jm7zbuAC0jQjBM%3d>

- In 2010, the TPB joined MWCOC'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 2020, the COG Board approved the 2030 Regional Climate and Energy Action Plan. TPB issued a resolution endorsing the climate goals in this plan.

In 2021 the TPB advanced 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

The TPB staff reached out to TPB Technical Committee members, primarily at the state and county level for this study to gather information about transportation resiliency planning activities. This information was collected through the completion of a research framework template and a series of virtual meetings. This input is summarized in the memorandum posted online and specific examples of activities are discussed in the whitepaper.

## 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'. <sup>1</sup>

## PRIMARY STUDY TASKS

### Develop a framework for documenting information

Develop a framework for documenting information about resiliency planning in the TPB planning region. This research focused on adaptation planning for natural disaster/extreme weather resiliency and stormwater mitigation activities.

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

- |                                                                                         |         |
|-----------------------------------------------------------------------------------------|---------|
| • Virginia: OIPI, DRPT, VDOT                                                            | • WMATA |
| • DC: DDOT, DCOP                                                                        | • VRE   |
| • MDOT including its transportation business units, MDOT MTA (MARC), MDTA and MDOT SHA. | • NPS   |
|                                                                                         | • NCPC  |

Selected local jurisdictions transportation departments:

- |                        |                          |
|------------------------|--------------------------|
| • Arlington County, VA | • City of Alexandria, VA |
|------------------------|--------------------------|

<sup>1</sup> PowerPoint Presentation (trb-adc60.org)

- Charles County, MD
- Fairfax County, VA
- Frederick County, MD
- Loudoun County, VA
- Montgomery County, MD
- Prince George's County, MD
- Prince William County, VA

#### **Resiliency Planning Information Gathering and Documentation**

The study team developed and implemented an approach and a schedule for conducting research and communicating with and gathering information from the jurisdictions. Document and summarize findings in a memorandum.

#### **Develop Whitepaper**

The study team developed a whitepaper that synthesizes the research findings, documents regional strategies for resilience, addresses equity in resiliency planning and the potential MPO role in future resilience planning efforts.