

# RESILIENCE IMPROVEMENT PLAN MM2045 AMENDMENT

## BACKGROUND

The Michigan Department of Transportation (MDOT), in collaboration with statewide and regional stakeholders, developed a federally recommended [Resilience Improvement Plan](#) to explore strategies to improve statewide transportation resilience to climate hazards. The plan's development was informed by the Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Program, which was established through the Bipartisan Infrastructure Law passed in 2021. The plan considers the top climate hazards that impact Michigan's transportation system, including flooding, extreme heat, and coastal erosion. The purpose of this Resilience Improvement Plan is to evaluate vulnerabilities, assess the risk associated with climate hazards, and identify strategies to improve the resilience of surface transportation facilities to climate hazards in Michigan. This plan focuses on four key transportation assets: roads, bridges, culverts, and pump stations.

MDOT received FHWA approval of its Resilience Improvement Plan in December 2024. As a result, MDOT will receive a 7 percent reduction in non-federal match for PROTECT formula funds. There is a potential to receive an additional 3 percent reduction in non-federal match if MDOT incorporates its Resilience Improvement Plan into its long-range transportation plan (which this amendment does). Please see below for the exact language from FHWA on the PROTECT program's federal cost share. It should be noted that MDOT is allowed to combine PROTECT funding with other federal funding sources, but the reduction in non-federal match will only apply to the PROTECT-funded portions of the projects.

This amendment to MM2045 incorporates by reference the Resilience Improvement Plan, its evaluation of Michigan's transportation system's vulnerabilities to top climate hazards, the risks associated with these climate hazards, and the plan's strategies to improve the resilience of Michigan's surface transportation facilities. The Resilience Improvement Plan helps accomplish the goals, objectives, and strategies outlined within MM2045, which is detailed in depth directly below. Finally, this amendment supports the programming of resilience projects by reducing the amount of state funds required to support PROTECT-funded projects (i.e., in total a 10 percent reduction of required non-federal funds).

## ALIGNMENT WITH MM2045 + ADDITIONAL GOALS AND OBJECTIVES

MDOT's Resilience Improvement Plan was developed in alignment with the department's long-range transportation plan, MM2045. More specifically, the plan was developed to support MM2045's vision statement:

*"In 2045, Michigan's mobility network is safe, efficient, future-driven, and adaptable. This interconnected multimodal system is people-focused, equitable, reliable, and convenient for all users, and enriches Michigan's economic and societal vitality. Through collaboration and innovation, Michigan will deliver a well-maintained and sustainably funded network where strategic investments are made in mobility options that improve quality of life, support public health, and promote resiliency."*

Not only does the Resilience Improvement Plan "promote resiliency," it directly supports resiliency goals, objectives, and strategies within the long-range transportation plan. MM2045 outlined MDOT's

goals, objectives, and strategies related to building climate change resilience into the state's transportation system, particularly in Chapters 7 and 14 – *Community, Environment, and Health and Network Resilience* – and in *Strategy 5: Building Resilience*. The long-range transportation plan also notes why becoming more resilient is imperative for Michigan. According to the MM2045 Plan, in 2021, parts of Detroit experienced major flooding when 6 inches of rain overwhelmed stormwater infrastructure and flooded several sections of major freeways that are depressed, including portions of I-94, I-96, and I-75. As climate change increases both rainfall intensity and duration, infrastructure needs will grow and stormwater flooding will worsen, which will negatively impact residents and the community. Using this historical knowledge of previous extreme weather events helped guide the development of the Resilience Improvement Plan and allow it to directly act on strategies within MM2045.

In fact, the Resilience Improvement Plan takes direct action on addressing strategies listed underneath *Strategy 5.1: Identify and address risks to Michigan's transportation network* in two ways:

1. The Resilience Improvement Plan includes a statewide vulnerability assessment, which is listed underneath *Strategy 5.1* as the top strategy
2. The Resilience Improvement Plan also includes methods to incorporate resiliency considerations into planning, programming, and project development – another bulleted strategy listed underneath *Strategy 5.1*

In addition, PROTECT funds (for which the Resilience Improvement Plan helps inform the use) can be used to increase the resilience of surface transportation assets, communities, coastal infrastructure, and natural infrastructure. In support of the goals and objectives of MM2045, and in alignment with the purpose of the PROTECT Program funds, the Resilience Improvement Plan also identifies the following short-, mid-, and long-term goals:

- Short-term goals:
  - Identify and prioritize projects that improve the resilience of surface transportation facilities to climate hazards in Michigan.
  - Incorporate resilience strategies into existing processes, procedures, and design manuals.
  - Prioritize project locations that reduce risks to and improve access for disadvantaged communities.
- Medium-term goals:
  - Secure funding sources for prioritized projects.
  - Implement projects that improve the resilience of surface transportation facilities to climate hazards in Michigan.
- Long-term goals:
  - Build a transportation system that is prepared for, can withstand, and recover from the hazards associated with climate change.
  - Reduce risks associated with climate hazards.
  - Maintain safe and effective transportation throughout Michigan.
  - Ensure continued access to homes, businesses, essential services, and critical facilities.
  - Reduce long-term costs by avoiding future damage, maintenance, and reconstruction over a project's useful life.

Achieving these goals will require a systematic and ongoing approach across the state and in partnership with tribal nations and local governments. The Resilience Improvement Plan is considered a living document and MDOT may adapt it as needed.

## FEDERAL COST SHARE

(a) *Federal share in general.* The Federal share of the cost of a project carried out using PROTECT Formula Program funds is governed by 23 U.S.C. 176(c)(3)(D). It generally shall not exceed 80 percent of the total project cost. (23 U.S.C. 176(c)(3)(D)). An exception to this general requirement is discussed in paragraph (b) below. Paragraph (c) below also discusses other Federal funds that may be used to meet the applicable non-Federal share requirement for the PROTECT Formula Program. See also Federal-Aid Guidance Non-Federal Matching Requirements (2019) for information on non-Federal match requirements and flexibilities.

(b) *Authorized reductions in non-Federal share.* Subject to certain limitations discussed below, the non-Federal share of the cost of a project carried out using PROTECT Formula Program funds may be reduced by —

1. 7 percentage points if the State has developed a Resilience Improvement Plan and prioritized the project on that Resilience Improvement Plan (23 U.S.C. 176(e)(1)(B)(i)); and
2. 3 percentage points if a State Resilience Improvement Plan developed in accordance with Section 176(e) is incorporated (directly or by reference) into the metropolitan transportation plan under 23 U.S.C. 134 or the statewide long-range transportation plan under 23 U.S.C. 135, as applicable. (23 U.S.C. 176(e)(1)(B)(ii)).

For example, a State may have a resilience project eligible under PROTECT that is prioritized in its Resilience Improvement Plan developed under Section 176(e). Provided the State meets all procedural requirements for the Resilience Improvement Plan, the scenario may result in a split of 87 percent PROTECT Formula Program funds and 13 percent non-Federal funds. In a variation of the same scenario, if the State also incorporates the Resilience Improvement Plan into the long-range statewide transportation plan, it may result in a split of 90 percent of PROTECT Formula Program funds and a non-Federal share of 10 percent.

*Maximum reduction in non-Federal share:* A State may not receive a reduction in non-Federal share under Section 176(e)(1) of more than 10 percentage points for any single project carried out with PROTECT Formula Program funds. (23 U.S.C. 176 (e)(1)(B)(iii)(I)).

*No negative non-Federal share:* A reduction in non-Federal share under Section 176(e)(1) shall not reduce the non-Federal share of the costs of a project carried out with PROTECT Formula Program funds to an amount that is less than zero. (23 U.S.C. 176 (e)(1)(B)(iii)(II)).

(c) *Combining PROTECT Formula Program funds with other eligible USDOT or other Federal funds.* PROTECT Formula Program funds may be combined with other eligible USDOT or other Federal funding for projects that support the goals of the PROTECT Formula Program if the eligibility requirements and applicable Federal share are met for each program.

A State may apply Federal funds other than Federal funds apportioned to the State under section 104(b)(8) (PROTECT Formula Program funds) toward the non-Federal share for a project funded with

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PROTECT Formula Program funds. (23 U.S.C. 176(c)(3)(D)(ii)). However, the non-Federal share requirements for those other Federal funds must still be met. In addition to applicable Federal share requirements, eligibility requirements must also be met for all funds involved on the project.

For example, a State may determine that because its 50-year flood elevation will increase by 3 feet it should elevate a bridge to ensure public safety and provide resilience. The State could decide to use PROTECT Formula Program funds as the main source (80 percent) of funding and match it with 16 percent Surface Transportation Block Grant (STBG) funds and 4 percent State funds to meet the non-Federal share requirements of STBG. Most Federal-aid funds, including STBG, require a non-Federal match.