



U.S. Department of Transportation

# **FY 2025** **Evaluation** **Plan**



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# Fiscal Year 2025 Evaluation Plan Summary

The U.S. Department of Transportation (DOT) is pleased to present its **Fiscal Year (FY) 2025 Evaluation Plan**. This document describes plans for evaluations and other significant evidence-building activities that the Department will carry out in FY 2025

(see tables below). This document also reports progress on program evaluations introduced in the Department’s FY 2023 Evaluation Plan and FY 2024 Evaluation Plan.

## The FY 2025 Evaluation Plan Includes Four Significant New Evaluations

Evaluation	Strategic Goal	Lead	BIL-Related	Large Grant Program	Evaluation Type	Description
<b>“Click It Or Ticket” Evaluation</b>	Safety	National Highway Traffic Safety Administration (NHTSA)			Outcome	Examine the efficacy of the national high visibility enforcement campaign “Click It Or Ticket” on seat belt usage, attitudes, and awareness
<b>State of Good Repair (SGR) Formula Grants Program</b>	Economic Strength & Global Competitiveness	Federal Transit Administration (FTA)	X	X	Outcome	Evaluate the degree to which the SGR Grant Program is achieving a reduction in the state of good repair backlog for transit agencies at the local and regional levels
<b>Evaluation of Outreach to Underserved Communities in the Hazardous Materials Emergency Preparedness Grant Program</b>	Equity	Pipeline and Hazardous Materials Safety Administration (PHMSA)			Process	Evaluate the degree to which outreach to underserved communities through PHMSA’s Hazardous Materials Emergency Preparedness Grant is effective at increasing the equitable allocation of grant resources
<b>Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Discretionary Grant Program</b>	Climate & Sustainability	Federal Highway Administration (FHWA)	X	X	Outcome	Evaluate the degree to which a representative sample of PROTECT projects increase surface transportation’s resilience to natural hazards and climate change

## The FY 2025 Evaluation Plan Includes Seven Significant New Evidence-Building Activities

Evidence-Building Activity	Strategic Goal	Lead	Description
<b>Train Derailments that Include Hazardous Materials</b>	Safety	Pipeline and Hazardous Materials Safety Administration (PHMSA)	Integrate new data to uncover factors in train derailments that increases the risk of a HAZMAT incident
<b>Transportation Cost Burden Estimation</b>	Equity	Office of the Assistant Secretary for Research and Technology (OST-R)	Develop estimates of transportation cost burden at the local level and analyze the feasibility of collecting new data
<b>National Transit Database Geospatial Data Collection</b>	Equity	Federal Transit Administration (FTA)	Data collection and analysis on access to fixed route and demand response transit that will enable the development of performance measures that track disadvantaged communities' access to transit.
<b>Sustainable Aviation Fuel (SAF)</b>	Climate & Sustainability	Federal Aviation Administration (FAA)	Research to support increasing SAF blend, raising production levels, and measuring environmental impact
<b>Zero-Emissions Rail Yards</b>	Climate & Sustainability, Equity	Federal Railroad Administration (FRA)	Research rail yards' public health impacts, then partner with a yard to pilot the establishment of a Zero-Emissions Rail Yard
<b>Advanced Air Mobility (AAM) Ground Infrastructure</b>	Transformation	FAA	Research to inform development of design standards for electric Vertical Takeoff and Landing (eVTOL) aircraft vertiports for safe and reliable takeoff, landing, and charging
<b>Mobility NeXt Program Demonstrations</b>	Transformation	FTA	Assess results of transit mobility demonstration projects to test and advance traveler tools, novel practices, and mobility strategies

### The FY 2025 Evaluation Plan is divided into four sections:

- The **Background section** explains the legal basis for the Evaluation Plan and provides context on the Department's structure and process for developing this Plan.
- The **Planned FY 2025 Program Evaluations section** contains a roadmap for four significant new program evaluation activities that the Department will carry out in FY 2025.
- The **FY 2025 Planned Significant Evidence-Building Activities section** highlights seven additional significant evidence-building activities that the Department will undertake in FY 2025.
- The **FY 2023 and FY 2024 Evaluation Plans Update section** provides updates on the three evaluations in the [DOT FY 2023 Evaluation Plan](#) and the 17 evaluations in the [DOT FY 2024 Evaluation Plan](#).

# Background

## U.S. Department of Transportation

Through its work to improve the safety and performance of our multi-modal transportation system, the U.S. Department of Transportation touches the lives of every person in the United States and its territories. The Department's networks and systems include about 4.2 million miles of public roads, 110,000 miles of major railroads, 25,000 miles of commercially navigable waterways, 1.8 million miles of natural gas and oil pipelines, 5,200 public-use airports, and 2,200 transit agencies.<sup>1</sup>

Congress established DOT in 1967, consolidating 31 transportation-related agencies and functions. Approximately 55,000 DOT employees continue to bring innovations and integrity to the work of improving the safety and performance of our multi-modal transportation system. Leadership of the Department is provided by the Secretary of Transportation, who is the principal advisor to the President in all matters relating to Federal transportation programs. The Office of the Secretary oversees nine operating administrations, each with its own management and organizational structure.



Federal Aviation Administration (FAA)



Federal Highway Administration (FHWA)



Federal Motor Carrier Safety Administration (FMCSA)



Federal Railroad Administration (FRA)



Federal Transit Administration (FTA)



Great Lakes St. Lawrence Seaway Development



Maritime Administration (MARAD)



National Highway Traffic Safety Administration



Pipeline and Hazardous Material Safety

<sup>1</sup> Hu, Patricia et al. (2022). Transportation Statistics Annual Report 2022. United States Department of Transportation. Bureau of Transportation Statistics. <https://doi.org/10.21949/1528354>.

## Evidence Act's Requirements

DOT entered a new paradigm of evidence building with the passage of the *Foundations for Evidence-Based Policymaking Act of 2018*, also known as the Evidence Act ([Public Law 115-435](#)). This law redefined how DOT and other Federal agencies build and

use data, statistics, and evidence to support strategic decision-making. The Evidence Act emphasizes leadership, collaboration, systemic planning, continuous learning, and transparency.

### Updating the DOT Learning Agenda

In 2024 we are updating the Learning Agenda through the development of the *Learning Agenda Supplement: FY 2024-2026*. We welcome the public's input on this important and needed update. Members of the public are invited to submit their comments through April 13, 2024 at <https://www.regulations.gov/document/DOT-OST-2024-0005-0001>.

### Deliverables Required Under the Evidence Act and Related Guidance

	Annual Evaluation Plan	Learning Agenda	Capacity Assessment	Evaluation Policy
<b>Overview</b>	Describes the significant evaluation activities the agency plans to conduct during the FY following the year in which the Plan is submitted	Systematic plan for building evidence to identify and address policy questions relevant to agency's programs, policies, and regulations	Assessment of coverage, quality, methods, effectiveness, and independence of agency's statistics, evaluation, research, and analysis	Defines and describes principles to guide agency's activities throughout the evaluation lifecycle
<b>Statute</b>	5 U.S.C. 312(b)	5 U.S.C. 312(a)	5 U.S.C. 306(a)(9)	5 U.S.C. 313(d)(3)
<b>Timeframe</b>	1 year	4 years	4 years	perennial
<b>DOT Publications</b>	<a href="#">FY23 Evaluation Plan</a> <a href="#">FY24 Evaluation Plan</a>	<a href="#">Learning Agenda</a>	<a href="#">Capacity Assessment</a>	<a href="#">Evaluation Framework</a>

Title I of the Evidence Act and the Office of Management and Budget (OMB) Memoranda [M-19-23](#), [M-20-12](#), and [M-21-27](#) require the 24 federal agencies specified in the *Chief Financial Officers Act of 1990* ([Public Law 101-576](#)) to develop four distinct but complementary documents: an Annual Evaluation Plan; a Learning Agenda; a Capacity Assessment for Statistics, Evaluations, Research, and Analysis; and an Evaluation Policy (see table above). While the Annual Evaluation Plan describes the significant evaluation activities the agency plans to conduct in the following fiscal year, the Learning Agenda offers a longer-term strategy for identifying priority questions and carrying out related evidence-building activities. The Capacity Assessment analyzes the extent

to which the agency has the capacity to undertake the activities outlined in the Learning Agenda and other evidence-building activities. The Evaluation Policy defines and describes the principles that guide the agency's activities throughout the evaluation lifecycle.

The Department previously published a [Learning Agenda](#), a [Capacity Assessment](#), and an [Evaluation Framework](#) in March 2022 in conjunction with the Department's [FY 2022-2026 Strategic Plan](#). The Department also previously published the DOT [FY 2023 Evaluation Plan](#) and the DOT [FY 2024 Evaluation Plan](#) in 2022 and 2023, respectively.

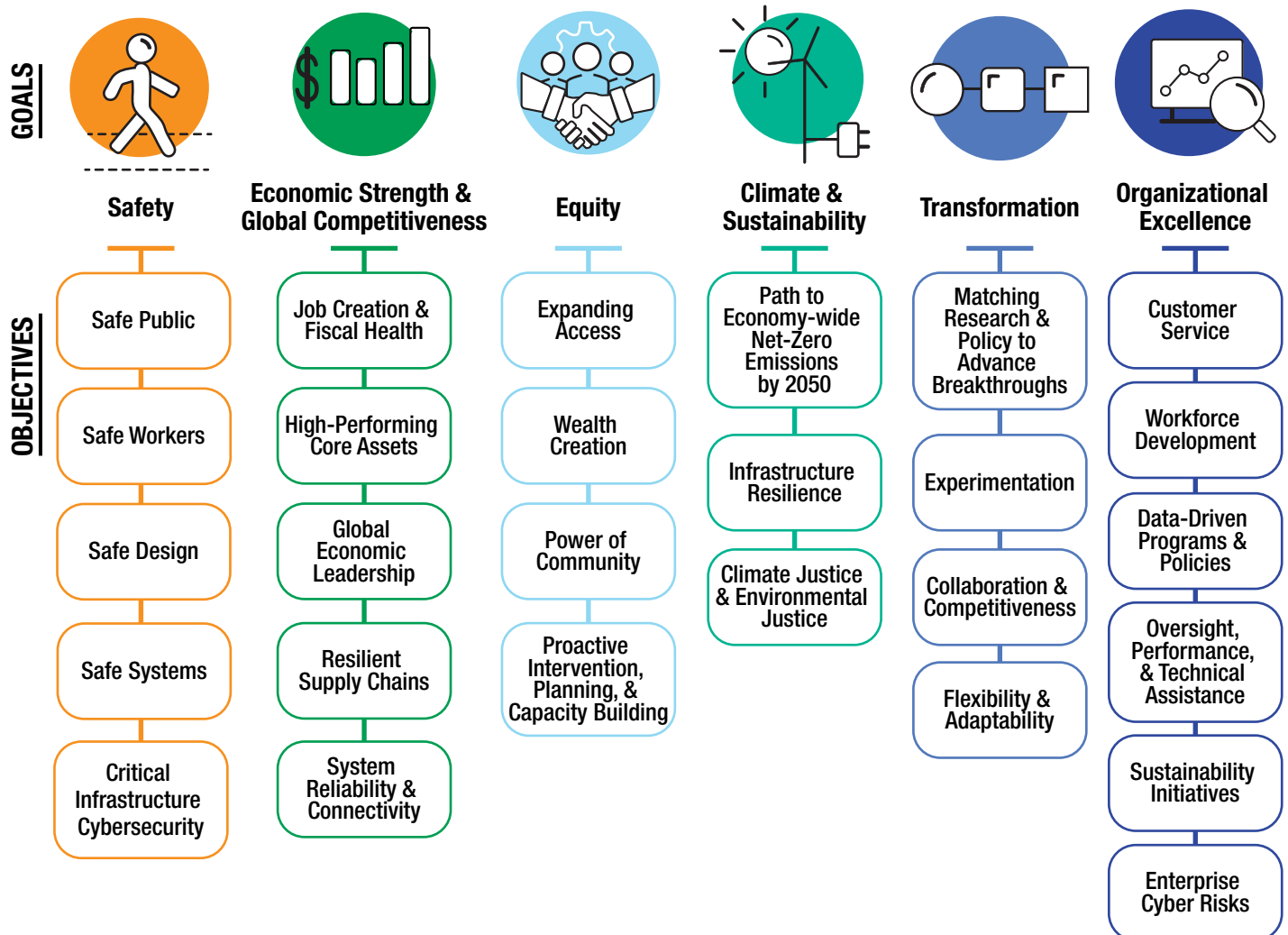
## Alignment with DOT's Mission and Strategic Plan

The DOT FY 2025 Evaluation Plan advances DOT's mission "to deliver the world's leading transportation system, serving the American people and economy through the safe, efficient, sustainable, and equitable movement of people and goods" by creating a systematic, transparent, and question-driven plan for developing evidence and carrying out analysis that improves decision-making for federal transportation programs and policy development.

The [FY 2022-2026 DOT Strategic Plan](#) provides the blueprint for advancing the Department's mission, as well as the framework for the Annual Evaluation Plan.

It describes the long-term goals that the Department aims to achieve, the actions that we will take to realize those goals, and how the Department will most effectively use its resources. It also identifies six Strategic Goals, which are outcome-oriented, long-term goals for the Department's major functions and operations. Each Strategic Goal has associated Strategic Objectives, which express more specifically the impact DOT is trying to achieve. The Department also established numerous performance goals that define what success looks like for each Strategic Objective. The graphic below presents DOT's Strategic Goals and Strategic Objectives for FY 2022-2026.

### DOT Strategic Goals and Strategic Objectives





## Development of the FY 2025 Evaluation Plan

The newly established Office of Performance, Evaluation, and Enterprise Risk (PEER), within the Office of the Secretary's Office of the Chief Financial Officer and Assistant Secretary for Budget and Programs (OST-B), is the lead office for coordinating the development of DOT's Annual Evaluation Plan. The Department's [Evaluation Officer](#) leads PEER. DOT's nine operating administrations are responsible for implementing DOT's Annual Evaluation Plan and Learning Agenda activities.

PEER engaged a variety of stakeholders across the Department to develop the DOT FY 2025 Evaluation Plan. PEER closely collaborated with the operating administrations to develop plans for program evaluations and priority evidence-building activities as part of the FY 2025 budget formulation process and coordinated the development with performance management, enterprise risk management. PEER also sought input from the Department's [Chief Data Officer, Statistical Official](#), and policy and subject matter experts.

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## DOT's Definition of "Significant" Evaluations and Evidence-Building Activities

Agencies may plan on undertaking numerous evaluations and evidence-building activities each year, but the Annual Evaluation Plan only highlights a small subset that DOT determines to be the most "significant." As discussed in [OMB Memorandum M-19-23](#) and the [GSA's Evidence Act Toolkit](#), in developing a definition of "significance," Departments may consider a variety of factors. DOT defines significance to include important Administration priorities; Congressional mandates in relationship to the recently passed Bipartisan Infrastructure Law; the size of the program; and its importance to the Department's mission and strategic goals, including safety, economic strength and global competitiveness, equity, climate and sustainability, and organizational excellence.

After considering possible program evaluations planned by the operating administrations for inclusion in the FY 2025 Evaluation Plan, PEER determined four program evaluations meet the Department's definition of significance. The four planned evaluations span four operating administrations (Federal Highway Administration, Federal Transit Administration, Federal Motor Carriers Safety Administration, and Pipelines and Hazardous Materials Safety Administration) and advance four Strategic Goals (Safety, Economic Strength and Global Competitiveness, Equity, and Climate and Sustainability). All significant evaluations meet the definition of a program evaluation as stated in the Evidence Act and have proposed funding in the FY 2025 budget request.

PEER also determined that seven other evidence-building activities that DOT plans for FY 2025 meet the definition of significance, but not the definition of program evaluation. These activities may lay the groundwork for future program evaluations. The seven significant evidence-building activities will be carried out by four

operating administrations (Pipelines and Hazardous Materials Safety Administration, Federal Aviation Administration, Federal Railroad Administration, and Federal Transit Administration) and the Office of the Assistant Secretary for Research and Technology; and they further four Strategic Goals (Safety, Equity, Climate and Sustainability, and Transformation).

The passage of the Bipartisan Infrastructure Law or BIL ([Public Law No. 117-58](#)) presents new opportunities to evaluate the effectiveness of programs and activities. The FY 2024 Evaluation Plan included evaluations of the [Airport Terminals Program](#), the [Reconnecting Communities Pilot, Consolidated Rail Infrastructure and Safety Improvements \(CRISI\) Program](#), the [Northeast Corridor \(NEC\) Project Inventory](#), the [Transit-Oriented Development Pilot Program](#), and the [Natural Gas Distribution Infrastructure Safety and Modernization Grant Program](#). The FY 2025 Evaluation Plan builds on this work by including planned evaluations of two other Bipartisan Infrastructure Law-supported programs: FHWA's [Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation \(PROTECT\) Grant Program](#) and FTA's [State of Good Repair Formula Grants Program](#). DOT intends to evaluate more BIL programs in the coming fiscal years as the Department develops its maturity in evaluation through its Evaluation Community of Practice, workshops, and peer-to-peer learning. DOT will continue to update its program evaluation and other evidence-building activities as it progresses in Bipartisan Infrastructure Law implementation and will continue to align activities in support of the Department's [Strategic Plan](#) and [Learning Agenda](#).

## Program Evaluations & Evidence-Building Activities

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Program evaluation and evidence-building activities support achievement of a program’s goals and associated key agency priorities. Program evaluation and evidence building are critical and important tools to help inform strategic decision-making, formulate budgets, and assess performance. Evidence-building activities, as applied in the context of the Federal Performance Framework, are a broad set of activities that agencies undertake to expand the available body of facts or information indicating whether a belief or proposition is true or valid. Building evidence can take on many different forms, including policy analysis such as cost-benefit analysis, foundational fact finding such as descriptive studies, and performance measurement such as development or refinement of metrics. Program evaluation is also a type of evidence-building activity ([OMB Memorandum M-21-27](#)).

Per the *Foundations for Evidence-Based Policymaking Act of 2018*, an evaluation is “an assessment using systematic data collection and analysis of one or more programs, policies, and organizations intended to assess their effectiveness and efficiency.” It can focus on a program, policy, or organizational level. It can also look beyond this focus to include an assessment of projects or interventions within a program. An evaluation may examine the implementation or institution of a program, policy, organization, or strategy; or it may examine its effectiveness or impact, or factors that relate to variability in its effectiveness. An evaluation may also examine questions related to understanding a program’s contextual factors or effectively target an intervention at specific populations or groups.

# Planned FY 2025 Program Evaluations

The FY 2025 Evaluation Plan introduces four significant evaluations the Department has requested to fund in FY 2025:

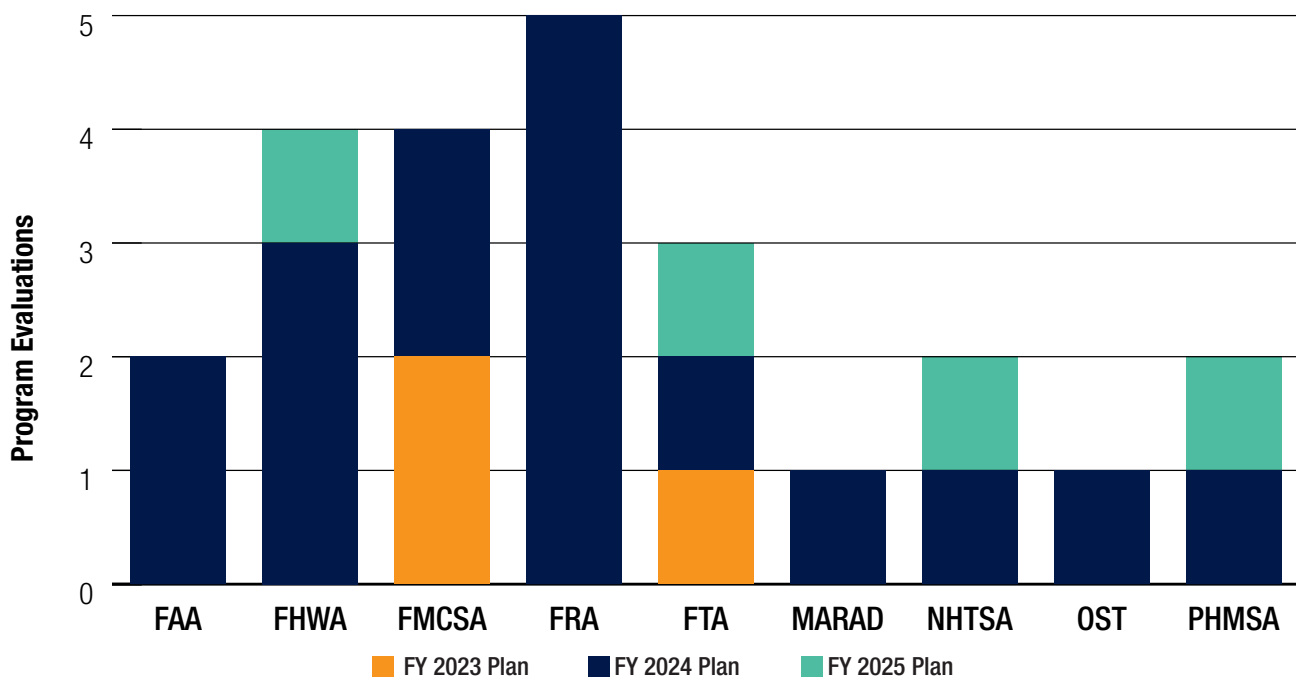
- National Highway Traffic Safety Administration (NHTSA) is proposing an evaluation of its “Click It Or Ticket” campaign that includes an outcome evaluation of seat belt use.
- Federal Transit Administration (FTA) is proposing an evaluation of the State of Good Repair Formula Grants program that includes an outcome evaluation of the change in the repair backlog among recipient transit agencies.
- Pipeline and Hazardous Materials Safety Administration (PHMSA) is proposing to conduct a process evaluation of the Hazardous Materials Emergency Preparedness Grant program to determine if its outreach to underserved communities is effective at increasing the equitable allocation of grant resources.
- Federal Highway Administration (FHWA) plans to conduct an outcome evaluation of the Promoting Resilient Operations for Transformative,

Efficient, and Cost-Saving Transportation (PROTECT) discretionary grant program measuring the degree to which a representative sample of projects increase surface transportation’s resilience to natural hazards and climate change.

This section presents roadmaps for each of the FY 2025 program evaluations. It shows each evaluation’s alignment with key agency priorities, including the [FY 2022-2026 Strategic Plan](#), [FY 2025 Annual Performance Plan and FY 2023 Report](#), the [Learning Agenda](#), the [National Roadway Safety Strategy](#), the [Climate Action Plan for Resilience](#), the [U.S. National Blueprint for Transportation Decarbonization](#), and the [Equity Action Plan](#). The section also provides background information, key evaluation questions, information needs, proposed methods, anticipated challenges, and the planned dissemination strategy.

The figure below shows how the new program evaluations fit within DOT’s existing evaluation commitments from the [DOT FY 2023](#) and [FY 2024 Evaluation Plans](#). For further details, also see the section of this report: **FY 2023 and FY 2024 Evaluation Plans Update**.

**Significant Program Evaluations from the DOT FY 2023, FY 2024, and FY 2025 Evaluation Plans**



**Safety: Click It Or Ticket Evaluation**

<p align="center"><b>Operating Administration</b></p>	<p>National Highway Traffic Safety Administration (NHTSA)</p>
<p align="center"><b>DOT Strategic Plan Alignment</b></p>	<p>Strategic Goal: Safety, Strategic Objective: Safe Public</p>
<p align="center"><b>Other Guiding Documents</b></p>	<p><a href="#">National Roadway Safety Strategy</a> (Strategy Objective: Safer People, Action: Address risky driving behavior through research, education, technical assistance, and engagement with the behavioral and public health communities.) <a href="#">Countermeasures That Work, 11th Edition</a> (esp. Chapter 3, Seat Belts and Child Restraints). <a href="#">FY 2025 Annual Performance Plan and FY 2023 Annual Performance Report</a>:</p> <ul style="list-style-type: none"> <li>• Safe Public Performance Goal 1.1.9: Reduce the Number of Vehicle Occupants Ejected from Passenger Vehicles per 100 Emergency Medical Services Motor Vehicle Crash Dispatches.</li> </ul>
<p align="center"><b>Background</b></p>	<p>Seat belts <a href="#">reduce the risk of fatal injury</a> to front-seat passenger car occupants by 45% and to light-truck (such as pickup trucks, sports utility vehicles, and minivans) occupants by 60%. While seat belts are a lifesaving countermeasure, they only work when used. In 2022, <a href="#">91.6% of front seat occupants</a> observed during the daytime for the National Occupant Protection Use Survey (NOPUS) were belted; however, among those who were killed for whom seat belt use was known, <a href="#">only half were belted</a>. Further, seat belt use was observed to be lower among Black occupants (82.6%) than White occupants (92.6%) and members of other races (92.1%). <a href="#">Recent analyses</a> of people who were fatally injured in crashes showed that American Indian/Alaska Native people had the highest percentage of unrestrained passenger vehicle occupants killed (65%) followed by Black or African American people (61%). For these reasons, it is important for the Department to continue working to increase seat belt use.</p>
<p align="center"><b>Evaluation Rationale</b></p>	<p>23 U.S. Code § 404 requires NHTSA to conduct high visibility enforcement (HVE) campaigns that include paid media every year. One of these required campaigns is for occupant protection, which NHTSA executes as the May/June “Click It Or Ticket” (CIOT) campaign. (View the 2023 paid media advertisement <a href="#">here</a>.) HVE operates under the principle of general deterrence, in which many individuals share the expectation that a behavioral transgression (in this case, not wearing a seat belt) is likely to result in swift and sure repercussions (in this case, a citation). HVE generally uses pre- and post-enforcement communications in addition to the paid advertising during the time of focused enforcement activity to enhance the visibility of the efforts and thus the deterrent effect. While <a href="#">prior evaluations</a> of seat belt HVE have shown a 3.5% increase in seat belt use, these evaluations date from the early 2000s, and there may be ceiling effects or other methodological limitations to these previous evaluations. The national seat belt use rate as measured in the <a href="#">National Occupant Protection Use Survey (NOPUS)</a> has consistently been above 90% for daytime front occupants since 2019, though that rate is lower for nighttime front occupants, rear seat occupants, pickup truck occupants, and occupants in rural areas. It is possible that refinements to the CIOT model can be made that raise belt use among occupants that may be at increased risk of being killed or injured in crashes while unbelted. Understanding the current effectiveness of CIOT is important for NHTSA to make improvements that can change behavior and save lives.</p> <p>This evaluation builds on lessons learned from NHTSA’s evaluation of the National Impaired Driving Paid Media Campaign, which was introduced in the <a href="#">FY 2024 Evaluation Plan</a>. The findings from this evaluation and the methods could help inform the design and implementation of evaluations of similar paid media campaigns and HVE efforts in the future.</p>

<b>Dissemination and Planned Use of Results</b>	<p>NHTSA's contractor will summarize the findings of this evaluation in a research report, and NHTSA will post the report in the National Transportation Library (NTL). NHTSA will also post the data in the NTL. NHTSA will use the research findings to inform future public campaigns and will share the findings widely with stakeholder organizations.</p>
<b>Timeframe and Logistics</b>	<p>FY 2025 – FY 2027</p> <p>NHTSA plans to award the contract for this study in FY 2025 and conduct observational surveys in FY 2026. NHTSA also expects to conduct awareness surveys, which require Paperwork Reduction Act (PRA) clearance, in FY 2026. NHTSA plans to complete all reporting by FY 2027.</p>
<b>Evaluation Questions</b>	<ul style="list-style-type: none"> <li>• Does CIOT affect seat belt use? If so, how much, in which direction, and for how long?</li> <li>• Do the public's perceptions, awareness of, and intended behaviors change as a result of the CIOT campaign? If so, how much, in which direction, and for how long?</li> <li>• To what extent does the amount of enforcement influence seat belt use during the CIOT campaign?</li> <li>• Do responses to CIOT's enforcement and messaging vary across different locations and demographic characteristics, including age, gender, race, and ethnicity?</li> </ul>
<b>Design and Methods</b>	<p>Observational surveys at selected sites will be conducted following NOPUS methodology. These surveys will be conducted before, during, and after the CIOT campaign with sufficient frequency and duration to determine if and to what extent seat belt use tracks with CIOT-related enforcement and messaging activities. NHTSA will determine the number and timing of post-campaign observations for estimating the duration of any CIOT-related effects after a review of previous seat belt program evaluations. NHTSA will use a representative sampling of roadside observation locations within selected sites.</p> <p>NHTSA will also seek documentation of levels and types of law enforcement activities related to traffic enforcement, with a particular focus on seat belt enforcement, including stop and citation data, number of participating law enforcement agencies, and hours contributed. NHTSA will analyze documentation of law enforcement activities and observational survey data to measure the extent to which enforcement “dosing” is associated with changes in seat belt use.</p> <p>NHTSA plans to conduct a nationally representative survey of attitudes and behaviors related to belt use and awareness of the CIOT campaign. Survey waves will occur prior to and following the CIOT campaign with the aim of measuring differences between pre- and post-campaign attitudes and intended behaviors. Participants will self-report their demographic characteristics. NHTSA will determine target sample sizes based on a detailed power analysis using previous seat belt use survey and observational data.</p>

## Anticipated Challenges

NHTSA anticipates several challenges in carrying out this evaluation. First, achieving economies of scale across the different research questions may be difficult and may require the research team to narrow the scope in ways that can't be predicted at this time. One of the ways that NHTSA aims to manage this is through coordination with State NOPUS data collection efforts. This proposed coordination is not guaranteed.

Controlling the timing of the survey waves is within NHTSA's control; however, linking the timing to the HVE campaign will need to be tightly monitored. Obtaining appropriate PRA clearance in a timely manner remains a constant concern for survey data collection. Delays in this could cause a one-year delay because of the need to launch the survey in the weeks leading up to the start of the HVE campaign.

NHTSA expects that obtaining cooperation and participation from multiple law enforcement agencies may be difficult. Since before 2020, traffic law enforcement has been deprioritized in many departments. Identifying an organization that is willing to be subject of an evaluation adds a layer of difficulty. Finally, NHTSA expects that obtaining adequate sample sizes of various demographic subpopulations at various time points to draw conclusions may not be easy, depending on the survey method used.

## Economic Strength & Global Competitiveness: State of Good Repair Formula Grants

<b>Operating Administration</b>	Federal Transit Administration (FTA)
<b>DOT Strategic Plan Alignment</b>	Strategic Goal: Economic Strength and Global Competitiveness, Strategic Objective: System Reliability & Connectivity, and High-Performing Core Assets
<b>Other Strategic Alignment</b>	Strategic Goal: Safety, Strategic Objective: Safe Public; Strategic Goal: Climate & Sustainability, Strategic Objective: Infrastructure Resilience
<b>Other Guiding Documents</b>	<p><a href="#">FY 2025 Annual Performance Plan and FY 2023 Annual Performance Report</a>. While there are several FTA programs and circumstances in the transit industry that impact the State of Good Repair-related metrics at the national level, the program’s intended effects align with the following performance goals:</p> <ul style="list-style-type: none"> <li>• High-Performing Core Assets Performance Goal 2.2.11 Reduce the State of Good Repair Backlog for Transit Revenue Vehicles by 25% by 2030</li> <li>• High-Performing Core Assets Performance Goal 2.2.12 Reduce the State of Good Repair Backlog for Transit Buildings and Facilities by at Least 50% by 2030</li> </ul>
<b>Background</b>	<p>The State of Good Repair Formula Grants Program (49 U.S.C. 5337) was first authorized in its current form in FY 2012 to help transit agencies achieve a state of good repair. The program receives funding through the Mass Transit Account of the Highway Trust Fund and advance appropriations through BIL.</p> <p>The State of Good Repair program provides capital assistance for existing rail, ferry, and bus rapid transit systems, among others, to help transit agencies maintain assets. For transit assets, including revenue vehicles, state of good repair means the condition when the asset can safely operate at a full level of performance. In FY 2023, over \$4.1 billion was allocated to 88 urbanized areas, supporting more than 90 funding recipients. Eligible transit agencies may use funding to replace or rehabilitate assets or to develop Transit Asset Management plans.</p> <p>Recipients report to the <a href="#">National Transit Database (NTD)</a> on service, capital expenditures, vehicle age, asset condition, and service reliability. Recipients also report to the <a href="#">Transit Award Management System (TrAMS)</a> on progress in managing their grants.</p>

<p><b>Evaluation Rationale</b></p>	<p>This evaluation will be the first for the State of Good Repair program. The program will undergo a multi-site evaluation across FTA regional offices. The unit of analysis will be the regional office, providing secondary data about grantee activities using document review and interviews. These regional data points will be correlated with secondary data from the NTD and TrAMS to illustrate relationships between regional profiles (e.g., location, funding levels, years in service) and grantee progress in achieving transit projects. This evaluation will establish a baseline for FTA regional State of Good Repair among 5337 recipients to inform future evaluations.</p> <p>The evaluation will leverage knowledge from other evaluations, such as the multi-year <a href="#">Transit Asset Management program evaluation</a> (see <a href="#">FY 2023 Evaluation Plan</a>). It also supports objectives from the Organizational Health and Organizational Performance (<a href="#">M-23-15</a>) Assessment, specifically “Building on Existing Government-Wide and Agency-Specific Initiatives, Processes, and Routines.” FTA Performance Management routinely reports on national data for Strategic Objective 2.2: High-Performing Core Assets. This program evaluation will triangulate and compare data from these sources at the recipient level.</p> <p><i>Inputs, Outputs, Outcomes.</i> The State of Good Repair formula program evaluation will build on a range of inputs and outputs reported through TrAMS, including the amount of allocated funds obligated and dispersed and the number and types of replacement and rehabilitation activities planned and completed on a transit agency level. The evaluation will build on recipient metrics to produce FTA regional profiles of planned and completed activities over multiple program years. The evaluation will incorporate a time series approach to focus in on State of Good Repair outcomes as defined through regionally reportable backlog, safety, reliability, and system performance metrics. In FY 2024, FTA’s Office of Budget and Policy will collaborate with State of Good Repair program staff and stakeholders to build a logic model and develop subparts to the evaluation questions listed below that reflect the comprehensive program logic. A logic model provides a theory of change for how the program achieves outcomes, and the evaluation will test whether the program activities achieve those outcomes. The evaluation team will review the data after collection for usability in the planned analysis, which may impact the data analytic plan.</p>
<p><b>Dissemination and Planned Use of Results</b></p>	<p>FTA will submit an evaluation report to the State of Good Repair formula program stakeholders to promote identifying opportunities to strengthen activities through technical assistance or grant requirements, sustain current outcomes, and optimize the achievement of future outcomes. State of Good Repair formula program staff and stakeholders will use evaluation results to inform DOT and FTA stakeholders on the degree to which State of Good Repair formula program appropriations are assisting with reducing the state of good repair backlog at the local and regional levels. The results will inform program staff regarding areas for additional technical assistance in overcoming barriers and challenges to creating and implementing Transit Asset Management plans, along with State of Good Repair projects.</p>
<p><b>Timeframe and Logistics</b></p>	<p>FY 2024 – FY 2027</p> <p>In FY 2024, FTA will finalize a comprehensive evaluation plan to support the development of a contract vehicle to execute the multi-year evaluation described here. The evaluation will be funded by available FTA oversight funds.</p>



<p><b>Evaluation Questions</b></p>	<p>The overarching questions to be addressed include:</p> <ul style="list-style-type: none"> <li>• Which types of program-funded capital projects did recipients pursue by region?</li> <li>• To what degree did implementation of capital projects reduce state of good repair backlog at the regional level?</li> <li>• What were the barriers and facilitators to implementing capital projects and/or transit asset management plans?</li> <li>• To what degree was capital project completion associated with improved safety, reliability of service, and system performance?</li> </ul>
<p><b>Design and Methods</b></p>	<p>This multi-site evaluation will incorporate a time series design focusing on State of Good Repair outcomes among local and regional formula fund recipients. The process component of the evaluation will include data collection involving key informant interviews, documents review, and use of implementation-related transportation statistics from transit programs. The outcomes portion of the evaluation will build upon the process evaluation to assess how differences in program implementation between transit agencies are associated with State of Good Repair outcomes, including the repair backlog, safety, reliability, and system performance.</p>
<p><b>Data Sources</b></p>	<p>The data sources that this evaluation use will include:</p> <ul style="list-style-type: none"> <li>• 5337 formula recipients (Quantitative and Qualitative or Mixed)</li> <li>• TrAMS 5337 formula data (Mixed)</li> <li>• Regional Documents Review (Project, Budget, Performance Documents) (Mixed)</li> <li>• Interview Data: Regional Office staff (Qualitative)</li> <li>• 5337 formula Executive Summaries (Qualitative)</li> <li>• Regional Office staff (Qualitative)</li> <li>• National Transit Database (NTD) (Mixed)</li> </ul>
<p><b>Anticipated Challenges</b></p>	<p>FTA anticipates several challenges in carrying out this evaluation.</p> <p>The classification of capital projects may not be clear-cut depending on how applicants described them in grant forms or project descriptions. Their descriptions will impact how this variable is ultimately defined for the evaluation and a customized classification with sub-levels may better support data analysis.</p> <p>FTA does not currently analyze regional state of good repair data to show trends based on State of Good Repair formula recipient activity. Therefore, it may be difficult to show substantive change in state of good repair from urbanized areas (UZA) allocations for this evaluation’s time period.</p> <p>Barriers and facilitators may vary by type of project. Regional staff answers may be broad (supply chain impacts on revenue fleets; limited number of manufacturers; scarce personnel resources). The interview script should offer prompts for focusing in on barriers per project (working on track replacement versus power equipment).</p> <p>Transit agencies have customized metrics for indicators, such as system performance or reliability of service. The operational definitions can vary by transit agencies, types of services, and types of vehicles, and all have unique, acceptable windows of on-time performance. A challenge will be to standardize these definitions to the extent possible across contexts.</p>

## Equity: Evaluation of Outreach to Underserved Communities in the Hazardous Materials Emergency Preparedness Grant

<b>Operating Administration</b>	Pipeline and Hazardous Materials Safety Administration (PHMSA)
<b>DOT Strategic Plan Alignment</b>	Strategic Goal: Equity, Strategic Objective: Wealth Creation
<b>Other Guiding Documents</b>	DOT <a href="#">Equity Action Plan</a> and the <a href="#">FY 2025 Annual Performance Plan and FY 2023 Annual Performance Report</a> . This evaluation aligns with the performance goal: <ul style="list-style-type: none"> <li>• Power of Community Performance Goal 3.3.2 Increase the Percentage of Community Outreach Activities Directed Toward Underserved Communities to Increase Hazmat Transportation Awareness, Preparedness, and Response</li> </ul>
<b>Background</b>	<p>The <a href="#">Hazardous Materials Emergency Preparedness (HMEP) Grants</a> provide federal financial and technical assistance to states, territories, and federally recognized tribes to develop, improve, and carry out emergency plans. The Hazardous Materials Transportation Uniform Safety Act established the Hazardous Materials Emergency Preparedness grant program in 1990, and the first grants were issued in 1993. The HMEP grant program is administered by PHMSA's <a href="#">Office of Hazardous Materials Safety (OHMS)</a>.</p> <p>The HMEP grant program allows grantees the flexibility to implement training and planning programs that address differing needs for each location based on demographics, emergency response capabilities, commodity flow studies, and hazard analysis. PHMSA distributes grants among states through a formula that factors in population density, the frequency and costs associated with serious and non-serious incidents, and mode(s) of transportation involved in previous hazardous materials accidents/incidents. Grants are awarded to states that provide funding to localities and first responders most in need of planning and training. The funding provides allocations for states to ensure their communities, including underserved and low-income areas, are informed, prepared, and trained to effectively respond to hazardous materials transportation incidents. Annually, HMEP grants fund training for over 70,000 emergency responders nationwide. Additionally, it enables states and local communities to carry out preparedness activities to include development of emergency response plans, hazardous materials exercises, and commodity flow studies. In FY 2023, PHMSA issued \$22 million in HMEP grant funds to states, territories, and tribes.</p> <p>An important component of the OHMS mission is to promote hazardous materials safety through education, safety awareness, and outreach, including activities such as community meetings, workshops, webinars, and emergency response events. The goal of this outreach is to build awareness of PHMSA resources, such as grants and other safety-related information, to ensure communities are prepared and trained to respond to hazardous materials incidents and equitable distribution and utilization of grant funding is achieved. In support of DOT's Equity strategic goal, PHMSA set a new performance goal in FY 2022 to increase the percentage of community outreach activities that OHMS directs toward underserved communities to increase hazardous materials transportation awareness, preparedness, and response. OHMS's outreach to underserved communities went from 0% in Q1 to 26% in Q4 of FY 2022. In FY 2023, the Office exceeded its 40% target and hit 42%.<sup>2</sup></p> <p>PHMSA's OHMS will evaluate whether outreach to underserved communities has been effective at increasing the equitable allocation of HMEP grant resources. PHMSA will use the results of this evaluation to assess the effectiveness of OHMS outreach activities and inform its grant outreach strategies to help advance DOT's Strategic Goal of Equity and its Strategic Objective 3.3: Power of Community: "Empower communities through innovative public engagement with diverse stakeholders and thought leaders to foster exchange and ownership."</p>

<p><b>Evaluation Rationale</b></p>	<p>An important component of the OHMS mission is to promote hazardous materials safety through education, safety awareness, and outreach, including activities such as community meetings, workshops, webinars, and emergency response events. The goal of this outreach is to build awareness of PHMSA resources, such as grants and other safety-related information, to ensure communities are prepared and trained to respond to hazardous materials incidents and equitable distribution and utilization of grant funding is achieved. In support of DOT’s Equity strategic goal, PHMSA set a new performance goal in FY 2022 to increase the percentage of community outreach activities that OHMS directs toward underserved communities to increase hazardous materials transportation awareness, preparedness, and response. OHMS’s outreach to underserved communities went from 0% in Q1 to 26% in Q4 of FY 2022. In FY 2023, the Office exceeded its 40% target and hit 42%.<sup>2</sup></p> <p>PHMSA’s OHMS will evaluate whether outreach to underserved communities has been effective at increasing the equitable allocation of HMEP grant resources. PHMSA will use the results of this evaluation to assess the effectiveness of OHMS outreach activities and inform its grant outreach strategies to help advance DOT’s Strategic Goal of Equity and its Strategic Objective 3.3: Power of Community: “Empower communities through innovative public engagement with diverse stakeholders and thought leaders to foster exchange and ownership.”</p>
<p><b>Dissemination and Planned Use of Results</b></p>	<p>PHMSA will update the NOFO’s frequently asked questions (FAQs) to reflect lessons learned from the evaluation and share results internally to inform future Notices of Funding Opportunity (NOFO) requirements. Grant teams will be trained on lessons learned to disseminate best practices identified from the evaluation.</p>
<p><b>Timeframe and Logistics</b></p>	<p>FY 2025 – TBD</p>
<p><b>Evaluation Questions</b></p>	<ul style="list-style-type: none"> <li>• To what extent did PHMSA’s outreach activities to underserved communities contribute to changes in public awareness of the HMEP Grant Program, as indicated by questions asked by potential applicants from or representing underserved communities?</li> <li>• To what extent did PHMSA’s outreach activities to underserved communities contribute to changes in HMEP Grant Program’s demand from underserved communities, as indicated by changes in the percentage or number of applications that denote underserved communities as a recipient of grant resources?</li> <li>• To what extent did PHMSA’s outreach activities to underserved communities contribute to more equitable allocation of HMEP grant resources?</li> </ul>
<p><b>Design and Methods</b></p>	<p>To answer these evaluation questions, PHMSA will obtain and review qualitative and quantitative data from HMEP grant applicants (i.e., states), members or representatives of underserved communities, and emergency response commissions and local emergency planning committees. Sources of data may include HMEP grant applications and awardees’ performance reports.</p>
<p><b>Anticipated Challenges</b></p>	<p>PHMSA anticipates two potential challenges. First, NOFO requirements may have to be revised to request specific information to conduct this evaluation; some grants are distributed through the states, which act as intermediaries, and would need to be trained and adjust some processes; in some cases, this may require a PRA/information collection change. Second, PHMSA will need to gain agreement from states to obtain this data or reporting.</p>

<sup>2</sup> See Objective 3.3 in [FY 2023 Performance Plan \(transportation.gov\)](#) and Goal 3.3.2 in [FY\\_2024\\_APP-FY\\_2022\\_APR\\_508\\_Compliant\\_5.10.pdf \(transportation.gov\)](#).

## Climate & Sustainability: PROTECT Discretionary Grant Program

<b>Operating Administration</b>	Federal Highway Administration (FHWA)
<b>DOT Strategic Plan Alignment</b>	Strategic Goal: Climate and Sustainability, Strategic Objective: Infrastructure Resilience
<b>Other Guiding Documents</b>	<p>The <a href="#">Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Discretionary Grant Program</a> funds projects that address the climate crisis by improving the resilience of the surface transportation system, including highways, public transportation, ports, and intercity passenger rail. The Bipartisan Infrastructure Law (BIL) requires FHWA to develop metrics to evaluate PROTECT Discretionary Grant project effectiveness and impact and to evaluate a representative sample of projects by applying those metrics (<a href="#">23 U.S.C. 176(f)</a>). This evaluation will fulfill this statutory obligation and help build the evidence needed to understand effective strategies for improving the resilience of U.S. infrastructure. BIL also requires public comment on proposed metrics in the Federal Register before adopting any metric. Per 23 U.S.C. 176(f), FHWA must establish procedures to collect metrics and monitor data from the representative sample of grant projects.</p>
<b>Background</b>	<p>PROTECT is a new FHWA grant program introduced by BIL; therefore, there are no previous studies or evaluations collected by FHWA for this program. Funding for the PROTECT Discretionary Grant Program includes \$1.4 billion in contract authority over five years (fiscal year (FY) 2022 – FY 2026) awarded through competitive grants to state departments of transportation (DOTs), metropolitan planning organizations, local governments, Indian tribes, territories (for at-risk coastal activities), and other eligible entities. The Consolidated Appropriations Acts of 2022 and 2023 added an additional \$400 million in budget authority. Staff for the program include approximately five FHWA Headquarters staff and support from the U.S. DOT Volpe National Transportation Center (up to 5% of PROTECT Discretionary Grant funds may be used for grant program administration). In April 2023, FHWA issued a NOFO for FY 2022 and 2023 for up to \$848 million. DOT expects to announce awards in FY 2024.</p> <p>There are four categories of funding under the PROTECT Discretionary Grant Program: Planning Grants, Resilience Improvement Grants, Community Resilience and Evacuation Route Grants, and At-Risk Coastal Infrastructure Grants. This program includes set-asides for rural communities and Indian Tribes.</p> <p>As stated in the NOFO, “By funding projects that improve resilience to natural hazards and climate change impacts, the Program aims to reduce damage and disruption to the transportation system, improve the safety of the traveling public, and improve equity by addressing the needs of disadvantaged communities that are often the most vulnerable to hazards.” Projects in the PROTECT Discretionary Grant Program have the potential to demonstrate innovation and contribute to the evidence base on effective practices appropriate for state and local governments in other parts of the country to consider replicating.</p> <p>FHWA has a wide body of resilience-related technical and training resources available to aid PROTECT applicants and grantees, which are summarized on a <a href="#">PROTECT Resources webpage</a>. These resources include resilience training courses hosted through the National Highway Institute, tools for conducting vulnerability assessments, and Hydraulic Engineering Circular reference manuals.</p>

<p><b>Evaluation Rationale</b></p>	<p>This evaluation responds to a Congressional requirement. BIL specifies that FHWA evaluate the “effectiveness and impacts” of projects supported by the PROTECT Discretionary Grant Program. The law stipulates that DOT’s “procedures for monitoring and evaluating projects” within the PROTECT Discretionary Grant Program should be based on a set of metrics that DOT develops with input from the public. Further, BIL requires that DOT “select a representative sample of projects to evaluate” (23 U.S.C. 176(f)). This evaluation will focus on program implementation and outcomes identified subsequent to final metrics determination, which may not be the same across all projects.</p>
<p><b>Dissemination and Planned Use of Results</b></p>	<p>Evaluation results will be briefed to the FHWA Leadership Team and then disseminated to agency staff as needed. In addition, the final report may be made publicly available on FHWA’s website and shared with external stakeholders upon request.</p>
<p><b>Timeframe and Logistics</b></p>	<p>FY 2024 – TBD</p> <p>This evaluation will be conducted by FHWA. FHWA expects to seek support from a contractor with demonstrated experience in program evaluation for Federal grant programs.</p>
<p><b>Evaluation Questions</b></p>	<p>To what extent are PROTECT projects effective in achieving their intended surface transportation resilience outcomes?</p> <ul style="list-style-type: none"> <li>• To what degree did construction projects that received PROTECT Discretionary Grant Program funding (including for activities in the Resilience Improvement, Community Resilience and Evacuation Routes, or At-Risk Coastal Infrastructure categories) increase surface-transportation resilience (as measured by metrics under development) to natural hazards, including climate change, sea level rise, flooding, extreme weather events, other natural disasters, or changing conditions?</li> <li>• What aspects of the sampled projects (including those that used innovative technologies, collaborative approaches, or natural infrastructure) were associated with improvements in surface transportation systems’ resilience to natural hazards?</li> <li>• What barriers/facilitators did grantees face when initiating construction projects that aimed to improve surface transportation systems’ resilience? What strategies helped them overcome barriers they faced?</li> </ul>

## Design and Methods

In addition to the approach outlined below, FHWA will develop detailed procedures for applying performance metrics to the representative sample pending public notice and comment of proposed PROTECT metrics.

**Information Needed:** Sample selection will require a standard set of descriptive information about the universe of awarded grants, which will be gathered from application data. Relevant characteristics may include applicant type, geographic region, whether the project is located in a disadvantaged or underserved community, the location's vulnerability to natural hazards and climate change, the type of natural hazards being addressed, the mode of surface transportation infrastructure, or the specific interventions planned and the associated outcomes.

For those projects selected for participation in the evaluation, additional information will be needed. The evaluation will work with grantees to obtain relevant information about planning and implementation activities and experiences. For outcome measures, the evaluation will rely on a mix of data sources, including grantee reporting and other available datasets for selected metrics. The evaluation will gather baseline, implementation, and post-implementation data from the sample of projects.

**Methodology:** The evaluation will collect descriptive implementation data for each of the sampled projects, integrating data provided by the grantees, other documentation, and additional data collection where needed. Outcomes will be measured at baseline, during, and after project implementation based on the metrics established by FHWA. Should additional outcome measures be identified as necessary for monitoring the performance and effectiveness of the project, they will be identified and tracked. FHWA expects to work with a contracted evaluator to identify a rigorous and appropriate approach for evaluating the associations between, or the contribution to, key outcomes and the activities carried out for the sampled projects. Details of the study design and analytic methodology will be finalized after identifying the projects to be evaluated.

**Data Sources:** Pending public notice and comment of PROTECT metrics. Considering data sources such as application data, benefit cost analyses, project plans, interviews, and grant agreements.

## Anticipated Challenges

FHWA anticipates several challenges in carrying out this evaluation.

It may not be feasible for FHWA to meet the rigorous scientific standards that are needed to complete an outcome evaluation. In particular, FHWA anticipates that it will be challenging to establish an appropriate control group of construction projects and build a sufficiently large sample size.

The evaluation will have to grapple with time horizons for its measurements that are long and unpredictable. It may take a decade or longer before all of the PROTECT-funded construction projects are completed. Study participation rates may drop over time due to changes in staff or project scope. Further, many of the natural hazards that these infrastructure projects are meant to build resilience against occur on an infrequent and unpredictable basis.

Infrastructure resilience is an evolving field of study. The state of practice for measuring outcomes related to surface transportation resilience is nascent. For instance, a 2021 National Academies of Sciences committee review of practice and research "did not identify a single metric, or even a small set of metrics, that can be readily developed and generally applied to improve the resilience of transportation systems."<sup>3</sup>

<sup>3</sup> National Academies of Sciences, Engineering, and Medicine. (2021). Investing in Transportation Resilience: A Framework for Informed Choices. The National Academies Press. <https://doi.org/10.17226/26292>

# FY 2025 Planned Significant Evidence-Building Activities

In addition to the significant program evaluations described above, the Department also expects to undertake many activities that support evidence-building needs related to its Strategic Goals and Objectives. The Department anticipates undertaking seven evidence-building activities in FY 2025 that meet its definition of significant, but not the definition of program evaluation:

- The Pipeline and Hazardous Materials Safety Administration (PHMSA) is planning to integrate new data to uncover factors in train derailments that increases the risk of a HAZMAT incident.
- Office of the Assistant Secretary for Research and Technology (OST-R) is planning to develop estimates of transportation cost burden at the local level and analyze the feasibility of collecting new data.
- Federal Transit Administration (FTA) is planning collect and analyze data on access to fixed route and demand response transit that will enable the development of performance measures that track disadvantaged communities' access to transit.
- Federal Aviation Administration (FAA) is planning research to support increasing sustainable aviation fuel blend, raising production levels, and measuring environmental impact.
- Federal Railroad Administration (FRA) is planning to research rail yards' public health impacts and then partner with a yard to pilot the establishment of a Zero-Emissions Rail Yard.
- FAA is planning research to inform development of design standards for electric Vertical Takeoff and Landing (eVTOL) aircraft vertiports for safe and reliable takeoff, landing, and charging.
- FTA is planning to assess results of transit mobility demonstration projects to test and advance traveler tools, novel practices, and mobility strategies.

These activities lay the groundwork for program evaluations to possibly be conducted in the future. The seven significant evidence-building activities will be carried out by four operating administrations and the Office of the Assistant Secretary for Research and Technology; and they further four Strategic Goals (Safety, Equity, Climate and Sustainability, and Transformation). These additional activities are not meant to be a comprehensive list of all important evidence-building activities across the Department, but rather they represent a sample of activities that advance important evidence-building questions.

This section presents roadmaps for each of the seven activities. It shows each evaluation's alignment with key agency priorities (including the [FY 2022-2026 Strategic Plan](#), [FY 2025 Annual Performance Plan and FY 2023 Report](#), the [Learning Agenda](#), the [National Roadway Safety Strategy](#), the [Climate Action Plan for Resilience](#), the [U.S. National Blueprint for Transportation Decarbonization](#), and the [Equity Action Plan](#)). The section also provides background information, evidence-building questions, and planned activities.

## Safety: Train Derailments and Related Hazardous Materials Incidents

<b>Operating Administration</b>	Pipeline and Hazardous Materials Safety Administration (PHMSA)
<b>DOT Strategic Plan Alignment</b>	Strategic Goal: Safety, Strategic Objective: Safe Design
<b>Background</b>	<p>This evidence-building activity relates to train derailments involving hazardous materials. Although OHMS has a detailed database of information that is publicly available for general statistics related to hazardous materials and transportation, or packaging related to hazardous materials transportation, the database does not currently include elements of train derailments which could lead to further insights.<sup>4</sup> PHMSA's <a href="#">Office of Hazardous Materials Safety (OHMS)</a> carries out a national safety program, including security matters, to protect against the risks to life and property inherent in the transportation of hazardous materials in commerce by all transportation modes. PHMSA's <a href="#">Data Operations Incident Statistics</a> includes a series of reports that provide statistical information on incidents by type, year, geographical location, and other factors. Data are updated nightly and can be downloaded into PDF, Excel, PowerPoint, etc. Incident data and summary statistics for current and previous years are provided as appropriate. The data are from the Hazardous Materials Incident Report Form 5800.1. The <a href="#">Hazmat Incident Report Search Tool</a> presents information from the Hazardous Materials Incident Report Form that can be shared with stakeholders about the size, frequency, and impacts of hazardous materials releases during transportation and improve the safe transportation of hazardous materials.</p>
<b>Evidence-Building Questions</b>	Which elements or characteristics of train derailments correlate to more substantial impacts in hazardous materials incidents?
<b>Activities</b>	<p>This is foundational fact finding which will integrate new data. It is the intent of this effort to generate statistics which would constitute evidence relating to rulemakings and effective strategies related to mitigating damage from hazardous materials in derailment incidents.</p> <p>Current displays only provide a count of queried information without relationship to the speed of the train, number of cars that failed, hazardous materials released by type, and failure type. The new table visuals will be created to present the relationships between these data to allow for frequency comparisons among the conditions, rolling stock, incident type, and commodities present in hazardous materials derailment incidents. Similarly, presenting the data by tank car type and hazard class gives visibility to the type of hazard/tank car combinations that the FAST Act phase out schedule impacts (DOT-111, Class 3).</p> <p>Data extracted to produce this dataset was expanded beyond mode of transportation (rail incidents) and where the material was indicated to be involved in a crash or derailment. The expanded search includes incident cause of failure where derailment was identified as a causal factor attributing to the incident.</p> <p>Presenting these data relationships as trends is achievable, though it is a mixed value proposition. The number of derailments is relatively consistent year-to-year. However, as the DOT-111 tank car phase-out has advanced, consequences trade proportionally from DOT-111 tank cars to DOT-117 tank cars. Other tank car types, such as the DOT-105 tank cars carrying vinyl chloride, have relatively consistent derailment performance over time.</p>

<sup>4</sup> According to the National Transportation Statistics 2021, 50th Anniversary Edition, there were 374 rail incidents in 2020 and 421 in 2019.



## Equity: National Transit Database Geospatial Data Collection

<b>Operating Administration</b>	Federal Transit Administration (FTA)
<b>DOT Strategic Plan Alignment</b>	Strategic Goal: Equity, Strategic Objectives: Expanding Access; Proactive Intervention, Planning, and Capacity Building
<b>Other Guiding Documents</b>	<a href="#">Federal Register Notice, National Transit Database Reporting Changes and Clarifications</a> ; <a href="#">DOT Equitable Transportation Communities – Disadvantaged Communities Definition</a> ; <a href="#">Equity Action Plan</a> .
<b>Background</b>	<p>A key component of FTA's mission is to provide transportation alternatives for disadvantaged populations. FTA programs support transit investments that address disparities in access to quality transit services that provide mobility to meet basic needs and increase access to opportunity and services for all people, including disadvantaged populations and underserved rural and urban communities. Many communities have been overlooked in the past because of their rural location or have suffered from the ongoing legacy of racial discrimination.</p> <p>With limited availability of geospatial data in the past, it has been challenging for FTA to measure the extent to which low income and other traditionally underserved populations lack access to affordable and reliable public transportation. FTA will collect geographic service area coverage data beginning in FY 2024, per Section 30014 of the Bipartisan Infrastructure Law. FTA plans to leverage this data source to develop new performance measures to track access by geographic area to fixed route and demand response transit services,<sup>5</sup> using newly available geospatial data from transit agencies, DOT's Equitable Transportation Community Explorer (ETC), and FTA's Census Map.<sup>6</sup></p>
<b>Evidence-Building Questions</b>	<ul style="list-style-type: none"> <li>• To what extent are transportation disadvantaged communities served by fixed-route public transit?</li> <li>• To what extent are transportation disadvantaged communities served by demand response public transit?</li> <li>• What areas of the U.S. are served exclusively by demand response transit service?</li> </ul>

<sup>5</sup> Fixed route transit service is transit service provided on a repetitive, fixed schedule basis along a specific route, with vehicles stopping to pick up and deliver passengers to specific locations. Each fixed route trip serves the same origins and destinations, such as rail and bus, unlike demand response and vanpool services. Demand response transit service is defined in the National Transit Database reporting manual as: a transit mode operating on roadways in response to requests from passengers or their agents to the transit operator, who groups rides together when possible and dispatches a vehicle to provide the rides. Vehicles do not operate over a fixed route or on a fixed schedule unless temporarily satisfying a special transit need. Many transit systems operate demand response service to meet the requirements of the Americans with Disabilities Act (ADA).

<sup>6</sup> The FTA Census Map currently presents National Transit Database agency information, alongside routes and stops from voluntary General Transit Feed Specification data submissions to the National Transit Map and U.S. Census Bureau geographies. The FTA Census Map is a tool primarily aimed at NTD Reporters to enable them to track urbanized area boundary changes.

## Activities

This activity will enable FTA to measure the extent to which disadvantaged populations have access to transportation options. Transit agencies are required to provide General Transit Feed Specification (GTFS) data to FTA for fixed-route transit service. GTFS submissions include information on routes, stops, and schedules. The Bureau of Transportation Statistics (BTS) produces the National Transit Map (NTM) Stops and Routes features layers using these data. The FTA uses these layers in its Census Map and other applications. Beginning in the fall of 2024, all reporting transit agencies will have submitted their GTFS data for fixed route service and survey response data for demand response service.

These data will result in a more complete data set of the nation's transit system coverage. The data are expected to provide FTA with information on inequities in access to transit services faced by disadvantaged communities and enable FTA to begin reporting on new performance measures capturing the extent to which transportation-disadvantaged communities have access to public transit services. Part of the work will be to establish baselines for these new measures in support of future trend analysis.

As GTFS data are submitted for FYs 2024 – 2025, FTA's Office of Strategic Planning & Analysis (TBP-30) will work with BTS to produce updates to the NTM. FTA will verify and validate the data, identify any data limitations, develop an appropriate method of computation for a new performance measure to track access by disadvantaged communities to fixed route transit, and develop data analysis and management standard procedures. FTA will use the NTM and DOT's disadvantaged communities data to create useful graphic visualizations of nationwide transit service coverage in ArcGIS. FTA will present data for the new performance measure on an innovative web map product alongside the supporting data.

In a subsequent phase, FTA plans to develop an additional performance measure tracking access by disadvantaged communities to demand response transit services across the country. FTA will accomplish this by working with BTS to produce new Demand Response Service Areas data in the NTM. The new demand response dataset will enable FTA to identify the demand response service coverage of the national transit fleet and identify gaps in services for older adults and people with disabilities who rely on these services. Before presenting the results of the analysis in a web map, FTA will identify and analyze appropriate data, develop a meaningful performance measure based on valid computation methods, and establish sound data collection, processing, and management practices.

## Equity: Transportation Cost Burden Estimation

<b>Operating Administration</b>	Office of the Secretary of Transportation's Office of Research and Technology (OST-R)
<b>DOT Strategic Plan Alignment</b>	Strategic Goal: Equity, Strategic Objective: Expanding Access.
<b>Other Guiding Documents</b>	DOT <a href="#">Equity Action Plan</a> , <a href="#">FY 2025 Annual Performance Plan</a> and <a href="#">FY 2023 Annual Performance Report</a> .
<b>Background</b>	<p>The Department has an Equity Key Performance Indicator with a goal to “Reduce National Transportation Cost Burden by 5%, Including Transportation Travel Cost as a Percent of Income, by 2030.” However, transportation cost is a complex concept that is challenging to represent and analyze. The Department estimated an initial cost burden using existing data sources without modeling traveling behavior as part of the <a href="#">Justice40 Equitable Transportation Community (ETC) Explorer tool</a>. These estimates are currently included in the Equity Key Performance Indicator. The goal to reduce the cost burden is also outlined in the Departments <a href="#">Equity Action Plan</a> under Expanding Access.</p> <p>The Bureau of Transportation Statistics (BTS) within OST-R initiated work on estimating the cost burden of transportation on households at the local level using existing data sources. First, BTS will develop a model to estimate the travel behavior at a local level. This model would be similar to the previous <a href="#">Local Area Transportation Characteristics Household (LATCH)</a> that BTS developed based on the <a href="#">National Household Travel Survey (NHTS)</a>, but it will expand upon the data sources to increase the geographic coverage. Next, BTS will estimate local travel costs based on cost variables (including vehicle purchase prices, operation and maintenance of a vehicle, insurance, transit fees, etc.), mode choice, and neighborhood characteristics. Finally, BTS will estimate the local transportation cost burden by dividing the estimated local costs by the median income of that locality.</p>
<b>Evidence-Building Questions</b>	<ul style="list-style-type: none"> <li>• What are the key variables needed to estimate the transportation cost burden? Does the model accurately estimate travel behavior at the local level? What is the margin of error?</li> <li>• To what extent is there heterogeneity in travel cost burdens within localities? What household socio-economic or other factors account for that variation?</li> <li>• To what extent is data sufficient to estimate the transportation cost burden at the local level? If the Department were to collect additional data, what data would be needed and at what scale of geographic granularity? What are the implicit tradeoffs for the cost, scale, and scope of this data collection?</li> </ul>

## Activities

BTS will develop estimates of transportation cost burden at the local level using existing data sources and analyze the feasibility of collecting new data that could further enhance transportation cost burden estimates. These efforts include researching and analyzing the current state of the practice in cost burden estimation and data availability and collection for cost burden estimation; developing and implementing new and enhanced methods and approaches to produce cost burden estimates at the local level; and analyzing and planning for potential new future data collections to enhance transportation cost burden measures. Throughout this process, BTS will systematically solicit input and feedback from a diverse set of experts and stakeholders.

BTS is working to gather additional local household travel data sources to model travel behavior at a local level using various demographic and land use characteristics. For example, the model will include variables like income, walkability, frequency of transit stops, availability of cars, neighbor density, etc. to estimate travel behavior and then convert that travel behavior into an estimate of household travel cost. Through the model development, BTS will identify which variables predict travel behavior and have the greatest influence on cost burden. It will allow BTS to estimate the statistical significance of the variables and provide the standard error of the estimates. Costs will include vehicle ownership (purchase prices, maintenance, insurance, etc.), vehicle use, transit use, and potentially costs for biking and walking.

DOT's Cost Burden model will enhance the ETC Explorer's existing [Transportation Insecurity Analysis Tool](#) that DOT uses to identify areas with high-cost burden and high transportation insecurity to prioritize funding. BTS formed a working group comprised of various offices within OST, FHWA, and FTA to guide and inform the initiative. Over the next couple of years, the Department will consider what additional data is needed to measure the transportation cost burden, expanding the measure to include transportation insecurity (of which cost burden is a component), what factors influence transportation insecurity and how DOT decisions and investments can improve levels of transportation insecurity. In FY 2024, BTS will develop a feasibility report that summarizes the data collections needs, the costs and approach of different strategies to collect the data. This modeling effort as well as the feasibility study for data collection will expand upon the current research and understanding of individual and household transportation cost, travel time, trips not taken, accessibility, and access to key resources across demographics.

This will position the Department to develop a pilot data collection in FY 2025. This will be the next step in standing up a data collection program that allows DOT to better measure transportation insecurity. It will also provide leadership with the evidence-base needed to design policies and programs that address transportation insecurity. Should funding be available, the data collection will address gaps in current data, such as capturing individual and household cost, travel time, trips not taken, accessibility, and access to key resources across different demographic groups. This would inform DOT's policy development to address transportation insecurity.

## Climate & Sustainability, Equity: Zero-Emission Rail Yards

<b>Operating Administration</b>	Federal Railroad Administration (FRA)
<b>DOT Strategic Plan Alignment</b>	Strategic Goal: Climate and Sustainability, Strategic Objective: Path to Economy-Wide Net Zero Emissions by 2050 Strategic Goal: Equity
<b>Other Guiding Documents</b>	<a href="#">U.S. National Blueprint for Transportation Decarbonization</a>
<b>Background</b>	FRA is proposing to launch a Zero-Emission Rail Yards initiative under the FY 2025 President's Budget to assess the reduction of greenhouse gas emissions (GHG) and Environmental Protection Agency (EPA) criteria pollutant emissions at rail yards, with an emphasis on areas with high pollution impacts on surrounding communities. Often, communities near rail yards are Environmental Justice (EJ) or disadvantaged communities that suffer adverse health effects associated with exposure to diesel emissions. As EPA stated in its November 9, 2022, <a href="#">response to petitions</a> by the California Air Resources Board, "locomotives remain a significant source of emissions, often disproportionately impacting the health of communities that are located near railyards and ports."
<b>Evidence-Building Questions</b>	<ul style="list-style-type: none"> <li>• To what degree can rail yards reduce emissions?</li> <li>• Is it feasible to achieve zero emissions in a rail yard?</li> </ul>
<b>Activities</b>	<p>There are two separate elements to the Zero-Emission Rail Yards pilot. First, FRA will conduct research and testing to build evidence and document the public health impacts rail yards currently have on surrounding communities. The testing data will assist FRA to identify the rail yards and communities most in need of intervention. Testing will document the actual level of experienced pollution around rail yards and will help distinguish between emissions from the rail yard and emissions from nearby industrial activities, which can be located in and around rail facilities. This research will also identify whether there is an existing project that has data and evidence on GHG and pollutants that may be ready to proceed to the pilot phase.</p> <p>Utilizing data from the first phase, FRA will seek to partner with a rail yard to pilot the establishment of a Zero-Emission Rail Yard. Consolidated Rail Infrastructure and Safety Improvement (CRISI) grants may be used in FY 2025 or future years, depending upon the readiness of the rail yard, to fund the purchase of zero-emissions or renewable fuel (e.g., electrification, green hydrogen, or renewable diesel) switcher locomotives and upgrade rail infrastructure to improve the efficiency of yard operations. The switcher locomotives used in rail yards are often old, lack anti-pollution equipment, and, in most cases, predate EPA pollution standards. The partner railroad and/or localities will match FRA's investments by replacing other equipment that operate in rail yards and produce emissions, such as trucks, forklifts, and cranes. All equipment will be zero-emission or renewable fuel equipment. FRA will test emissions of the pilot rail yard before and after upgrades to equipment and operations to measures the impact on greenhouse gas emissions as well as other pollutants that are generated from rail yards, such as those produced from fossil fuel combustion.</p>

### **Definitions:**

***Rail Yards:*** A rail yard consists of large areas with lots of track to organize train sets. Rail yards are where rail cars are put together to form trains, trains are broken apart, and maintenance and inspections are often performed.

***CRISI Grants:*** Consolidated Rail Infrastructure and Safety Improvement (CRISI) grants are provided under 49 U.S.C. 22907. This grant program funds a myriad of projects such as deployment of rail technologies, safety research, and locomotive and equipment purchases.

***Switcher Locomotives:*** These locomotives operate in rail yards or short distances from a rail yard and are used mainly to hook together or break apart rail cars. They are generally lower power than “Line” locomotives that carry trains across the rail network.

***EPA criteria pollutant emissions:*** The EPA Criteria Pollutants are defined in statute as products from combustion that have known health impacts. The six criteria pollutants are nitrous oxide (N<sub>2</sub>O), sulfur dioxide (SO<sub>2</sub>), particulate matter (PM 2.5 and PM 10), carbon monoxide (CO), and lead (not often found in current diesel or gasoline).

## Climate & Sustainability: Sustainable Aviation Fuel

<b>Operating Administration</b>	Federal Aviation Administration (FAA)
<b>DOT Strategic Plan Alignment</b>	Strategic Goal: Climate and Sustainability, Strategic Objective: Path to Economy-Wide Net Zero Emissions by 2050
<b>Other Guiding Documents</b>	<a href="#">United States 2021 Aviation Climate Action Plan</a> , <a href="#">U.S. National Blueprint for Transportation Decarbonization</a>
<b>Background</b>	<p>To reduce aviation greenhouse gas emissions, the aviation sector is pursuing a combination of strategies with aircraft technology, operational improvements, and sustainable aviation fuel (SAF). The <a href="#">United States 2021 Aviation Climate Action Plan</a> recognizes that SAF offers a critical near-term solution to reduce greenhouse gas emissions and decouple aviation’s growth from its carbon emissions. The combustion of jet fuel from domestic and international aviation is responsible for more than 10% of total transportation greenhouse gas emissions in the U.S. Developing innovative technologies to produce SAF will enable the United States to both meet its domestic climate goals and position it as a global leader in the emerging SAF market. The <i>Inflation Reduction Act of 2022</i> (<a href="#">Public Law No. 117-169</a>) created a new tax credit for SAF called the Sustainable Aviation Fuel Credit that is worth \$1.25 for each gallon of sustainable aviation fuel in a qualified mix.</p> <p>SAFs are fully interchangeable, drop-in liquid hydrocarbon fuels with the same performance and safety as conventional jet fuels produced from petroleum. (“Drop-in” alternative fuels can be deployed in existing infrastructure, engines, and aircraft without any modification to engines or other equipment while maintaining an equivalent level of safety and performance to petroleum jet fuels.) SAF can be created from renewable or waste materials and have been shown to reduce life-cycle greenhouse gas emissions by at least 50% relative to conventional jet fuel and potentially 100% if used in combination with low-carbon technologies. Currently, in jet aircraft, SAF cannot exceed a maximum blend limit of 50% by volume with conventional jet fuel.</p> <p>Drop-in SAF is the most viable pathway for rapid decarbonization of the aviation sector for two main reasons. First, the majority of CO2 emissions stem from long-haul operations that are not expected to be replaced with battery electrification and hydrogen fuels in the coming decades. Second, fleet turnover is slow—an average of 30 years for most aircraft—meaning that there is an advantage to reducing the greenhouse gas emissions in the existing aviation fleet.</p>

## Evidence-Building Questions

- What are the environmental benefits and costs of using 100% drop-in SAF?
- Which existing SAF public policies and public incentives, alone or in combination, have the greatest effect on SAF production levels? What are the projected effects of proposed SAF-related public policies and public incentives, alone or in combination, on SAF production levels?
- What is the current and future supply of SAF for use by civil aviation?
- What contribution is SAF likely to make to the aviation sector's goal of net zero emissions by 2050?

## Activities

DOT co-leads the [SAF Grand Challenge](#) to support the expansion of SAF production. The SAF Grand Challenge is a partnership between the federal government (DOT, Energy (DOE), Agriculture (USDA), and others), the airline industry, and partners established the goal of increasing the U.S.'s SAF production to at least three billion gallons per year by 2030. Achieving this goal would put the U.S. on path to produce and use about 35 billion gallons of SAF by 2050. SAF production will also be supported by the new tax credits and a competitive grant program established by the Inflation Reduction Act of 2022. FAA will align SAF foundational fact-finding and policy analysis activities in support of the SAF Grand Challenge, including:

- 1) Through the ASCENT Center of Excellence SAF clearinghouse, developing testing data and analysis to support qualification of additional SAF pathways as well as higher blend levels of SAF with ASTM International, a developer of international voluntary consensus standards.
- 2) Analyzing existing and proposed SAF public policies and public incentives on the economics of SAF production using techno-economic tools.
- 3) Tracking and projections of SAF availability and environmental benefits to inform policymakers through data gathering on actual and announced production, modeling of future fuel production, and lifecycle greenhouse gas emissions analysis.



## Transformation: Advanced Air Mobility Ground-Based Infrastructure

<b>Operating Administration</b>	Federal Aviation Administration (FAA)
<b>DOT Strategic Plan Alignment</b>	Strategic Goal: Transformation, Strategic Objectives: Matching Research and Policy to Advance Breakthroughs, Collaboration and Competitiveness, & Flexibility and Adaptability
<b>Additional Strategic Alignment:</b>	Strategic Goal: Safety, Strategic Objectives: Safe Design and Safe Systems
<b>Other Guiding Documents</b>	<a href="#">Advanced Air Mobility (AAM) Implementation Plan</a> , <a href="#">Urban Air Mobility Concept of Operations v2.0</a> , and the <a href="#">Innovate 28 Implementation Plan</a> .
<b>Background</b>	<p>Advanced Air Mobility (AAM) is an emerging aviation ecosystem that leverages new aircraft and an array of innovative technologies to provide the opportunity for more efficient, sustainable, and equitable options for transportation. AAM is an umbrella term for aircraft that are likely highly automated and electric, and they are often referred to as air taxis or electric Vertical Takeoff and Landing (eVTOL) aircraft. Many of these new aircraft take off vertically like a helicopter, transition into horizontal flight like a traditional airplane, and then transition back to vertical flight for landing. AAM aircraft could be used to transport cargo and passengers, help with firefighting, provide “search and rescue” operations, or connect underserved and rural communities. FAA's job is to ensure this new generation of aircraft maintains the high level of safety that defines modern aviation.</p> <p>The FAA anticipates several safety issues with this technology that are different from general aviation and rotorcraft, therefore the agency needs to develop standards to address those issues and enable new construction of newly designed vertiports.</p> <p>The FAA will research four different aspects of AAM safety. First, the agency needs to conduct additional research on the operational performance of VTOLs and short takeoff and landing (STOL) aircraft.<sup>7</sup> Second, the agency needs to research the hazards and mitigations associated with AAM that use electric or hydrogen propulsion and the related charging infrastructure, such as electrical and hydrogen infrastructure, and emergency response including firefighting needs. Third, the FAA needs to research VTOL aircraft parking needs. Fourth, the FAA needs to conduct further research into signage, markings, and lighting.</p>

<sup>7</sup> Operational performance describes the manner in which VTOLs and STOLs operate in the airport/vertiport environment. On one hand, it is possible that VTOLs may perform better than rotorcraft during landing and takeoff and therefore may be able to operate at existing heliport infrastructure. On the other hand, VTOLs may not perform as well, or they may impose risks different than rotorcraft during those operations. Without fully examining the landing and takeoff performance of various VTOLs, it is not possible to establish whether current heliport design standards can appropriately address safety concerns. An example is the potential for a VTOL to produce a footprint of downwash wind forces that requires a larger safety area than a heliport in order to protect nearby personnel and infrastructure.

## Evidence-Building Questions

- To operate safely and reliably, do advanced air mobility aircraft (e.g., vertical take-off and landing aircraft and short takeoff and landing aircraft) need different ground-based infrastructure than traditional rotary-wing aircraft (e.g., helicopters)?
- How does operational performance during takeoff and landing differ between traditional rotary-wing aircraft (e.g., helicopters) and advanced air mobility aircraft (e.g., vertical take-off and landing aircraft and short takeoff and landing aircraft)?
- What ground infrastructure is needed to safely and reliably fuel advanced air mobility aircraft that use an alternative fuel for propulsion (e.g., electricity supplied from batteries or hydrogen fuels)?
- What additional safety elements such as visual guidance (i.e., paint markings, lights, and signage) are required for the safe operation of AAM aircraft at vertiport facilities?

## Activities

FAA's Airports Technology Research and Development Branch (ATR) has begun a research project that will last from FY 2023 through FY 2026 to support the development of vertiport standards. ATR is investigating and evaluating Vertical Take-off and Landing VTOL and Short Take-off and Landing STOL aircraft design characteristics and performance to develop design standards and guidance. The future research requires performing operational testing, modeling, and simulation exercises with VTOL manufacturers whose aircraft represent varying performance categories, such as vectored thrust, lift and cruise and multi-copter arrangements. This research will provide quantitative data on the landing precision of VTOLs, the downwash/outwash forces generated during landing and takeoff, their ability to depart and approach landing infrastructure safely, and their taxi and turn radius. Together, this evidence will inform the development of vertiport design standards.

The current research shows that VTOLs likely perform differently than rotorcraft and traditional fixed-wing aircraft. The FAA needs to collect the initial data about how the AAM aircraft perform to develop the standards for vertiports. A starting point is to examine the gaps that exist between heliport standards and rotorcraft performance and VTOLs.

There are three major evidence-building activities in this area that focus on operational testing with the AAM original equipment manufacturers (OEMs) described below: determining the size of safety areas; determining the size of Touchdown/Lift-off (TLOF) and Final Approach and Take-off (FAT) areas; and determining load bearing requirements. The FAA will measure operational performance aspects of the various AAM aircraft that could influence vertiport designs.

The anticipated outcome of these three evidence-building activities is the publication of an advisory circular guidance for performance-based design standards for vertiports.

## Determining Size of Safety Areas

To determine the sizing of safety areas where aircraft and passengers may comele at times, the FAA will measure downwash and outwash (DW/OW) forces of AAM aircraft. This data will inform the size of the safety area necessary to protect personnel and infrastructure in the vicinity of aircraft operations at vertiports. The FAA will be able to use these data to compare the DW/OW of AAM aircraft against the DW/OW of traditional fixed-wing aircraft. This comparison will allow the agency to determine any differences between existing heliports and future vertiports.

**Potential Data:** The FAA will collect and analyze the wind forces generated by different types of eVTOL aircraft during landing and takeoff operations to include hovering and transition from vertical to horizontal flight.

**Tools:** Anemometers, i.e., wind gauges, Computational Fluid Dynamics (CFD) models

**Methods and Approaches:** The FAA will create a temporary vertiport for testing at the OEMs base of operations. Markings will be applied to paved areas using chalk-based paint to delineate the Touchdown/Lift-off (TLOF), Final Approach and Take-off (FATO) and Safety Area (SA) of the test vertiport according to the dimensional standards in Engineering Brief (EB 105). OEMs will operate their aircraft through a series of maneuvers representing the lift-off (and touchdown), hover and departure (and arrival) phases of flight near the test vertiport. An array of anemometers will be positioned at key locations on and around the TLOF, FATO and SA to record the velocity of wind forces at various distances from the aircraft. Data collected from the tests will be used to create new CFD models and validate/refine existing CFD models of DW/OW. CFD modeling will assist the FAA in simulating DW/OW and potentially negate the need to perform operational measurements for similar future aircraft as they enter service.

## Determining Size of Touchdown/Lift-off (TLOF) and Final Approach and Take-off (FATO) Areas

To determine the size of the TLOF and FATO areas of a vertiport, the FAA will measure AAM aircraft landing precision, taxiing, and turn performance. These data will influence the development of standards for the touchdown and lift-off area (TLOF), which is where the aircraft makes contact with the vertiport. This activity offers another point of comparison between the performance of AAM aircraft and fixed-wing aircraft.

**Potential Data:** Landing precision, approach and departure slopes of AAM aircraft, taxiing performance and turn radius.

**Tools:** Traditional electronic surveying equipment

**Methods and Approaches:** At the test vertiport location, OEMs will operate their aircraft through a series of maneuvers representing the approach, hover, and touchdown phases of flight. The aircraft operator will aim to land at the center point of the TLOF. After each landing, researchers will mark the location of the landing gear, and measure the precise location using traditional surveying equipment. Multiple iterations of these maneuvers will inform a statistically significant landing precision capability for the aircraft.

### **Determining Load Bearing Requirements**

To determine the load bearing requirements of a vertiport FATO as well as the dimensional sizing and placement of taxiways/taxi lanes, parking spots, and fueling and recharging areas adjacent to or near the landing areas, the FAA will measure performance capabilities of OEM aircraft during operation on the ground.

**Potential Data:** Turn radius

**Tools:** Digital measuring devices including traditional surveying equipment

**Methods and Approaches:** OEMs will operate their aircraft through series of ground maneuvers representing 90 and 180 degree turns. The FAA will measure the distances required to complete the turns.

**Transformation: Mobility NeXt Program Demonstrations**

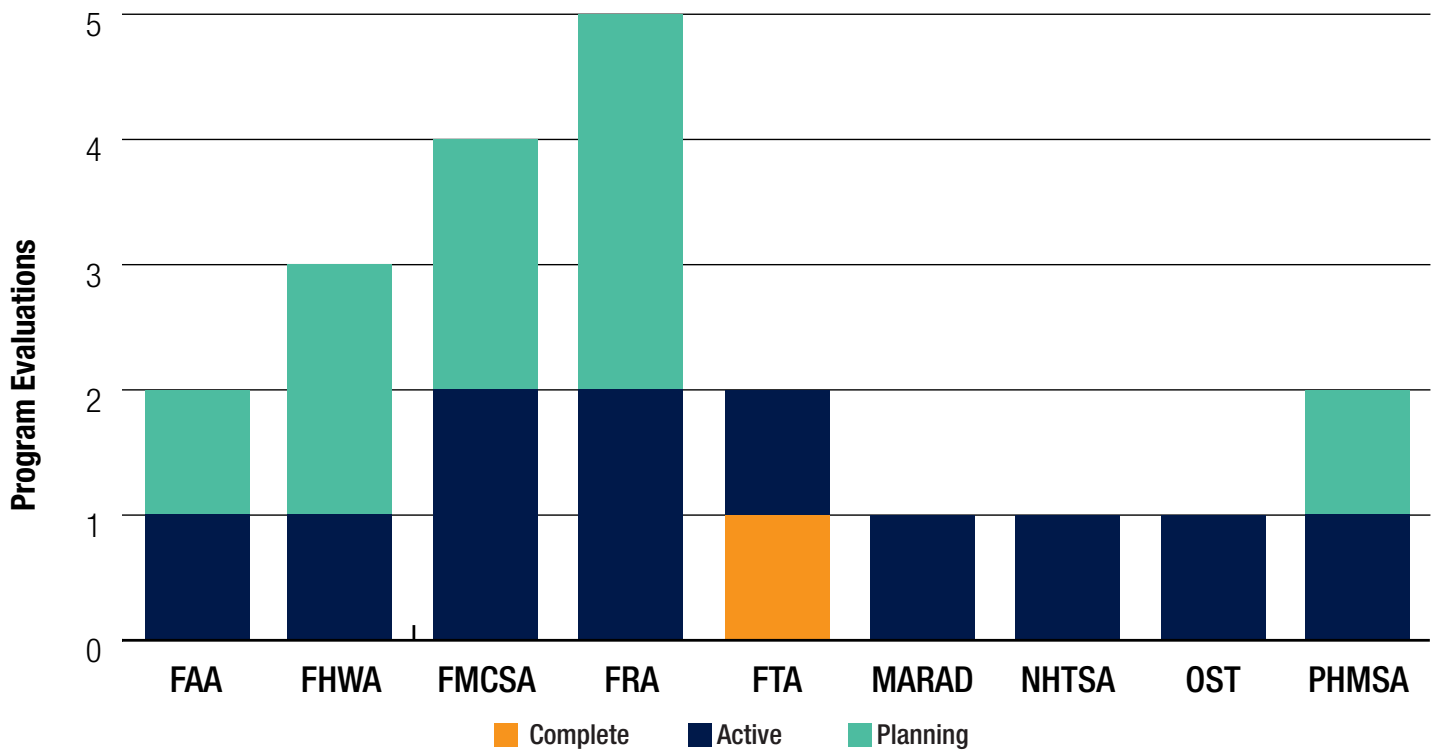
<b>Operating Administration</b>	Federal Transit Administration (FTA)
<b>DOT Strategic Plan Alignment</b>	Strategic Goal: Transformation, Strategic Objective: Matching Research and Policy to Advance Breakthroughs
<b>Additional Strategic Alignment:</b>	Strategic Goal: Equity, Strategic Objective: Expanding Access
<b>Background</b>	<p>FTA’s Office of Research, Demonstration and Innovation’s Mobility NeXt program focuses on identifying opportunities for emerging technologies, practices, and strategies to accelerate public transportation transformation and advance carefree mobility for all travelers. The program will research promising mobility innovations such as traveler incentives, payment and trip planning, and new analytical tools. Research to date has included scans of emerging technologies relevant to personal mobility and the state of the practice in transit innovation.</p>
<b>Evidence-Building Questions</b>	<ul style="list-style-type: none"> <li>• Which user-centric mobility innovations enhance travelers’ mobility?</li> <li>• Which measurable outputs demonstrate equity and sustainability outcomes of emergent mobility innovations?</li> <li>• Which tools and strategies have shown to be effective in helping communities implement impactful (equitable, sustainable, accessible) mobility innovations?</li> </ul>
<b>Activities</b>	<p>The Mobility NeXt program will fund targeted demonstration projects that will test traveler tools, novel practices, and/or advance mobility strategies as a foundational fact-finding activity. Transportation industry scans will identify relevant technological innovations, data analytics, and modeling activities to inform the demonstration projects. Findings from previous mobility demonstration efforts, specifically the Mobility on Demand Sandbox, also helped inform these investments to ensure they reflect industry needs. The program considers all multi-modal solutions, including transit, carsharing, bicycles, scooters, and carpooling, to advance personal mobility.</p> <p>By FY 2027, FTA will partner with transit agencies that adopt new technologies, tools, and capabilities; support new business models related to mobility payment integration; and design and test smart traveler tools, such as artificial intelligence and data analytics, to support personalized travel.</p>

# FY 2023 AND FY 2024 EVALUATION PLANS UPDATE

DOT published two previous evaluation plans ([FY 2023](#) and [FY 2024](#)). These plans contain 20 planned evaluations: three from FY 2023 and 17 from FY 2024. One evaluation is complete, and we

continue to monitor progress on the remaining evaluations. The following chart and table summarize progress to date:

**Status of FY 2023 and FY 2024 Program Evaluations**



## Evaluations in the Active and Planning Stages

Annual Evaluation Plan	Lead	Program Evaluation	Timeframe (FY)	Status
<b>2023</b>	FMCSA	<p>Electronic Logging Device (ELD) Rule – Regulatory Effectiveness Review</p> <p><i>Outcome evaluation of the change in the safety of the work environment for commercial drivers after the 2015 <a href="#">ELD final rule</a>, which intended to make it easier and faster to accurately track, manage, and share duty status data.</i></p>	2023-2024	<p><b>Active:</b> FMCSA's Office of Strategic Planning and Regulations began preparing for the ELD evaluation in March 2023. They have finalized the evaluation questions, literature review, and have compiled information from existing data systems. The evaluation team will begin interviewing FMCSA subject matter experts in January 2024.</p>
<b>2023</b>	FMCSA	<p>Effectiveness of the Drug and Alcohol Clearinghouse Rule Data Reporting and Use</p> <p><i>Process evaluation of the use of the <a href="#">Commercial Driver's License Drug and Alcohol Clearinghouse</a> established through a 2016 rulemaking.</i></p>	2023-2024	<p><b>Active:</b> FMCSA's Office of Strategic Planning and Regulations began this evaluation in March 2023. They have compiled data from the Clearinghouse and other sources, conducted a literature review, interviewed subject matter experts, and conducted a benchmarking analysis of DOT Operating Administrations. A preliminary report with recommendations is being drafted and will be presented to the team for initial review and comment in January 2024.</p> <p><b>Note:</b> Also related to Learning Agenda topic of Drug-Impaired Driving.</p>
<b>2023</b>	FTA	<p>Transit Asset Management (TAM) Program Evaluation</p> <p><i>Outcome evaluation of the policy, organizational, and industry changes after the 2016 <a href="#">TAM final rule</a>.</i></p>	2019-2023	<p><b>Complete:</b> FTA published the results in June 2023. (See details below.)</p>

Annual Evaluation Plann	Lead	Program Evaluation	Timeframe (FY)	Status
2024	FAA	<p>Airport Terminal Program (ATP)</p> <p><i>Process evaluation of outreach and FY 2022 and 2023 ATP awards with focus on disadvantaged communities, improved accessibility, and increased energy efficiency.</i></p>	2023-2024	<p><b>Active:</b> Document review began in summer 2023. Through a multi-tiered review process, the FAA will complete its selection of candidates to receive funding for the FY 2024 Airport Terminal Program. Historically, the process recommended more than 100 projects throughout the country. DOT priorities for sustainability, improving access for disadvantaged populations, and the creation of good-paying jobs, as well as other BIL-required considerations, are integrated throughout the solicitation and selection process.</p>
2024	FAA	<p>Efficacy of the Program Management Maturity Model (PM3) within Security and Hazardous Materials Safety Organization (ASH)</p> <p><i>Process evaluation of the efficiency of the PM3 assessment tool applied to the ASH.</i></p>	2024-2026	<p><b>Planning:</b> This evaluation will be rescoped in FY 2024 based on a reprioritization of activities.</p>
2024	FHWA	<p>Enterprise Assessment of the Focused Approach to Safety</p> <p><i>Process evaluation of FHWA's Office of Safety's Focused Approach to Safety that provides additional resources to eligible States to address safety challenges by reviewing program objectives, program measures, activities, and risks.</i></p>	2024-2025	<p><b>Planning:</b> FHWA's Enterprise Performance Management Team plans to start in 2024.</p>



Annual Evaluation Plan	Lead	Program Evaluation	Timeframe (FY)	Status
2024	FHWA	FHWA's Oversight of State and Local Entities Under the Americans with Disabilities Act (ADA)  <i>Process evaluation of FHWA's ADA oversight of State and local entities and other recipients of federal transportation funds by reviewing program objectives, program measures, activities, and risks.</i>	2024-2025	<b>Active:</b> FHWA's Enterprise Performance Management Team has begun work on this evaluation.
2024	FHWA	State Performance Management Program  <i>Process evaluation of FHWA's implementation of the State Performance Management Program that supports progress toward the achievement of performance targets established in State asset management plans by reviewing program objectives, program measures, activities, and risks.</i>	2024-2025	<b>Planning:</b> FHWA's Enterprise Performance Management Team plans to start in 2024.
2024	FMCSA	Effectiveness of the Motor Carrier Safety Assistance Program (MCSAP)  <i>Process evaluation of MCSAP grant program that focuses on use of performance measures and State activities.</i>	2024-2025	<b>Planning:</b> FMCSA's Office of Strategic Planning and Regulations expects to begin this evaluation by late Spring 2024.
2024	FMCSA	Entry Level Driver Training (ELDT) Provider Registry  <i>Outcome evaluation of changes in skill test pass rates after establishment of the ELDT program, established through a <a href="#">2016 rulemaking</a>.</i>	2024-2026	<b>Planning:</b> FMCSA's Office of Strategic Planning and Regulations plans to begin this evaluation in late FY 2024 and extend into FY 2026 to allow time for the completion of their internal audit of ELDT.

Annual Evaluation Plan	Lead	Program Evaluation	Timeframe (FY)	Status
2024	FRA	Automated Track Inspection Program <i>Process evaluation focuses on automated track inspection vehicle use and utilization metrics after the FY 2023 programmatic changes designed to increase efficiency were implemented in 2024.</i>	2025-2026	<b>Planning:</b> FRA staff expect to begin analysis and contractual action for this evaluation in FY 2025.
2024	FRA	Grade Crossing Grant Benefits <i>Outcome evaluation of changes in safety after installing grade crossing improvements.</i>	2024-2025	<b>Planning:</b> Analysis expected to begin in 2024.
2024	FRA	Northeast Corridor (NEC) BIL Program <i>Process evaluation examining changes in project selection and timelines after issuing the NEC Project Inventory in November 2022.</i>	2024-2026	<b>Planning:</b> FRA staff expect to begin in 2024. For more information, see <a href="#">NEC Project Inventory</a>
2024	FRA	Operation Lifesaver (OLI) <i>Process evaluation of the education and awareness materials and services provided by the non-profit organization, OLI, which works to prevent collisions at crossings as well as trespassing on or near tracks.</i>	2022-2024	<b>Active:</b> The Volpe Center is analyzing the data and drafting the report.
2024	FRA	Very Long Trains (VLT) Study <i>Outcome evaluation of the differences in safety, efficiency, operations, and performance of trains longer than 7,500 feet compared to shorter trains.</i>	2022-2024	<b>Active:</b> The National Academies of Sciences, Engineering and Medicine is drafting the report with input from a Transportation Research Board ad hoc committee with an end date of June 2024. For more information, see <a href="#">TRB Very Long Train Study</a> .

Annual Evaluation Plan	Lead	Program Evaluation	Timeframe (FY)	Status
2024	FTA	<p>Transit-Oriented Development (TOD) Pilot Program</p> <p><i>Formative evaluation of the TOD pilot program, established in 2012, to award competitive grants to assist communities in financing planning for capital or capacity improvement projects that include transit-oriented development. It examines the grantees' processes for developing the plans as well as the content of the plans.</i></p>	2022-2024	<p><b>Active:</b> Awarded a contract in FY 2023 to begin executing an evaluation plan in FY 2024 to demonstrate TOD-related outcomes related to the completion of planning studies.</p>
2024	MARAD	<p>State Maritime Academies (SMA) Recruitment and Enrollment Strategies</p> <p><i>Outcome evaluation of factors associated with SMA enrollment patterns, student enrollment in the Strategic Sealift Midshipman Program, and acceptance into the Student Incentive Program across the six SMAs for increasing program participation. Also addresses equity by examining differences in the experiences of students from different demographic groups.</i></p>	2024-TBD	<p><b>Active:</b> Awarding a contract in FY 2024.</p>
2024	NHTSA	<p>National Impaired Driving Paid Media Campaign</p> <p><i>Outcome evaluation of whether the NHTSA paid media campaigns of "Drive Sober or Get Pulled Over" and "If You Feel Different, You Drive Different. Drive High. Get a DUI." are associated with changes in attitudes and behaviors related to alcohol- and drug-impaired driving. Also addresses equity by examining response differences across demographic groups.</i></p>	2023-2025	<p><b>Active:</b> Awarding a contract in FY 2024 and expect to submit PRA package in 2024.</p> <p><b>(Note:</b> Also related to Learning Agenda's focus area on Drug-Impaired Driving and the Click It Or Ticket evaluation)</p>

Annual Evaluation Plan	Lead	Program Evaluation	Timeframe (FY)	Status
2024	OST	<p>Equity in the Reconnecting Communities Pilot (RCP) Program</p> <p><i>Formative evaluation of the RCP program that examines baseline conditions, including how transportation infrastructure has affected grantees, measurable impacts, and community engagement practices for the capital construction projects. Also addresses equity in terms of community engagement and stewardship practices among grantees.</i></p>	2023-2026	<p><b>Active:</b> Developed an evaluation workplan for evaluating capital projects, to include documentation of baselines and data gathering on near-term impacts in communities that received RCP grants. DOT awarded six FY 2022 capital construction grants in February 2023 and will award additional capital construction grants in February 2024. Completion expected in 2026.</p>
2024	PHMSA	<p>Natural Gas Distribution Infrastructure Safety and Modernization (NGDISM) Grant Program</p> <p><i>Outcome evaluation of the NGDISM program in terms of miles of pipes replaced, repaired, or rehabilitated and number of jobs created or retained. Also addresses equity in terms of outreach (to potential grantees), applications, awards, and public engagement by grantees.</i></p>	2023-2025	<p><b>Active:</b> 37 FY 2022 awards announced in April 2023. Two FY 2022 equipment-only awards executed in September 2023. PHMSA anticipates executing 35 FY 2022 construction awards after clearing NEPA requirements. See <a href="https://www.phmsa.dot.gov/about-phmsa/working-phmsa/grants/pipeline/tier-2-site-specific-environmental-documents">https://www.phmsa.dot.gov/about-phmsa/working-phmsa/grants/pipeline/tier-2-site-specific-environmental-documents</a> for more information.</p> <p><b>Planning:</b> PHMSA anticipates announcing \$392 million in FY 2023-2024 awards by April 2024. FY 2023-2024 awards will then begin to undergo NEPA requirements.</p>

## Completed Evaluations

DOT has completed one program evaluation from the FY 2023 and FY 2024 Plans to date. FTA released the results of the [Transit Asset Management Program Evaluation](#) in June 2023. FTA partnered with DOT's Volpe Center to evaluate the effects of the Transit Asset Management (TAM) Final Rule on the transit industry and the effectiveness of FTA's associated outreach. The TAM Rule requires transit agencies to have compliant TAM Plans as a condition of receiving federal funding. TAM is a business model that uses transit asset conditions to guide decision-making on the optimal prioritization of funding. The evaluation discovered that TAM Rule requirements helped agencies formalize business processes and contributed to more mature TAM Programs. The TAM Rule encouraged agencies to implement more extensive asset inventories and databases, created consistency in data collection and reporting practices, and helped agencies implement updated maintenance and inspection procedures. As stated in the evaluation report:

*The Evaluation Team found that transit agencies benefited from the FTA guidance, communications, and outreach and the FTA TAM Program following the TAM Rule. Additionally, the TAM Rule encouraged agencies to update or make changes to their organizational structure or functions to move towards a TAM approach. Throughout the evaluation's data collection, transit agency representatives provided suggestions for improvement, some of which were used for real-time improvements to the TAM Program's support to transit agencies (TAM Program Evaluation Overview, p. 3).*

In addition to publishing the report on FTA's website, the evaluators shared the results at the [Transportation Research Board's 14th National Conference on Transportation Asset Management](#) (July 2023) and the [2023 FTA TAM Roundtable](#) (July 2023).



