



Learning Agenda

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INTRODUCTION

In accordance with the Foundations for Evidence-Based Policymaking Act of 2018, [Public Law No. 115-435](#) (Evidence Act) and Office of Management and Budget (OMB) [Memorandum M-19-23](#), the United States Department of Transportation (DOT or the Department) is pleased to present DOT's Learning Agenda, which lays out the Department's plans for identifying and addressing priority questions relevant to the programs, policies, and regulations of the Department. Per OMB Memorandum M-19-23, the Learning Agenda documents the following:

- The strategic goals and objectives that the Learning Agenda will address;
- Priority questions to be answered;
- Activities that the Department will engage in to address priority questions;
- The timing of learning activities;
- Potential data, tools, methods, and analytic approaches to be used to answer priority questions; and
- Anticipated Department-specific challenges and proposed solutions to developing evidence to support leadership priorities.

This document was created by the Office of the Chief Financial Officer and Assistant Secretary for Budget and Programs (OST-B), in collaboration with the Safety Council, Equity Task Force, Climate Change Center, and multiple Operating Administrations. The Safety Council, Equity Task Force, and Climate Change Center are internal, multi-modal groups at DOT that coordinate on improving the safety of our nation's transportation system, increasing equity in DOT's programs and internal operations, and supporting the Department's efforts to move toward net-zero transportation emissions. The team built upon the insights gleaned through development of the interim Learning Agenda, which established an initial understanding of the evidence-building activities that are being conducted around the Department to answer strategic and operational questions that support the Department's mission.

In accordance with OMB guidance to align some or all priority questions to agency-wide strategic goals to ensure that resulting evidence is timely and relevant to agency needs, the Learning Agenda focuses on three of the six strategic goals outlined in DOT's FY 2022 - 2026 Strategic Plan: Safety, Equity, and Climate & Sustainability. OST-B coordinated with leadership and staff from the Safety Council, Equity Task Force, and Climate Change Center, and related Operating Administrations, to develop and receive approval on nine priority questions that build upon the work already being carried out in these areas. These groups conducted internal and external stakeholder outreach to gather feedback and inputs on the development of the priority questions included in this document. The Department plans to update the Learning Agenda on an annual basis.

SAFETY PRIORITY QUESTIONS

FOCUS AREA: DRUG-IMPAIRED DRIVING (EXCLUDING ALCOHOL)

This focus area aligns with the **Safety** Strategic Goal and the **Safe Public** Strategic Objective of the DOT's FY 2022 – 2026 Strategic Plan.

Overview

Many substances can impair driving, including some over-the-counter and prescription drugs and illegal drugs. The most recent National Roadside Survey, conducted during 2013 and 2014, found a 20% weekend nighttime prevalence of drug presence in drivers, a statistically significant increase from the 16% found in the 2007 national survey.¹ A recent study of five Level-1 trauma centers found that 29% of drivers involved in serious injury and fatal crashes tested positive for at least one drug other than alcohol prior to the COVID-19 pandemic; this increased to 36% in the first four months of the pandemic.² The [2020 National Survey on Drug Use and Health](#) estimated that 12,661,000 people aged 16 and older drove under the influence of drugs during the 2020 calendar year.³

The presence of drugs is inconsistently tested after traffic events occur. There are challenges in determining whether the presence of drugs other than alcohol indicates impairment during an incident or crash because, unlike alcohol, measurements of other drug levels cannot reliably be used to determine impairment.

Drug impairment is also severely underreported in police accident reports, including fatal traffic crashes. Data quality and availability vary widely between States, and cut-off levels used in laboratories to determine drug presence also vary widely.

Relevant Operating Administrations

National Highway Traffic Safety Administration (NHTSA)

Priority Questions

To what extent does drug impairment play a role in crashes?

- What are the barriers to States, law enforcement, and the judicial system in drug impairment identification and reporting?
- How effective are drug-impairment detection technologies in identifying drug-impaired drivers?

Evidence Building Activities

NHTSA will continue foundational fact-finding to guide its behavioral research and programmatic efforts on the drug-impaired driving (DUID) problem. These activities build evidence to inform technical assistance to States, program activities with law enforcement and other partners, and communications to the public. This includes:

- The [National Roadside Survey](#) (NRS) of driver drug use to determine the magnitude and scope of the problem and conducting trend analyses of changes since previous surveys. The NRS design will begin in FY 2022 with data collection to begin in FY 2024. NRS results will help NHTSA understand the prevalence of drugs among those who are driving or otherwise traveling at the time of sampling.

¹ <https://rosap.ntl.bts.gov/view/dot/2097>

² <https://rosap.ntl.bts.gov/view/dot/50941>

³ <https://www.samhsa.gov/data/release/2020-national-survey-drug-use-and-health-nsduh-releases>

- The [National Survey of Drinking, Drug Use, and Driving Attitudes](#), which will inform countermeasure development and media messaging to prevent DUID. The attitudes and behaviors survey will be submitted for OMB clearance in FY 2022. The survey will be administered in FY 2023 and the final report will be completed in FY 2024.
- Continuation of expert panels and laboratory research with human subjects on the effects of drug use on behavior and driving ability. An ongoing study of the prevalence of drugs and alcohol in seriously and fatally injured road users helps researchers understand the presence of potentially impairing drugs in select trauma center catchment areas.
- Data collection from State and local records, stakeholder interviews, and focus groups will be used to examine barriers to the enforcement and judicial system in drug-impairment identification and reporting as well as adjudication processes for offenders.

Regarding issues with existing DUID data, NHTSA has ongoing efforts to improve the drug data in the Fatality Analysis and Reporting System (FARS) and the data elements in the Model Minimum Uniform Crash Criteria. NHTSA will also assess its demonstration projects to support State toxicological laboratories that conduct DUID forensic toxicology. Statewide stakeholder meetings will inform efforts to improve DUID data.

In FY 2020, NHTSA launched the [Drug-Impaired Driving Criminal Justice Evaluation Tool](#) to help States self-examine and improve their DUID systems, including toxicology, data, enforcement, adjudication, and treatment for offenders. The tool allows users to self-diagnose programs to reduce drug-impaired driving through a systematic review of activities, policies, and procedures intended to reduce impaired driving. The tool allows State, local, territorial, and tribal governments to identify gaps in drug-impaired driving programs, inform strategies to strengthen programs, and track progress over time against baseline results. It was developed through a Federal Register Notice and promoted through national webinars, conferences, newsletters, and NHTSA regional office outreach. A recent task order was awarded through FY 2023 to promote the availability of the tool. NHTSA will also provide technical and financial assistance and assess the tool for completeness and usability.

NHTSA also conducts foundational fact-finding activities on DUID detection technologies, including laboratory research to examine the feasibility of a field test for marijuana impairment and field work on the feasibility of specific driving performance cues for identifying drug-impaired drivers for law enforcement. The initial feasibility study will be completed in FY 2023, with follow-on studies informed by the results. NHTSA recently launched a study to identify specific cues for law enforcement to identify drivers who may be under the influence of cannabis. Phase One of this study will be completed in FY 2023.

Data Sources

NHTSA will use data from the NRS to determine the scope and magnitude of drug-impaired driving across the country and track trends in drug presence in drivers. It is the only nationally representative data of its kind. NHTSA uses data from the Substance Abuse and Mental Health Services Administration's National Household Survey on Drug Use and Health and its own Nationally representative self-report surveys of driver attitudes and behaviors about drug use and driving to examine the scope and magnitude of the problem and conduct trend analyses. Government Census data is used to support national survey results.

Existing data from State and local agencies are mined to inform a variety of project and assessment efforts. These are often supplemented with survey, interview, laboratory, and focus group data specific to those studies to address a variety of questions related to DUID. NHTSA also has data on drug-impaired driving FARS. An ongoing project seeks to identify other available data sources for use in DUID research.

Anticipated Challenges and Mitigation Strategies

While NHTSA is working diligently to improve the DUID data in FARS, there are numerous [limitations](#) associated with the data in its current state.

- Existing data from States and local jurisdictions are often limited and inconsistent. To mitigate this challenge, NHTSA does extensive triage on the front end of research projects to find the best quality data available for a given project. NHTSA also identifies supportive partners to answer a specific question and collects supplemental data to support the work as needed.
- Roadside surveys that collect biological specimens to test for drug presence can be controversial and drivers may be hesitant to give samples. By conducting mock sample collections and reporting on the results, local media can assist with dispelling public misconceptions and misunderstandings. This also helps increase public acceptance and awareness on the purpose and importance of this type of data collection in their communities.
- Laboratory studies have similar challenges for recruiting potential subjects. Adherence to protocols and offering participant incentives improve recruitment efforts. Access to controlled substances can be challenging to conduct these studies. NHTSA only partners with laboratories that have the required certifications for obtaining and using these substances.
- National self-report survey administrators are often challenged with obtaining sufficient response rates. NHTSA uses rigorous data collection practices to ensure all responses received are accurate and usable. Potential respondents are also offered incentives to participate. This survey requires Paperwork Reduction Act (PRA) clearance. NHTSA strives to fast-track PRA clearance by using documented internal processes and ensuring staff are trained in the requirements for beneficial Information Collection Request packages.

FOCUS AREA: PEDESTRIAN AND CYCLIST SAFETY

This focus area aligns with the **Safety** Strategic Goal and the **Safe Public** and the **Safe Design** Strategic Objective of the DOT's FY 2022 - 2026 Strategic Plan.

Overview

Pedestrian and cyclist deaths have increased in the past 10 years. On average, about 17 pedestrians were killed each day on our nation's roadways in CY 2020, up from about 11 per day in CY 2009. In CY 2020 alone, there were an estimated 6,236 pedestrian and bicyclist fatalities across the nation.⁴

Pedestrian and Cyclist Risk Rates: Information is readily available on vehicle counts and mileage to discern crash risk rates in multiple units of analysis, even down to the segment and corridor levels. However, exposure and count information for pedestrian, bicyclist, and other vulnerable road users at the national level are limited in scope. From year to year, there are limited data available for DOT to determine whether changes in the fatality count are due to changes in walking or biking frequency or due to enhanced risk rates. It is therefore difficult to establish safety risk rates for pedestrians and cyclists comparable to vehicle exposure, which results in the Department making safety investments focused on where the data are available as opposed to where the risk is located.

Road Configurations: Generally, FHWA has not identified specific road configurations or cross-sections that inherently put pedestrians and cyclists at the highest risk for crashes. There is strong evidence showing that crash risks and severity rise as the number of motor vehicles on the road increases, along with roadway widths, turning conflicts, and other contributing factors that accompany higher volumes of motor vehicles. Evidence also indicates that a disproportionate share of pedestrian fatalities occurs in suburban and exurban contexts along major signalized arterial roads. There are numerous design treatments that can be implemented to help decrease crash risk. However, it is important to analyze exposure data of the entire road network to better understand conflict areas.

Equity and Vulnerability by Gender and Race: Black pedestrians experience disproportionately high fatality rates from traffic crashes, more than two times that of white pedestrians over the past decade. Based on NHTSA's preliminary estimates of crash fatalities in CY 2020, overall fatalities increased by 7.2%, while non-Hispanic Black fatalities increased by 23%, highlighting how inequities in transportation fatalities is accelerating. Indian and Alaskan Native persons have the highest rate of deaths from traffic crashes, more than three to four times that of white pedestrians.⁵

The Department is committed to ensuring there are no disparities in opportunities to safely walk or bike in underserved communities compared to more affluent communities. People with disabilities should be able to easily navigate walking and bicycling facilities and fully experience the safety benefits of those facilities. By ensuring that such facilities are accessible, everyone will benefit from the potential safety improvements (such as protected intersections and quick-build curb bulb outs), and deployment of these facilities will be hastened by having the best accessible design practices.

Relevant Operating Administrations

National Highway Traffic and Safety Administration (NHTSA) and Federal Highway Administration (FHWA)

Priority Questions

How can we gather and analyze additional information on pedestrian and cyclist risk to inform decision making on infrastructure and other safety interventions? (NHTSA/FHWA)

⁴ <https://crashstats.nhtsa.dot.gov/>

⁵ <https://www.nhtsa.gov/research-data/fatality-analysis-reporting-system-fars>

- What road configurations are associated with the highest risk of pedestrian and cyclist crashes? (FHWA)
- What are the equity considerations in reducing pedestrian and cyclist crashes? (NHTSA)
- How can FHWA address disparities in pedestrian crashes through infrastructure solutions? (FHWA)

Evidence Building Activities

Pedestrian and Cyclist Risk Rates: NHTSA will continue foundational fact-finding to understand how road user behavior could be influenced to limit risks to bicyclists and pedestrians. NHTSA collects and analyzes data related to who is at risk, where risks are highest, and what interventions are most likely to mitigate those risks. NHTSA is also conducting foundational fact-finding work to explore potential methodologies to collect robust pedestrian exposure data. These contribute to the Department’s work to provide a safe transportation system.

Assessing risk requires data on the locations and volume of people walking and biking (i.e., exposure data). Exposure data requires volume counts and an inventory of the walking and/or bicycling network. Related projects to improve exposure data collection include:

- *State Agency Collaboration:* In FY 2022, the Office of Planning, Environment, and Realty (HEP) and Office of Highway Policy Information will initiate efforts to encourage more State agencies to submit walking and bicycling volume data to the Travel Monitoring Analysis System. The Highway Performance Monitoring System (HPMS) is being modified to allow States and local agencies to report bike lane and bike network data. Initially, the bike lane and network data will be optional and will become mandatory with the next edition of the HPMS reporting guidance, the *HPMS Field Manual*. More information can be found [here](#).
- *International Collaborations:* The HEP and HSA will continue collaborating on a Global Benchmarking Program knowledge exchange with Australia and New Zealand, examining how those countries address pedestrian safety on urban signalized arterial roads. Among the preliminary findings, FHWA learned that Australia provides National guidance to its States on model road configurations for differing contexts that maximize safety. More information can be found [here](#).
- *Advanced Imaging Techniques:* FHWA developed a vehicle-to-pedestrian test bed on the Turner-Fairbank Highway Research Center campus. This test bed includes thermal sensors that are being studied for their capabilities to detect and collect pedestrian, bicycle, and scooter data.

Road Configurations: There are multiple research projects ongoing with the goal of understanding how road configurations and specific countermeasures may affect pedestrian and cyclist safety risks.

- *Complete Streets Safety Analysis:* This study will identify how multiple roadway countermeasures or factors, as measured through Crash Modification Factors, work in concert to improve safety through a Complete Streets treatment. Scope is under development and the study is estimated to be completed in FY 2023.
- *Development of Pedestrian-Intersection Countermeasure Crash Modification Factors:* This study includes the development of Crash Modification Factors treatments and strategies that could be applied at intersections for the convenience

and safety of pedestrians. Specifically, this project will assess the geometric design of intersection corner radii to determine and characterize the resulting crash frequency and severity. The study will be completed in FY 2022.

- *Assessment of Aesthetically Treated Crosswalks*: This study assesses the impact that aesthetically treated crosswalks have on road user recognition and behavior at crosswalks, looking specifically at rainbow crosswalks. This study will be completed in FY 2023.
- *Effective Selection of Crosswalk Design*: This study includes field research to help identify contexts in which high-visibility crosswalk designs may improve safety for pedestrians and will produce a guidebook for practitioners on crosswalk design policies. This study will begin in FY 2023 and conclude in FY 2024.

Equity and Vulnerability by Gender and Race: FHWA plans to continue collaborations to build and disseminate evidence of best practices to address disparities in traffic fatalities and serious injuries in disadvantaged communities.

- *Equity in Safety Working Group*: This group offers an equity-in-transportation safety primer, fact sheets, webinar series, and peer exchanges to distribute information about proven countermeasures to reduce disparities in fatalities and serious injuries. More information on public health studies and local practices can be found [here](#).
- *Complete Streets Initiative*: The HEP will continue reviewing current Statewide pedestrian and/or cyclist plans and develop a report on the evidence-based practices that advance safety and accessibility across the highway network. The HEP is also supporting efforts to conduct a National Complete Streets Assessment that will capture best practices for Complete Streets implementation including efforts to incorporate equity considerations and reduce pedestrian and cyclist crashes.

Additional Evidence-Building Activities: In future updates to the Learning Agenda, NHTSA and FHWA will explore:

- How to leverage [Infrastructure Investment and Jobs Act](#) programs and initiatives to improve pedestrian and cyclist exposure data and assess risk to vulnerable road users;
- How to enhance the partnership with the Maryland Transportation Institute and Maryland Department of Transportation in refinement of the [Vulnerable Road User Density Exposure Risk Dashboard](#);
- Enhancing research and testing on vehicles that can sense the environment around them and communicate that information to other vehicles, infrastructure, and personal mobile devices ([Vehicle-to-Pedestrian Communications](#));
- Continuing the development of [Model Inventory of Roadway Elements](#) to fully include pedestrian and bicycle infrastructure that improves safety, and developing analytics tools that can be used by agencies to identify needs and document progress; and
- Continuing exploration into the [Safety Data Initiative](#) to integrate existing data and new “big data” sources on pedestrian and cyclist safety.

Data Sources

There are three main types of data that will be employed to answer the priority questions: traffic crash data, roadway data, and data on the movement of people walking and biking.

Traffic Crash Data

This includes data on gender and race from sources such as:

- Fatality Analysis Reporting System
- Other publicly available State and local crash data
- Highway Safety Information System (includes roadway data)
- SHRP 2 Naturalistic Driving Study Data

Roadway Data

This includes data on road attributes from sources such as:

- Highway Performance Monitoring System
- Integrated Transportation Information Platform
- Policy Information Data Platform
- National Performance Management Research Data System
- Other publicly available State and local data

Pedestrian and Bicycle Movement Data

- National Household Travel Survey
- American Community Survey
- Location-based data (Cuebiq, Streetlight, Maryland Transportation Institute, etc.)
- Local and regional government counts of pedestrians and bicyclists
- Traffic Monitoring and Analysis System

NHTSA uses several data sources to understand broader risks that impact pedestrian and cyclist safety. In addition to the sources below, NHTSA also conducts observational studies and demonstration projects and collects data to answer specific research questions on pedestrian and bicyclist behavior.

- Fatality Analysis Reporting System
- Crash Investigation Sampling System
- Crash Report Sampling System
- Centers for Disease Control and Prevention Vulnerable Populations Tool
- National Emergency Medical Services Information System

Anticipated Challenges and Mitigation Strategies

There are many ongoing pedestrian and cyclist safety studies within, and external to the Department, which presents a high risk for duplication of effort. To mitigate this, a working group of experts will be convened to track recent and planned studies and inform the best approach to answering the priority questions.

There are multiple challenges with data collection related to all priority questions. Existing data sources on contributing pre-crash factors are limited. Additionally, post-crash data may not provide enough information to understand the equity considerations the Department needs to address. Data collection on attitudes related to specific interventions would support answering the priority questions, but survey administration would require PRA clearance. To address these limitations, the Department collaborates and coordinates across agencies to improve existing data collection in States and localities.

Measuring a direct link between countermeasure implementation and crash and fatality reductions is challenging. NHTSA will use specific qualitative and quantitative implementation, process, and outcome measures to assess how well countermeasures are adopted, implemented, and evaluated. To further analyze implementation of effective countermeasures at the State and local levels, FHWA and NHTSA will develop performance measures to specifically address pedestrian and bicyclist safety. More information on this issue and additional planned studies can be found [here](#).

FOCUS AREA: IMPROVING AVIATION SAFETY AND EFFICIENCY

This focus area aligns with the **Safety** Strategic Goal and the **Safe Systems** Strategic Objective of the DOT's FY 2022 - 2026 Strategic Plan.

Overview

Weather is a contributing factor in 35% of general aviation accidents, and 75% of those mishaps involve fatalities, according to both the Federal Aviation Administration (FAA) and the National Transportation Safety Board (NTSB). Without weather information, pilots are unable to make informed decisions, which leads to aviation accidents and flight interruptions.

Weather camera images from FAA and non-FAA (e.g., State DOT-owned) weather camera systems are used for enhanced situational awareness and the images are made available free to the aviation community on a [public website](#). When combined with other available textual weather products, weather camera images become a powerful "go-or-no-go" aeronautical flight decision tool. Implementation of the FAA weather camera service across the State of Alaska resulted in an 85% reduction in weather-related accidents and a 69% reduction in weather-related flight interruptions. The NTSB and the General Aviation Joint Steering Committee made recommendations to expand the FAA weather camera service throughout Hawaii and the continental United States. FAA concurs with this recommendation and seeks to build evidence to inform decisions on prioritizing weather camera locations.

Currently, 234 cameras are installed across Alaska and Hawaii. FAA plans to expand its coverage to include the installation of weather cameras at 330 additional locations across Alaska and the continental United States. There are two major investment decisions related to which locations receive weather cameras. An investment analysis readiness decision will be made in Q2 of FY 2022 and the final investment decision will be made in FY 2023 Q2. The weather camera implementation schedule will be determined following the final decision.

Relevant Operating Administrations

Federal Aviation Administration (FAA)

Priority Questions

Which locations would most benefit from weather camera services?

Evidence Building Activities

To determine the locations that will benefit from weather camera services, FAA will conduct foundational fact-finding to analyze accident data to identify risk areas for weather-related accidents. Route data will also be analyzed to determine common mountain pass routes that would benefit from weather camera services. Input from stakeholder groups such as pilot organizations, operators, and the Flight Service will be collected to validate and refine the analysis.

Prioritization of locations will be completed by conducting a cost-benefit analysis for each potential location. Benefits that will be considered include reduction in accident rates and efficiency savings resulting from a reduction in flight interruptions. Additional details on the methodology are under development and will be included in future iterations of the Learning Agenda. FAA will complete these analyses prior to the investment analysis readiness decision in FY 2022 and conduct additional analysis as needed to inform the final decision in FY 2023.

Data Sources

FAA will use aeronautical data such as airport and weather station locations, NTSB accident data, terrain, and route information to determine the optimal locations for weather camera services. Stakeholders such as pilots and operators, Flight Service Specialists, and the National Weather Service will also be polled to assess and prioritize locations.

Anticipated Challenges and Mitigation Strategies

FAA has limited resources to implement and maintain camera services. Location selection will require input from a diverse group of stakeholders and will require analysis of a large and diverse set of data sources. A Stakeholder Engagement Plan will be created to expand the State DOT partnership program to encourage State DOTs to implement and maintain camera systems. FAA will provide the national network and website to distribute the camera images to the aviation community. Additional challenges specific to the methodology may be identified once it is fully developed.

CLIMATE PRIORITY QUESTIONS

FOCUS AREA: REDUCING TRANSPORTATION GREENHOUSE GAS EMISSIONS

This focus area aligns with the **Climate and Sustainability** Strategic Goal and the **Path to Economy-Wide Net-Zero Emissions by 2050** Strategic Objective of the DOT's FY 2022 – 2026 Strategic Plan.

Overview

Transportation is the largest source of greenhouse gas (GHG) emissions in the United States, accounting for 33% of total emissions in CY 2019. The Biden-Harris administration has announced an economy-wide goal of net-zero U.S. GHG emissions by CY 2050, with 50 to 52% reductions by CY 2030 (compared to CY 2005 levels). To meet the President's goal and tackle the climate crisis, a comprehensive decarbonization strategy for the entire transportation sector across all modes is needed, including both DOT-specific authorities and other stakeholders in the transportation sector.

The DOT Climate Change Center will coordinate with Federal partners to develop a whole-of-government approach to reducing transportation-related emissions. All DOT Operating Administrations will produce modal-specific action plans, which will identify clear, feasible actions that each Operating Administration will take to reduce emissions and reach key domestic milestones in the short (CY 2026), medium (CY 2040), and long term (CY 2050). The DOT Climate Change Center seeks to use evidence to develop these modal strategies and will continually build evidence to support plan updates.

Relevant Operating Administrations

All Operating Administrations

Priority Questions

- Which DOT strategies are projected to be most effective in reducing transportation GHG emissions?
- *Additional questions to be included in an FY 2023 Learning Agenda update, following development of the Department's decarbonization strategy.*

Evidence Building Activities

In CY 2022, all Operating Administrations will submit proposed strategies to be included in their modal action plans. All submissions require evidence demonstrating forecasted impact through 2050, accounting for future mobility demand. Through partnerships with the Volpe Center and other Federal partners, Operating Administrations will have the opportunity to work with experts to improve the rigor of their models to establish accurate baselines and projected impact.

Additionally, all modal action plans should include analysis or studies to demonstrate the projected impact of their strategies. The DOT Climate Change Center will review evidence-building priorities submitted by Operating Administrations to assess the effectiveness of strategic actions for decarbonization. This review will result in an update to the Department's Learning Agenda in early FY 2023.

In support of all activities described above, the Department will strengthen its evidence base by monitoring recent and ongoing transportation GHG emissions research conducted by DOT partners, including Federal partners, the National Bureau of Economics Research, the Transportation Research Board, colleges and universities, and the Volpe Center.

Data Sources

To support emissions modeling, Operating Administrations will utilize data sources that include but are not limited to: DOT travel demand forecasts; GHG emissions data from the Environmental Protection Agency's report on Inventory of U.S. Greenhouse Gas and Emissions and Sinks; U.S. Department of Energy studies on reducing emissions from passenger cars and light and heavy trucks; analytical data from modeling results associated with the DOT strategy report and from Federal partners; and data from other transportation analyses conducted by DOT research partners.

Additional data sources will be selected for specific studies and analyses in FY 2023.

Anticipated Challenges and Mitigation Strategies

Potential challenges for emissions modeling include:

- Resource constraints within Operating Administrations and Federal partners
- Data gaps at the modal level of detail
- Modeling capability limitations
- Projecting future mobility trends and potentially disruptive technologies

To mitigate these challenges, the DOT Climate Change Center will coordinate with climate and data experts within DOT, as well as with Federal and university partners, to ensure that the best possible data and real-world inputs inform modeling and analysis.

EQUITY PRIORITY QUESTIONS

FOCUS AREA: EQUITY IN THE DOT WORKFORCE

This focus area aligns with the **Equity and Organizational Excellence** Strategic Goal and the **Workforce Development** Strategic Objective of the DOT's FY 2022 – 2026 Strategic Plan.

Overview

To advance the DOT Equity goal in the FY 2022 – 2026 Strategic Plan, the Department aims for the share of DOT personnel by sex, disability, and ethnicity/race to mirror representation in the U.S. labor force and for earnings to be equal for all persons with the same skill sets regardless of sex, disability, or ethnicity/race. This is consistent with [Executive Order No. 14035 on Diversity, Equity, Inclusion, and Accessibility in the Federal Workforce](#).

The Department maintains detailed data on prospective and current employees as part of its core operations. As part of the equity assessments performed pursuant to [Executive Order No. 13985 on Advancing Racial Equity and Support for Underserved Communities Through the Federal Government](#), the Department used this data to create a baseline summary of demographic data for applicants and employees, as well as earnings data for employees. The assessment suggested disproportionate diverse representation of differing magnitudes across Operating Administrations and occupations. The Department could better understand the diversity gaps through additional analysis of data collected from the Monster application platform.

Relevant Operating Administrations

All Operating Administrations

Priority Questions

What are the demographics of applicant pools for all DOT occupations?

Evidence Type

In answering this question, DOT plans to develop and implement strategies to increase diversity, with a focus on gender diversity, of the applicant pool for DOT's mission-critical occupations with underrepresentation of women, people of color, and people with disabilities. To support the development of these strategies, DOT is partnering with the Volpe Center to complete an analysis of hiring data.

The Volpe Center will develop statistical models to assess the factors that significantly affect differences in hiring for the DOT workforce, and to identify the most influential factors affecting the eligible applicant pool. Statistical modeling can control for confounding factors (e.g., race and sex, job series, grade, and Operating Administration) to identify any primary factors that are associated with workforce differences. Volpe will also complete an exploratory analysis to better understand the characteristics of persons with disabilities applying to the DOT, as well as current DOT employees.

The Volpe Center's analysis is estimated to be completed in summer 2022. The results will inform additional priority questions for future iterations of the Learning Agenda. These evidence-building activities will support future analyses around increasing the diversity of DOT applicant pools, including identifying evidence-based strategies for improving diversity, determining the return on investment of recruitment activities for diverse applicants, and assessing the extent to which current assessment tools unintentionally facilitate gender and diversity gaps in hiring.

Data Sources

Data sources that will be used to answer this question include:

- Self-reported applicant flow data obtained from the DOT staffing system segmented by occupation
- Hiring data from FAA, specifically for the Air Traffic Control position

Anticipated Challenges and Mitigation Strategies

Voluntary reporting of demographic data through the staffing system may result in incomplete data. Additionally, there may be discrepancies between the data pulled from these sources and the data provided by FAA.

The Volpe Center will review the data for any potential gaps and compile data into a standardized format for statistical analysis. Data compilation will include identifying General Schedule classification equivalents for FAA positions.