



Work Plan to Provide Federal Support for Local Decision-making

Section 25003, Infrastructure Investment and Jobs Act

Prepared by the Bureau of Transportation Statistics



U.S. Department of Transportation
Office of the Secretary of Transportation

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List of Acronyms

Abbreviation	Full Name
AAPA	American Association of Port Authorities
AASHTO	American Association of State Highway and Transportation Officials
ACI-NA	Airports Council International - North America
AI	Artificial Intelligence
AMPO	Association of Metropolitan Organizations
APTA	American Public Transportation Association
BCA	Benefit-Cost Analysis
BTS	Bureau of Transportation Statistics
CAV	Connected and Autonomous Vehicles
CFS	Commodity Flow Survey
CIPSEA	Confidential Information Protection and Statistical Efficiency Act
CMF	Crash Modification Factors
COG	Council of Governments
COVID-19	Coronavirus Disease 2019
EV	Electric Vehicle
FAF	Freight Analysis Framework
FLOW	Freight Logistics Optimization Works
GIS	Geographic Information System
GMNS	General Modeling Network Specification
GPS	Global Positioning System
HOV	High Occupancy Vehicle
IIJA	Infrastructure Investment and Jobs Act
IoT	Internet of Things
LBS	Location-Based Service
LCA	Life Cycle Assessment
LIDAR	Light Detection and Ranging
ML	Machine Learning
NACo	National Association of Counties
NADO	National Association of Development Organizations
NCAI	National Congress of American Indians
NHS	National Highway System
NLC	National League of Cities
NTAD	National Transportation Atlas Database
OEM	Original Equipment Manufacturers
PBPP	Performance-Based Planning and Programming
PPI	Producer Price Index
RPO	Rural Planning Organization
RTPO	Regional Transportation Planning Organization
TIMS	Transportation Infrastructure Management Software
TRB	Transportation Research Board
USDOT	United States Department of Transportation
USG	United States Government

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CHAPTER 1. INTRODUCTION

1.1. Background

The Infrastructure Investment and Jobs Act (IIJA), Public Law 117-58 Section 25003 requires the Bureau of Transportation Statistics (BTS) to determine, through local outreach, the data analysis tools needed to assist local communities in making infrastructure investment decisions. Specifically, the outreach needs to include geographically diverse planning and infrastructure decision-making officials in units of local government, including but not limited to:

1. States
2. Political subdivisions of States
3. Cities
4. Metropolitan planning organizations
5. Regional transportation planning organizations
6. Federally recognized Indian Tribes

Not later than one year after the date of enactment of this law, BTS is to develop a work plan based on the outreach results and submit it to the Secretary.



1.2 Infrastructure Investment and Planning Decision-making Goals

The outreach effort was structured to identify data analysis tools needed to help units of local governments address the following goals:

- A. Improving maintenance of existing assets
- B. Rebuilding infrastructure to a state of good repair
- C. Creating economic development through infrastructure development
- D. Establishing freight plans and infrastructure that connects the community to supply chains
- E. Increasing options for communities that lack access to affordable transportation to improve access to jobs, affordable housing, schools, medical services, foods, and other essential community services
- F. Reducing congestion
- G. Improving community resilience to extreme weather events
- H. Other subjects as the BTS Director determines to be necessary such as infrastructure resilience to cyber-attacks, transportation system safety, and transportation equity

While the outreach effort started with these issues and focused on data analysis tools, participating officials encouraged BTS to expand this effort beyond the “tools” discussion to include federal support to fill the data gaps and provide technical assistance on what data to use and how to use them appropriately, how to fill local data needs, and what analysis tools to use and how to use them accurately. As such, this work plan includes not only federal support for local decision-making on data analysis tools but also for data and technical assistance.

1.3 Participating Governments and Organizations

Table 1 summarizes the external organizations participating in the listening sessions.

Table 1 Summary of External Organizations Participating in Outreach

External Outreach Participants	
External Stakeholder Type	Participating Organization
States	American Association of State Highway and Transportation Officials (AASHTO)
Political subdivisions of States	National Association of Counties (NACO)
Cities	National League of Cities (NLC)
Metropolitan planning organizations	Association of Metropolitan Planning Organizations (AMPO)
Regional transportation planning organizations	National Association of Development Organizations (NADO)
Federally recognized Indian Tribes	National Congress of American Indians (NCAI)
Transportation subject matter experts, researchers, and advocates	American Association of Port Authorities (AAPA) American Public Transportation Association (APTA) Airports Council International - North America (ACI-NA) Transportation Research Board (TRB) American Public

In addition to the external stakeholders, listening sessions and technical discussions were conducted with federal partners and United States Department of Transportation (USDOT) Operating Administrations. Overall, 15 listening sessions and 2 technical discussions were conducted.

1.4 Work Plan

Pursuant to IIJA Section 25003, the work plan should include:

1. A description of the data and analysis tools identified that would benefit infrastructure decision-making by local governments and address the goals described in section 1.2
2. A review of the datasets that local governments need to effectively use the data analysis tools
3. An identification of existing or proposed data analysis tools that use publicly available data
4. The estimated costs to implement needs described in (1) and (2)
5. A prioritization for the development of data and analysis tools
6. A determination as to whether it would be appropriate for the federal government to develop the identified data and analysis tools

Chapter 2 summarizes the planning and infrastructure investment decision-making data and analysis challenges that surfaced during outreach. Chapter 3 outlines the individual work plans on how to provide federal support to assist local decision-makers in addressing major decision making goals. Specifically, each work plan includes an implementation plan and the estimated implementation costs.

1.5 Path Forward to Implementation

Section 25003 (d) of IIJA directs the Secretary of Transportation to implement the proposed work plan by developing data analysis tools, purchasing datasets, and executing other programs as prioritized in the work plan. The implementation is subject to the availability of appropriations. Section 25004 of IIJA authorizes \$10,000,000 for each fiscal years 2022 through 2026 to be appropriated to the Secretary for use by the Bureau of Transportation Statistics.

While BTS stands ready to implement the proposed work plan, strong Secretarial support for appropriated funds or funding through other departmental programs is imperative for BTS to provide the data and analysis tools desperately needed by state, local, and tribal governments to inform their infrastructure investment and planning decisions.





CHAPTER 2. DATA ANALYSIS AND TECHNICAL ASSISTANCE NEEDS

2.1 Data and Tool Needs

Local decision-makers participating in the listening sessions were asked about decisions they need to focus on, and the data and analysis challenges they face to inform those decisions. Specifically, participants were asked to discuss the analysis they would have conducted to inform their decision-making, should data and analysis tools be available. A deep dive was followed into datasets/tools that need to be updated or developed. The following summary of tool and data needs was compiled from these listening sessions.

Table 2 Summary of Top Data and Tool Needs for Local Decision-making

Local Decision-making Top Data and Tool Needs		
Decision-making Goals	Top Data Needs	Top Tool Needs
Reducing congestion	Travel demand management data summaries Region-wide land use and density data Granular demographic data for a remote/hybrid work society Freight bottleneck data Parking availability and utilization data	Real-time access to and analysis of traffic and incident data Density trend analysis tool Multimodal network analysis tool
Economic development	Electric Vehicle (EV) transition cost data and infrastructure inventory Environmental Life Cycle Assessment (LCA) data Granular demographic and employment data by industry and location	Better performance-based budgeting tools to set investment priorities and justify expenditures
Rebuilding Infrastructure	Asset disposal/lifecycle end dates Robust inflation, construction material and labor cost data	Infrastructure asset management software Dynamic cost estimation tool that incorporates inflation
Improving maintenance of existing assets	Geo-coded local road network data Asset condition data on local and non-motorized assets Access to Light Detection and Ranging (LIDAR) data Historical federal spending and impact data Assets prone to repetitive extreme weather data Enterprise asset inventory data warehouse	Predictive tools to spot future issues National web map with functional classifications, conditions, and future projects Tool for unmet transit demand to calibrate demand models and prioritize rebuilding assets
Community resilience to extreme weather	Enterprise asset inventory data warehouse Flooding hotspot data Altitude and ponding added to roadway inventory Climate and environmental trend data	Scripted and customizable spatial weather and flood models Simulation tool to measure impacts of high-risk extreme weather events
Connecting communities to supply chains	Granular freight tonnage data Robust middle-mile and last-mile data Commodity flow by Rural Planning Organization (RPO), Regional Transportation Planning Organization (RTPO), and Council of Governments (COG) boundaries Warehouse and logistics land use data Robust data on domestic versus foreign freight transportation investments	Port community system platform Secure platform for freight operators to provide data to the public sector

continued next page

Table 2 Summary of Top Data and Tool Needs for Local Decision-making (continued)

Local Decision-making Top Data and Tool Needs		
Decision-making Goals	Top Data Needs	Top Tool Needs
Increasing options for access to affordable transportation	Pedestrian and bicycle count and infrastructure inventory Transit routes and frequencies	Tool for summarizing and visualizing travel behavior Travel demand models, especially micromobility Land use monitoring system to support vulnerable areas
Equity+	Granular equity metric data, including demographics (such as transit ridership) Locations for opportunities and services data	Equity outcome reporting tool Equity project prioritization tool
Safety+	Non-arterial crash, non-fatal crash, near miss, real time non-reported incident, and non-vehicular data Non-police report data Timely incident hotspot data with spatial information for first responders and enforcement Cellular and vehicle-based data	Standardized tools to compare crash data sources Tool to leverage Crash Modification Factors ¹ (CMF) for sketch planning Safety project prioritization tool

+Decision-making goals excluded from Section 25003 but determined necessary by the BTS Director.

2.2 Central Themes

In conducting the local outreach, BTS noted recurrent data analysis challenges raised by the local decision-making official regardless of the decision-making goals (e.g., asset management, accessibility and equity, economic development). The eight central themes are:

- **Granular Data**

Effective decision-making relies on the availability of granular data and tools appropriate for the relevant decision-making level of geography. For local transportation, this includes information on lower functional class roads and infrastructure, middle- and last-mile freight movement, and transportation statistics hewing to the jurisdictional boundaries of decision-makers. Furthermore, local decision-makers identified a prominent need to adapt evidence-based approaches to support rural and smaller community leaders by providing tools based on granular data that are tailored to, and representative of, their vast and varied geographies, their diverse constituents, and their infrastructure assets.

- **Data Standardization**

Over the past decade, the amount of data collected or produced has risen exponentially. At the same time, the use and management of transportation infrastructure involves private and public entities that often operate in silos. Local decision-makers identified the lack of data standards and non-standardized data warehousing procedures and architectures as impedances to data-sharing efforts that could unlock new insights.

¹ A crash modification factor (CMF) is a multiplicative factor used to compute the expected number of crashes after implementing a given countermeasure at a specific site. The CMF clearinghouse is available at, <https://www.cmfclearinghouse.org/>.

A standardized data warehouse for participants to share and access data would support greater understanding of our transportation enterprise. Relatedly, the need for standardized GIS/roadway network data persists for local agencies.²

- **Non-Vehicular and Non-National Highway System Data**

Both internet advances and telecommuting policy have provided new dimensions to transportation access issues, reshaping our travel behaviors and travel demand forecasts. While transportation has long focused on commute-to-work, local agencies are expressing the need for data on changing travel behavior associated with a remote/hybrid work society. Understanding the changing needs of its users would allow local agencies to better design/manage their assets to serve travel needs for all. The increasing adoption of complete-streets and the increasing desire for active transportation options have further shaped the future of local infrastructure. To keep pace with complete-street planning and non-vehicular travel patterns, local decision-makers expressed a need for data on active transportation, micromobility, and data for lower functional class facilities.

- **Multimodal Network Model and Analysis**

Local transportation practitioners are building and maintaining a multimodal network. This is in responding to a need for highway, transit, freight, and rail projects that work together seamlessly to make the nation's systems safer and more resilient, accessible to opportunities, and efficient to move goods. The need can only be met by analysis tools that consider data on all modes, enable visual analytics, measure modal connections, and prioritize modal options across the system. While limited multimodal network analysis tools exist, their current functionality and capability are often not fit to support local decisions. For example, tools providing little context on modal trade-offs, limited data on multi-jurisdictional freight movements, and economic drivers that may induce changes in a community.

- **Private-Sector Data and Multi-Jurisdictional Collaborations**

As passive data collection efforts and the use of administrative records advance, traditional survey methods are being repositioned in data portfolios. Access to private-sector data has subsequently increased in value for transportation decision-making. To better understand local transportation system usage, define travel behaviors, characterize the decision-making process of the private sector, and identify infrastructure improvements, local officials see the benefits of a public-private data-sharing collaboration. This collaboration would be particularly useful to characterize middle- and last-mile freight movement and regional travel patterns. With access to this data, local decision-makers believe that they would be better positioned to reduce congestion, provide access to opportunities and spur economic development in their communities. The abundance of private-sector data and the opportunities for it to transform our understanding of the transportation system are vast. Local decision-makers are seeking assistance on partnering with private vendors for data and tools. Furthermore, local decision-makers are encouraging data sharing between the federal government and third parties. While purchasing data beyond their jurisdictional borders can be cost prohibitive, local decision-makers believed that neighboring communities may hold the data key to more informative regional network analyses through data sharing. The lack of multi-jurisdictional data for local decision-making is a roadblock to design a network that connects communities, across jurisdiction boundaries, to critical services and opportunities. That roadblock could be alleviated with more robust data-sharing collaborations.

² The Geospatial Data Act of 2018 requires BTS to provide leadership to facilitate the development and implementation of geospatial data standards for the National Geospatial Data Asset data theme, with a particular emphasis on a data content standard for the National Geospatial Data Asset data theme. This is a multi-year consensus driving process that is underway.

- **Funding and Grant Opportunities**

The U.S. Department of Transportation (USDOT) administers a wide range of discretionary grant opportunities for local agencies. Local officials expressed concerns over the analytical complexity and the extensive data requirements needed to apply for a grant. These concerns are noted as burdensome and requiring costly external consultancy support. Straightforward cost estimation tools are desired by local officials who need to plan for inflation in developing cost proposals. Relatedly, local officials are seeking more and stronger Benefit-Cost Analysis (BCA) tools to be better prepared for infrastructure investment opportunities and better stewards of their limited community resources.

- **Clear Definition and Use Expectation of Equity Metrics**

With equity a core part of the USDOT mission and the infusion of equity criteria into federal programs, local communities are seeking support to clearly define, measure and visualize equity. With clearer definition and use expectations of equity metrics, local decision-makers would be better equipped to navigate this nascent and complex field and invest in options that connect their communities to labor, markets, and opportunities through affordable transportation options.

2.3 Technical Assistance

The local outreach to decision-makers across the nation also revealed a significant shared need for data-focused technical assistance—ranging from basic assistance on data collection and project development to understanding the correct data and tools to use for different decision-making goals. Given the demand and the varying degrees of readiness to practice evidence-based decision-making, more targeted technical assistance is fundamental for building the capacity of local infrastructure investment decision-making. While data and tool availability are imperative, the resources can only drive transformative outcomes if put into action. Training local decision-makers to use data and tools, especially ubiquitous technology for geospatial and predictive analytics, will enable them to make evidence-informed infrastructure investments and to communicate those decisions to their communities.

As non-federal partners will deliver most of the IIJA funded projects, the federal government recently released a guide of federal resources to help local communities apply for and deploy the infrastructure funding. The guide identifies several existing USDOT programs including the newly created Thriving Communities Program that will provide in-depth, hands-on technical assistance to regions and local communities.³

2.4 Summary

The greatest need of the local officials is complete, timely, and granular benchmark data to tell the stories of their communities, to inform planning and infrastructure investment decisions, and to measure and deliver better investment outcomes. The call for improved data was a distant second to a more basic need of greater technical assistance. While the need for tool development was not as pronounced as the need for more technical assistance and/or for more timely and granular data, those local officials engaged in the listening sessions made it clear that continued tool refinements are needed to keep pace with technology advancements and mounting decision-making priorities.

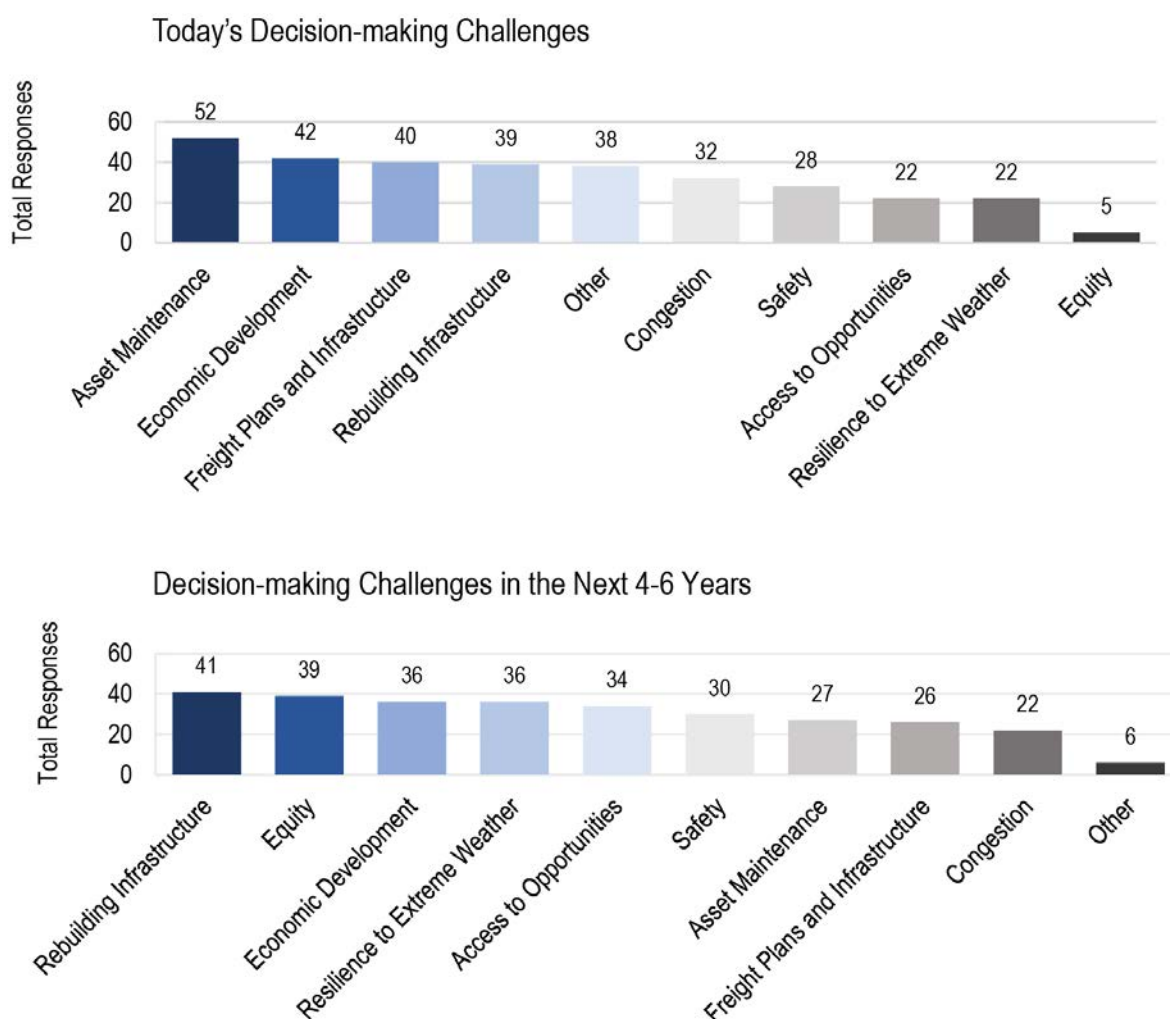
³ On May 18, 2022, the federal government released the Bipartisan Infrastructure Law Technical Assistance Guide, a list of federal resources to help communities deliver infrastructure projects. The guide is available at https://www.whitehouse.gov/wp-content/uploads/2022/05/Infrastructure-Technical-Assistance-Guide_FINAL2.pdf



CHAPTER 3. WORK PLANS TO ADDRESS DECISION-MAKING CHALLENGES

More than 380 local decision-making officials and stakeholders attended 15 listening sessions. They were asked to rank their top three decision-making challenges of today and those four to six years from now (Figure 3). The feedback from the listening sessions informed the prioritization of the work plan development. Since the primary goal of advancing equity is to improve affordable transportation access to opportunities, we combine the “Equity” and “Access to Opportunities” challenges into one. And, since one of the objectives of asset management is to strengthen resilience of the existing assets, the decision-making challenges on “Asset Management” and “Resilience” are combined.

Figure 3 Ranked Summary of Current and Future Local Decision-making Challenges



Notes: "Current" ranking is based on 320 responses and "4-6 Year" ranking is based on 297 responses. The "Other" category includes additional decision-making challenges not explicitly stated.

Based on the rankings and prioritization, federal support for data and data analysis tools are most needed to:

1. Improve maintenance of existing **assets** to reduce congestion and strengthen resilience;
2. Create **economic development** through infrastructure development;
3. Establish **freight** plans and infrastructure that connect the community to supply chains;
4. Rebuild infrastructure to a **state of good repair**; and
5. Advance transportation **equity** by increasing options for communities to improve **access** to jobs, affordable housing, schools, medical services, foods, and other essential community services.

This chapter outlines the individual work plans on how to provide federal support to assist local decision-makers in addressing each of these challenges and preliminary order of magnitude cost estimates to implement.



3.1 IMPROVE ASSET MANAGEMENT, MAINTENANCE, AND RESILIENCY

This work plan focuses on what support is needed to assist local decision-makers with improving management and maintenance of existing assets and improving community resilience to extreme weather, cyber-security, and other unplanned events.

3.1.1 Key Data, Analysis Tools and Technical Assistance

In addition to needs on data and analysis tools, the local decision-making officials also raised the need for federal support on technical assistance. Table 3.1.1 summarizes the identified needs to improve the management, maintenance, and resiliency of assets.

Table 3.1.1 Summary of Data, Analysis Tools, and Technical Assistance for Asset Management, Maintenance, and Resiliency

Federal Support Needed	Identified by Decision-making Organizations
Data	
Nationally standardized GIS/roadway network data	AASHTO, AMPO, APTA, NADO, NLC
Robust asset condition data on local infrastructure and non-motorized assets	AASHTO, AMPO, APTA, NADO, NLC
GIS and LIDAR integration	AASHTO, AMPO, NACo, NCAI, TRB, USG
Data on historical dollars spending by location – (see section 3.4)	AASHTO, NADO, Public, USG
Asset vulnerability index	AASHTO, NACO, NADO, Public, USG
Enterprise data warehouse of all asset inventories across agencies	AAPA, Public, TRB, USG,
Flooding hotspot data	AMPO, NADO, NLC, Public, TRB, USG
Altitude and ponding added to roadway inventory	AMPO, TRB
Climate and environmental impact	AASHTO, ACI-NA, AMPO, NADO, NLC, TRB
Analysis Tools	
Predictive tools to spot infrastructure issues before they occur (using AI/ML technologies)	AASHTO, NADO, Public, USG
Robust infrastructure asset management software – (see section 3.4)	AAPA, NACO, NADO, NLC
Cost estimation tool (dynamic system that incorporates inflation) * – (see section 3.4)	NACO, NADO, NLC, Public, USG
Scripted and customizable spatial weather and flood models*	AASHTO, AMPO, TRB
Simulation tool to estimate impacts of high-risk extreme weather events*	AMPO, TRB, Public
Technical Assistance	
Training on GIS and/or LIDAR data	AASHTO, AMPO, NACo, NCAI, TRB, USG
Capacity building for multi-modal and multi-jurisdiction solutions	Public
Best strategies for HOV lanes	NACo
Information on “Buy America” equipment and regulation impacts	AAPA

*Identified as using publicly available data or suitable for primary use of publicly available data inputs pursuant to Section 25003.

3.1.2 Work Plan

To protect and maintain investments in local systems, decision-makers require an innovative approach where automated data collection streams—imagery, fixed sensors, mobile sensors, and crowdsourcing—are coupled with AI and ML. This approach will produce more timely, quality, and granular information than the traditional approaches to support multimodal infrastructure decision-making. Unfortunately, exorbitant cost, technology constraints, and lack of skillsets limit the widespread adoption and applications of this approach. The proposed work plan includes the following programs:

- **Local Asset Condition Program**

Maintaining asset condition data to meet performance management requirements is extremely labor intensive. Purchasing proprietary data on asset condition is often cost-prohibitive for local communities. The proposed Local Road Asset Condition Program would develop more comprehensive data on all infrastructure assets by: (1) combining GPS, imagery, and sensor data with AI and ML to provide basic local road infrastructure condition data in a uniform manner, (2) enlisting citizens to “contribute” to data production and maintenance through crowdsourcing, (3) developing tools to predict asset conditions, and (4) creating a national data repository of local road asset conditions and an enterprise data warehouse with scalable data architecture that achieves private sector data and data with small geographic resolution. The scalable architecture will enable data aggregation to the national level and consistent evaluations across modes and jurisdictions.

- **Road Network and Equipment Program**

Local decision-makers benefit from access to more complete, standardized spatial data that reveals roadway conditions and how various roadways are used in conjunction with each other to create connected roadway networks. The Road Network and Equipment Program would provide a solid foundation to visualize asset conditions, location of roadside hardware, congestion predisposition, and extreme weather susceptibility by: (1) using ML or deep learning object recognition techniques in conjunction with imagery to create a national geospatial inventory of roadway features, traffic control devices, and roadside hardware to enable multi-modal analysis, and (2) using open data and crowdsourcing to enhance programs such as the General Modeling Network Specification (GMNS) and building a national repository to improve the standardization and sharing of routable road network data for network analysis.

- **Transportation Vulnerability and Resilience Data Program**

Natural hazards often damage infrastructure which is expensive to repair, restore, and replace. They also disrupt travel which adversely affects the economy and people’s quality of life. The intensity and the scale of natural hazards are further compounded by climate change. Yet, the vulnerability of our nation’s transportation infrastructure to those hazards is not well understood. Not understanding system vulnerability makes ensuring system resiliency—ability to withstand and recover quickly—increasingly challenging.

The Transportation Vulnerability and Resilience Data Program would estimate the vulnerability of the transportation system to direct and indirect disruptions caused by extreme weather and other unexpected events (e.g., Colonial Pipeline cyber-attack, pandemic like COVID-19, other supply chain disruptions) and the ability of the national transportation system to recover from those disruptions. Specifically, the Program would develop and implement a Criticality Index for the major transportation assets, collect data and develop vulnerability metrics for each of the major transportation assets identified in the Criticality Index.

The data would serve agencies and industry, aware of the importance of resilience but faced with limited budgets, who require evidence to understand the degree to which vulnerability exists in their assets and systems and the degree to which resilience needs to be incorporated into future investment decisions. The Transportation Vulnerability and Resilience Data Program would use AI, ML, and geospatial modeling and measures to provide data, tools, and statistics that support the development of policies for improving the readiness, resilience, and performance of the transportation system across all modes.

- **GIS and LIDAR Development and Training Program**

Robust GIS data within localities would provide a stronger means to visualize issues such as road condition, congestion proneness, and extreme weather susceptibility. Access to LIDAR technology would present the same opportunity, allowing more comprehensive mapping of existing assets that are monitored from the screen of a computer. With the growth of Connected and Autonomous Vehicles (CAV), even the smallest jurisdictions require high definition LIDAR mapping for local roads beyond the National Highway System (NHS). The GIS and LIDAR Development and Training Program would develop partnerships and offer bulk discounts and cost sharing for localities to access their own internal GIS systems and LIDAR for expediting geospatial data capture. A suite of technical support ranging from targeted local peer exchanges and outreach to training would expand access to these technologies.

To implement this work plan, Table 3.1.2 specifies estimated costs, timing, and federal roles for developing the data and tools and for providing the technical assistance needed to improve local infrastructure asset management, maintenance, and resiliency.

Table 3.1.2 Implementation Roadmap for Asset Management, Maintenance, and Resiliency

Asset Management, Maintenance, and Resiliency Implementation Roadmap					
Program	Product	Estimated Costs		Timing (Years)	Role of Federal Government
		Setup	Annual		
Local Asset Condition Program	AI-based Local Road Data	\$8–10M	\$12M–\$15M	5–7	Develop
	Support use of Crowdsourced Asset Condition Data	\$1M	\$1M	1–3	Broker
	Predictive Tools	\$6M–\$8M	\$2M	5–7	Develop
	Enterprise Warehouse	\$6.5M–\$8.5M	\$3M–\$5M	2–4	Standardize/ Broker/Develop
Road Network and Equipment Program	ML-based National Inventory	\$2M–\$3M	\$1.25M–\$8M	3–5	Develop
	Enhance Use of Crowdsourcing	\$3.5M	\$1.25M–\$3M	3–5	Develop
Transportation Vulnerability and Resilience Data Program	Data and Index	\$6M–\$9M	\$3M	2–3	Develop
	Tools	\$4M–\$6M	\$3M	3–5	Develop
GIS and LIDAR Development and Training Program	GIS	\$1M	\$3M–\$9M	1–3	Broker
	LIDAR	\$1M	\$12M–\$19M	1–3	Broker
	Technical Support	\$1.5M	\$3.5M–\$4.5M	1–3	Develop



3.2 CREATE ECONOMIC DEVELOPMENT THROUGH INFRASTRUCTURE DEVELOPMENT

This work plan focuses on what support is needed to assist local decision-makers with creating economic development through infrastructure development.

3.2.1 Key Data, Analysis Tools and Technical Assistance

In addition to needs on data and analysis tools, the local decision-making officials also raised the need for federal support on technical assistance. Table 3.2.1 summarizes the identified needs to grow an inclusive, sustainable, and competitive economy.

Table 3.2.1 Summary of Data, Analysis Tools, and Technical Assistance for Economic Development

Federal Support Needed	Identified by Decision-making Organizations
Data	
Electric Vehicle (EV) transition cost data	AASHTO, NACo, NADO
EV infrastructure inventory data	AASHTO, NACo, NADO, USG
EV infrastructure needs data	AASHTO, NACo, NADO, USG
Ex-post data on spending impacts on transportation and economic performance	AASHTO, TRB
Environmental life cycle assessment (LCA) data	AASHTO, NACo, NADO, USG
Granular employment data by industry and location for telework analysis	AASHTO, APTA, NACo, NADO, USG
Analysis Tools	
Easy-to-use performance-based planning and programming toolkit	ACI-NA, AASHTO, NACo, NADO
Technical Assistance	
Workforce development on EVs, CAVs, charging station repair, etc.	AASHTO, APTA
Smart guides, case studies, and microlearning for leveraging multiple federal funds	USG
Workforce planning, recruitment, retention, and training	AAPA, APTA, NACo, NCAI, TRB, USG

Note: Data analysis tool noted was not identified as using publicly available data pursuant to Section 25003.

3.2.2 Work Plan

The proposed work plan to support local officials in establishing economic growth opportunities and, at the same time, improving the quality of life in their communities includes:

- **Transition to Electrified Transportation Data Series**

On EV charging infrastructure.

Data are needed to inform decisions about deploying and sustaining electric vehicle charging infrastructure. Current EV owners do 80 percent or more of their recharging at their residences or the EVs home base. Although electricity is already available throughout the U.S., not all vehicle-owning households have access to convenient home-based charging.

Likewise, data are also needed on the availability of workplace recharging stations, especially for workers who depend on curbside parking at home as well as time-of-day recharging demand.

Long-distance trips will be a critical component of the demand for high-speed charging, yet data on long-distance travel by households is scarce and not designed for understanding EV charging behavior.

On EV inventory and usage.

Data on the acquisition, ownership, and use of EVs by households at all income levels are needed to understand the equity effects of the transition to electrified transportation.

While most vehicle owners pay highway user fees when they purchase energy for their vehicles, this is not currently the case for EV owners. The quantity and patterns of electricity consumption by plug-in vehicles are not directly measured, nor are there information systems in place to ensure that EVs pay an appropriate share of the costs of highway infrastructure. Data are needed to quantify EV energy use and to inform decisions about assessing cost responsibility to EVs.

Understanding how and when EVs are charged is important for assessing their impacts on the environment and the electricity grid. Comprehensive and validated data on charging behavior, especially the use of workplace and public charging infrastructure is needed, particularly by households in multi-unit dwellings or lacking off-street parking.

On Heavy-Duty Electric Vehicles.

Better data on the use, energy usage, and duty cycles of medium- and heavy-duty vehicles are needed to understand where electrification can be effective and economical. Basic measures of the energy intensity of medium and heavy-duty trucks are lacking.

- **Transportation Benchmarking Program**

Throughout the COVID-19 pandemic, local decision-makers faced rapid, uncertain and significant transportation and economic changes. The Transportation Benchmarking Program would establish a Transportation Pulse Survey to provide timely statistics and indicators on emerging topics and pressing questions confronting local decision-makers. BTS would combine the best of the legacy BTS Omnibus Survey and Census Pulse Survey by working with national associations representing local agencies to identify topics for inclusion in the monthly survey. The monthly pulse survey would establish performance benchmarks to identify trends and to understand behavior changes. The survey would give local decision-makers access to: (1) rapid statistics and indicators on emerging

topics, (2) demographic and employment data for small geographies with additional industry detail, and (3) transportation spending impacts and economic performance.

- **Training on Performance Based Planning and Budgeting Program**

USDOT, AASHTO, TRB, and others provide tools and guides on how localities should engage in Performance-Based Planning and Programming (PBPP). However, agencies often lack tools and guidance to monitor performance and outcomes following the implementation of PBPP. The Training on Performance Based Planning and Budgeting Program would capitalize on the existing work to provide additional training and support and build out additional easy-to-use tools that would benefit local decision-makers.

- **Environmental Life Cycle Assessment Tools and Training Program**

Environmental Life Cycle Assessment (LCA) is an analysis technique used to understand the complete environmental impacts of a transportation product, system, or process by assessing inputs and outputs over the life cycle of the product or process and quantifying a range of potential environmental impacts. Local decision-makers are interested in understanding the environmental and potential economic impacts as they make long-term tradeoffs. These data are not easy to track for localities, especially given the responsibility overlaps across jurisdictions for assessing the impact of various components over the asset life cycle. The Environmental LCA Tools and Training Program would enhance existing tools for local decision-makers and provide additional targeted technical support through training and peer exchanges.

To implement this work plan, Table 3.2.2 specifies costs, timing, and federal roles for developing the data and tools and providing the technical assistance needed to strengthen local economic development.

Table 3.2.2 Implementation Roadmap for Economic Development

Economic Development Implementation Roadmap					
Program	Product	Estimated Costs		Timing (Years)	Role of Federal Government
		Setup	Annual		
Transition to Electrified Transportation Data Series	EV Survey	\$8M–\$10M	\$2M–\$5M	1–3	Develop
	EV Economics and Finance Data Tool	\$5M–\$7M	\$1M–\$3M	1–3	Develop
	EV Scenario Analysis Tool	\$2M–\$3M	\$1M–\$2M	2–4	Develop
	EV Technical Support	\$2M	\$3M	1–2	Develop
Transportation Benchmarking Program	Transportation Pulse Survey	\$2M–\$3M	\$5M–\$8M	1–2	Develop
	Demographic and Employment Data	\$6M–\$9M	\$15M–\$19M	3–5	Develop
	Economic Performance and Impact	\$5M–\$7M	\$4M–\$8M	2–4	Develop
Training on Performance Based Planning and Budgeting Program	Tool Enhancement	\$2M–\$4M	\$500K–\$2M	2–3	Broker/Develop/Maintain
	Technical Support	\$1M–\$3M	\$1M–\$3M	3–5	Develop
Environmental LCA Tools and Training Program	Existing Tool Enhancement	\$2M–\$4M	\$1M–\$3M	1–3	Broker/Develop/Maintain
	Technical Support	\$1.5M	\$3.5M–\$4.5M	1–3	Develop



3.3 INFORM FREIGHT INFRASTRUCTURE INVESTMENT AND PLANNING

This work plan focuses on what support is needed to assist local decision-makers with establishing freight plans and infrastructure that will connect communities to supply chains.

3.3.1 Key Data, Analysis Tools and Technical Assistance

Local decision-making officials raised the need for federal support on data and analysis tools. Table 3.3.1 summarizes the identified needs to establish freight plans and infrastructure for more resilient and reliable supply chains.

Table 3.3.1 Summary of Data, Analysis Tools, and Technical Assistance for Freight Planning

Federal Support Needed	Identified by Decision-making Organizations
Data	
Granular freight tonnage data (county/localities)	AAPA, ACI-NA, NADO
Middle mile and last mile data	AAPA, NADO, TRB
Commodity flow data by RPO/RTPO/COG boundaries	AAPA, NADO, TRB, USG
Warehousing/logistics land use data	AAPA, ACI-NA, TRB
Timely data on domestic versus foreign capital costs	AASHTO, NACo, NADO, USG
Analysis Tools	
Secure supply chain data-sharing platform*	AAPA, ACI-NA, NADO, Public, USG

*Identified as using publicly available data or suitable for primary use of publicly available data inputs pursuant to Section 25003.

3.3.2 Work Plan

This section highlights opportunities for the federal government to support the next generation of freight data analytics by enhancing the temporal and granular resolution of the tools, integrating new and existing freight data sources and developing new products to fill freight information gaps. The proposed work plan includes the following components:

- **Commodity Flow Resource Modernization**

To complement statistics at the national level, small-area freight origin and destination data and tools are needed for local decision-making. The Commodity Flow Resource Modernization would provide additional geographic detail, rapid information updates, and new products to benefit local freight data analytics.

- **Estimates of Middle-Mile and Last-Mile Freight Movement**

E-commerce revolutionized household and business purchasing patterns and transformed distribution networks. Confronted with the challenges of goods movement in their communities, local officials require support to measure freight trip ends (last-mile) and trips from warehouses to retail and office establishments (middle-mile). The Estimates of Middle-Mile and Last-Mile Freight Movement would establish two separate programs: (1) household logistics patterns, and (2) business logistics patterns. These programs, on their own and as inputs to travel demand models, would better inform local decision-makers of online purchasing patterns and their implications and relationship to transportation and community needs.

- **National Multimodal Freight Network Analysis Program**

To plan for freight movement in their communities, local decision-makers require timely information about key freight nodes. The National Transportation Atlas Database (NTAD) Freight Program would enhance the NTAD with two additional geospatial products. First, the NTAD Warehouse Distribution Center Inventory and Key Freight Facility Layer would provide an inventory of warehouse and distribution center locations and capacities. This would support local decision-makers working with land use and commercial real estate companies to shape the logistics distribution infrastructure.

Second, the NTAD Multimodal Network Analysis Application would develop a network assignment modeling capability that assigns intermodal flow and multimodal tonnage and value over the transportation networks. This product would depict system patterns, usage, and current and future freight flows to improve local decision-making on freight. The Application could be used by local decision-makers to better understand freight movement in their region, create economic development strategies, address infrastructure operations challenges such as bottlenecks, and implement management solutions.

- **Rail System Performance Program**

Rail system performance data is considerably less robust than highway performance data, leading to challenges in multimodal analysis and logistics network optimization for local decision-makers. Imagery and sensors in and around the right-of-way can provide near real-time railroad system performance data and eliminate information gaps. The Rail System Performance Program would standardize key measures of system performance using automated image collection, AI, and ML methods to identify train characteristics, estimate performance measures (e.g. speed, spacing and cycle time), and improve safety planning and management. This program would be modeled after Transport Canada's RailState Visibility Platform.

- **Freight Community Data Exchange**

As highlighted during the recent supply chain disruptions, freight system data silos directly impact local communities. The Freight Community Data Exchange, envisioned as a private sector led initiative facilitated by USDOT, would increase the exchange of proprietary data among freight/supply chain stakeholders. Furthermore, this exchange would improve nationwide freight system resilience. The Freight Logistics Optimization Works (FLOW) initiative would serve as the foundation for a national program. The joint endeavor would connect all freight logistic sectors to improve supply chain monitoring and business decisions. The exchange would ingest, analyze, and protect private sector data using the legal authority given to a Principal Statistics Agency (BTS at the USDOT). Specifically, FLOW would be hosted on a secure platform protected by the authority under the Confidential Information Protection and Statistical Efficiency Act (CIPSEA).

- **Freight Costs and Rates Program**

Federal, state, and local governments are a major source of funding for transportation infrastructure construction. Local decision-makers using tax dollars to fund projects have an interest in getting the best value for their investment by having an understanding of factors contributing to the increasing costs of freight project construction. Relatedly, decision-makers are seeking benchmark cost data to compare with their construction cost estimates. On the economic development side, decision-makers are interested in knowing how competitive their community is for freight movement. Understanding the freight rates charged for different commodities, different modes, and different trade lanes would support the development of an economic development strategy. The Freight

Costs and Rates Program would collect cost data on freight rates of different modes and different trade lanes (e.g., spot rate vs. contract rate) and data on freight infrastructure construction costs.

To implement the proposed work plan, Table 3.3.2 specifies costs, timing, and federal roles for developing the data and tools needed to improve local freight planning.

Table 3.3.2 Implementation Roadmap for Freight Planning

Freight Planning Implementation Roadmap					
Program	Product	Estimated Costs		Timing (Years)	Role of Federal Government
		Setup	Annual		
Commodity Flow Resource Modernization	Modernized CFS	\$12M	\$2.9M	1-3	Develop
	Modernized FAF	\$6.5M-\$8.5M	\$2M	2-4	Develop
Estimates of Middle-Mile and Last-Mile Freight Movement	Household Program	\$2M-\$3M	\$1.25M-\$12M	3-5	Develop
	Business Program	\$3.5M	\$1.25M-\$13M	3-5	Develop
National Multimodal Freight Network Analysis	Inventory and Key Facility Layer	\$3.4M	\$850K	3	Standardize/Broker/Develop
	Multimodal Freight Tool	\$2.6M	\$600K	2	Develop
Rail System Performance Program	Performance Data	\$7M	\$3M-\$5M	3-5	Develop
Freight Community Data Exchange	Community Platform	\$18.4M	\$3M-\$9M	3-5	Broker
Freight Costs and Shipping Rates	Costs and Rates Data	\$1.5M	\$3.5M-\$4.5M	1-3	Develop/Broker





3.4 REBUILD INFRASTRUCTURE TO A STATE OF GOOD REPAIR

This work plan focuses on what support is needed to assist local decision-makers in rebuilding infrastructure to a state of good repair.

3.4.1 Key Data, Analysis Tools and Technical Assistance

In addition to needs on data and analysis tools, the local decision-making officials also raised the need for federal support on technical assistance. Table 3.4.1 summarizes the identified needs to restore and modernize core assets to improve the state of good repair, enhance resiliency, and expand the benefits from projects.

Table 3.4.1 Summary of Data, Analysis Tools, and Technical Assistance for Rebuilding Infrastructure to a State of Good Repair

Federal Support Needed	Identified by Decision-making Organizations
Data	
Lifecycle data for calculating and cataloging infrastructure expiration dates	NADO, NLC, USG
Frequent, geographically detailed material cost data	ACI-NA, AAPA, NADO, NLC
Analysis Tools	
More robust infrastructure asset management software	AAPA, NACO, NADO, NLC
Cost estimation tool (dynamic system that incorporates inflation) *	NACO, NADO, NLC, Public, USG
Technical Assistance	
Asset management	AAPA, NACO, NADO, NLC
Operations guidance for lowering speeds on roads	AMPO, NLC
Proven countermeasures for different crash types compared to crashes reported	NLC

*Identified as using publicly available data or suitable for primary use of publicly available data inputs pursuant to Section 25003.

3.4.2 Work Plan

This section highlights opportunities for the federal government to support local officials in rebuilding their transportation system to better serve the people and the economy through the safe, efficient, sustainable, and equitable movement of people and goods. This proposed work plan includes:

- **Costing Data and Tools Program**

States and other decision-makers have found that contractor competition, seasonality, and factors other than project characteristics affect project costs. Inflation, rising material costs, and supply chain disruptions are on the mind of many local decision-makers. The Costing Data and Tools Program would seek to: (1) use statistical or economic modeling to go beyond the Producer Price Index (PPI) and provide more robust context around how inflation/material cost might impact local construction projects, (2) compile data on historical dollars spending by location, and (3) utilize AI/ML technologies to expand existing tools to provide local decision-makers with a quick, dynamic way to determine optimum construction timing and phasing in particular projects given variable market conditions and prices of materials.

- **Technical Assistance and Training Program on Asset Management Tools**

USDOT, AASHTO and others in the public and private sector have tools that support asset management holistically. For example, the Transportation Infrastructure Management Software (TIMS) has been enhanced significantly over the last decade to allow transportation planners to effectively visualize, manage, and prioritize infrastructure projects in a singular system. The Technical Assistance and Training Program on Asset Management Tools would remove the barriers for local decision-makers to use the existing tools by expanding the targeted technical assistance.

- **Research on and Best Practices of Blending Sensor Data and Traditional Data**

To appropriately use and blend GPS, LBS, and IoT data to plan for a state of good repair, a synthesis of best practices and additional research is needed to develop blending and analysis methods. Best practices and guidance resulting from this research would support improved data validation, bias and imputation, blending with traditional data, strengthening sensor data use, and development of new techniques and methods. The Research on and Best Practices of Blending Sensor Data and Traditional Data would provide straightforward information and easy-to-adopt toolkits for a range of users.

- **Sensor Innovation Platform and Marketplace**

To disseminate emerging sensor products (e.g., vehicle speed data from GPS devices), USDOT would work in partnership with national associations representing local jurisdictions to create a marketplace and platform to access sensor products at reduced cost or free of charge. The Sensor Innovation Platform and Marketplace would provide local decision-makers low cost or free access to a set of core GPS and LBS data and data analysis tools along with fee-based ad hoc data and analysis services.

- **Integration of National Statistical Products**

The Integration of National Statistical Products would allow local decision-makers to address multi- and cross-jurisdictional transportation issues by leveraging existing national statistical products and methods. Products that are developed based on the integration of sensor/LBS data, geospatial data, data from traditional surveys and administrative data would significantly enhance local level geographic specificity. Key partners include, but are not limited to, the U.S. Census Bureau and other federal statistical agencies.

To implement this work plan, Table 3.4.2 specifies costs, timing, and federal roles for developing the data and tools and providing the technical assistance needed to rebuild local infrastructure to a state of good repair.

Table 3.4.2 Implementation Roadmap for Rebuilding Infrastructure to a State of Good Repair

Rebuilding Infrastructure to a State of Good Repair Implementation Roadmap					
Program	Product	Estimated Costs		Timing (Years)	Role of Federal Government
		Setup	Annual		
Costing Data and Tools Program	Costing Data	\$6M–\$8M	\$3M–\$5M	3–5	Develop
	Costing Tool Enhancements	\$5M–\$7M	\$1M–\$2M	3–5	Advise/Develop
Technical Assistance and Training Program on Asset Management Tools	Technical Support and Training	\$2M–\$3M	\$3M–\$4M	1–3	Advise/Develop
	Tool Enhancement	\$3M–\$5M	\$500K	2–3	Advise/Develop
Research and Guidance on Blending Sensor Data and Traditional Data	Synthesis, Research, and Guidance	\$1.5M–\$3.5M	\$500K–\$1.5M	2–5	Advise/Standardize
Sensor Innovation Platform and Marketplace	Platform and Marketplace to access free/reduced cost sensor-based products	\$1.5M	\$10M–\$20M	3–5	Broker
Integration of National Statistical Products	Sensor Based Freight and Passenger Data Products—including vehicle speed and trips	\$1M–\$6M	\$2M–\$6M	1–2	Develop
	Transportation Data Products based on integrated data	\$1M–\$6M	\$2M–\$6M	2–4	Develop





3.5 ADVANCE EQUITY AND ACCESS

A work plan is developed to assist local decision-makers improving their community's access to jobs, affordable housing, schools, medical services, foods, and other essential community services through affordable transportation.

3.5.1 Key Data, Analysis Tools and Technical Assistance

In addition to needs on data and analysis tools, the local decision-making officials also raised the need for federal support on technical assistance. Table 3.5.1 summarizes the identified needs to reduce inequities across transportation systems and all communities.

Table 3.5.1 Summary of Data, Analysis Tools, and Technical Assistance for Equity and Access

Federal Support Needed	Identified by Decision-making Organizations
Data	
Pedestrian and bicycle infrastructure and usage	AASHTO, AMPO, APTA, NADO, NLC
Pedestrian and bicycle count data	AASHTO, AMPO, APTA, NADO, NLC
Transit location and service data	AASHTO, AMPO, NACo, NCAI, TRB, USG
Locations of opportunities (i.e. work, school, etc.)	AASHTO, AMPO, APTA, TRB
Granular access data for rural areas and smaller communities	AASHTO, AMPO, NADO, NCAI, Public, TRB, USG
Analysis Tool	
Tool for summarizing and visualizing basic travel habits	AASHTO, AMPO, TRB
Demand models especially relating to micromobility*	AMPO, NLC, Public, TRB, USG
Land use monitoring system to support vulnerable areas*	AASHTO, AMPO, TRB
Equity outcome tracking and reporting tool	AASHTO, ACI-NA, AMPO, NACO, NCAI
Tool to prioritize project funding based on equity needs*	AASHTO, AMPO, APTA, NACo, NADO, Public, TRB
Technical Assistance	
Capacity building for improving community networks	APTA, USG
Pedestrian generation guidance	AMPO
Guidance on how to evaluate transit trips	APTA
Guidance on assessing rural equity	NADO

*Identified as using publicly available data or suitable for primary use of publicly available data inputs pursuant to Section 25003.

3.5.2 Work Plan

To invest in equitable and accessible local transportation systems, decision-makers require support to measure, visualize, and prioritize projects that connect their communities to essential services. Particularly, consistent equity metrics and complete, interoperable data would better equip local decision-makers to invest in options that connect their communities to labor, markets, and affordable transportation options. The proposed work plan includes the following components:

- **Transportation Equity Data Initiative**

USDOT is committed to strengthening the collection, analysis, sharing, and use of equity data to ensure transportation projects and programs increase opportunity and serve communities equitably. With the recent infusion of equity requirements in federal programs, decision-makers are seeking support to measure and conduct meaningful analyses of how local infrastructure projects could expand affordable access to transportation and enable wealth creation in their communities. The Transportation Equity Data Initiative would advance transportation equity analysis by: (1) developing consistent, granular equity data and indices for use across various local analysis tools, (2) making nationwide granular equity related metrics available in a consolidated location, and (3) providing equity data training and technical assistance for measuring and visualizing transportation benefits and impacts.

- **Data and Tools on Land Use, Access, and Travel Demand**

Equity is a complex and nascent field that requires granular data to effectively characterize transportation access across the nation's vast and varied geographies and the communities it serves. Local decision-makers described a need for robust and easily accessible data containing local travel habits and locations of jobs, educational institutions, healthcare facilities, parks, grocery stores, and other essential services. The Data and Tools on Land Use, Access, and Travel Demand Program would provide: (1) complete, granular geospatial data on land use, land zoning, and locations of essential community services; (2) trip frequency and travel patterns of people in local communities categorized trip purpose, traveler's demographics, household's socioeconomic characteristics and vehicle ownership; and (3) travel demand modeling tools that capture the changing travel behavior due to the pandemic and the transformation to a remote/hybrid work society.

- **Equity Investment and Performance Program**

Prioritizing and measuring outcomes of transportation equity investment are complex. When planning for transportation investments to advance equity in their community, local decision-makers need tools to help discern and prioritize various projects that would improve equitable outcomes. The proposed Equity Investment and Performance Program would provide multicriterial prioritization, estimate equity impacts, and provide reporting and visualization capabilities on the outcomes of the infrastructure investments.

- **Active Transportation, Transit, and Shared Mobility Program**

Currently, national data sets are not widely available in the active transportation, micromobility, shared mobility services, and land use spaces. Local decision-makers strongly emphasized the need to develop a national data program that is consistent, complete, interoperable, and timely. The spatial resolution of the data has to be beyond the national and major metropolitan region levels. The spatial granularity is particularly important for smaller and rural communities. At the minimum, this data program would integrate demographics and geospatial data layers for bicycle, pedestrian, transit, and shared mobility services.

To implement this work, Table 3.5.2 specifies costs, timing, and federal roles for developing the data and tools and providing the technical assistance needed to advance transportation equity and access.

Table 3.5.2 Implementation Roadmap for Equity and Access

Equity and Access Implementation Roadmap					
Program	Product	Estimated Costs		Timing (years)	Role of Federal Government
		Setup	Annual		
Transportation Equity Data Initiative	Metrics	\$3M–\$5M	\$2M–\$3M	1–3	Develop/Standardize
	Data Platform	\$3M–\$5M	\$5M–\$10M	3–5	Develop
	Technical Assistance and Training Center	\$5M–\$8M	\$5M–\$8M	1–3	Advise
Data and Tools on Land Use, Access, and Travel Demand	Demand Modeling	\$15M	\$4M–\$6M	2–4	Develop/Standardize
	Blended Transit Ridership Characterization	\$2M–\$4M	\$3M–\$5M	2–4	Develop/Standardize
	National Land Use and Zoning Data	\$12M	\$5M	3–5	Standardize/Broker/Develop
	Opportunities and Essential Services Data	\$10M–\$12M	\$3M–\$5M	1–3	Standardize/Broker/Develop
	Technical Assistance	\$5M–\$8M	\$5M–\$8M	1–3	Develop
Equity Investment and Performance Program	Planning Tool	\$3M–\$5M	\$3M–\$4M	2–4	Develop
	Reporting Tool	\$2M	\$1M	1–3	Develop
	Prioritization Tool	\$2M–\$4M	\$2M–\$4M	1–3	Develop
	Technical Assistance	\$5M–\$8M	\$6M–\$5M	1–3	Develop
Active Transportation, Transit, and Shared Mobility Program	Active Transportation and Accessibility Data	\$19M	\$10M	3–5	Standardize/Broker/Develop
	National Land Use and Zoning Data	\$12M	\$5M	3–5	Standardize/Broker/Develop
	Transit Data	\$2M–\$3M	\$1M–\$2M	1–3	Standardize/Develop
	Shared Mobility Services Data	\$10M	\$5M	3–5	Standardize/Broker/Develop



KEY TAKEAWAYS AND PATH FORWARD TO IMPLEMENTATION

While local officials recognize the value of evidence-based decision making, they lack adequate data and analytical tools to provide effective evidence for their decisions.

Local officials who attended the listening sessions identify with the principle of using evidence to inform their investments and planning decisions, to evaluate and report the outcomes of their investments, and to improve future investments based on the outcomes and lessons learned. However, to follow this principle the local officials urge federal support for them to overcome challenges in data, analysis tools, and staff's know-how.

Existing data from either public or private sources are oftentimes in silos and incompatible, challenging effective and timely local decision-making.

The most common and the greatest need is an inventory of all transportation assets, including but not limited to data on asset location and condition, usage, performance, and connectivity to other modes. This inventory needs to be (1) granular enough for local officials of small jurisdiction (e.g., city officials and tribal leaders), (2) timely enough to capture the changing travel behavior due to COVID-19 and/or transportation cost increases due to supply chain disruption, and (3) standardized to facilitate sharing and integration in a common data platform.

The lack of capacity on data and analysis tools hinders many jurisdictions' ability to apply for IIJA funds and to practice evidence-based decision-making.

Building data and analytics capacity at local jurisdictions, especially the smaller ones, is critically needed to advance evidence-based local infrastructure investment decision-making. BTS proposes the development of a training program, starting with workshops on what commonly used data are then gradually progressing toward webinars on more complicated analysis tools and predictive models.

Many of the existing data and decision-making tools fail to capture the multi-modal nature of the transportation system.

Decision-making tools need to account for the unique characteristics of the transportation system—a system of systems that cuts across multiple jurisdictions. As such, tools should be developed based on multi-modal data and should be able to address multimodal and multi-jurisdiction issues.

Data now drives the transportation industry and has the power to unlock opportunities to address the nation’s largest transportation challenges or leave local decision-makers behind.

Local officials are faced with the demands of evidence-based decision-making in a timely and adept manner. Without substantial funding over the next five years, local decision-makers will be unable to fully deliver on the promise of IIJA and plan for the future beyond IIJA. Local decision-makers will suffer from lack of data, tools and training to allow them to learn from the past, develop breakthroughs to support and connect Americans today, and forecast trends to improve transportation for future generations.

Funding the work plan is crucial to supporting local leaders with their infrastructure investment decisions and will better serve the American people by driving employment and growing the economy sustainably and equitably.

Section 25003 (d) of IIJA directs the Secretary of Transportation to implement the proposed work plan by developing data analysis tools, purchasing datasets, and executing other programs as prioritized in the work plan. The implementation is subject to the availability of appropriations. Section 25004 of IIJA authorizes \$10,000,000 for each fiscal years 2022 through 2026 to be appropriated to the Secretary for use by the Bureau of Transportation Statistics.

Outreach to local decision-makers made clear that priorities identified in the work plans need to be implemented to inform their IIJA and other investment decisions. While BTS stands ready to implement the proposed work plan, funding from Section 25004 and other departmental programs coupled with strong Secretarial support is imperative for BTS to provide the data and analysis tools desperately needed by state, local, and tribal governments to inform their infrastructure investment and planning decisions.

