LONG-RANGE TRANSPORTATION PLAN
–Working to **Move Maine**–

Working to Move Maine: MaineDOT's Long-Range Transportation Plan

MaineDOT

date

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Prepared for

Maine Department of Transportation

Prepared by

CAMBRIDGE SYSTEMATICS

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Acronyms

AASHTO	American Association of State Highway and Transportation Officials
ADA	Americans with Disabilities Act
AFC	Alternative Fuel Corridor
AV	Autonomous Vehicle
BIL	Bipartisan Infrastructure Law
BPI	Business Partnership Initiative
CBITD	Casco Bay Island Transit District
CFR	Code of Federal Regulations
CRS	Carbon Reduction Strategy
COVID-19	Coronavirus Disease 2019
CSL	Customer Service Level
DCFC	Direct Current Fast Charging
DOT	Department of Transportation
EV	Electric Vehicle
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
FY	Fiscal Year
GARVEE	FHWA Grant Anticipation Revenue Bond
GDP	Gross Domestic Product
GF	General Fund
GHG	Greenhouse Gas
GTFS	General Transit Feed Specification
HCP	Highway Corridor Priority
HF	Maine State Highway Fund
IFS	Maine Integrated Freight Strategy
IIJA	Infrastructure Investment and Jobs Act
IRAP	Industrial Rail Access Program
KOBS	Keeping Our Bridges Safe Report
LRTP	Long-Range Transportation Plan
MaineDOT	Maine Department of Transportation
MPI	Municipal Partnership Initiative
MPO	Metropolitan Planning Organization
MSFS	Maine State Ferry Service
MTA	Maine Turnpike Authority

MTP	Metropolitan Transportation Plan
NEVI	National Electric Vehicle Infrastructure Funding Program
NHS	National Highway System
NHTSA	National Highway Traffic Safety Administration
NNEPRA	Northern New England Passenger Rail Authority
PCR	Pavement Condition Rating
PEVID	Maine Plan for Electric Vehicle Infrastructure Deployment
PMT	Person-Miles Traveled
ROI	Return on Investment
ROW	Right-of-Way
RPO	Regional Planning Organization
RR	Roads Report
SHSP	Strategic Highway Safety Plan
STIP	Statewide Transportation Improvement Program
TAMP	Transportation Asset Management Plan
TIP	Transportation Improvement Program
VMT	Vehicle-Miles Traveled
UAV	Unmanned Aerial Vehicle
US	United States
USDOT	United States Department of Transportation
3-C	Continuing, Cooperative, and Comprehensive
3D	Three Dimensional
°F	Degrees Fahrenheit

From the Commissioner

Working to Move Maine

From the Commissioner: Working to Move Maine

Dear MaineDOT Customers and Partners,

Transportation will always be a big job in Maine. Our vast, multimodal transportation system includes highways, bridges, airports, freight and passenger rail service, a state ferry service, and bike and pedestrian facilities. That infrastructure is spread out across a large, mostly rural state with geography, geology, and weather that – while beautiful – present challenges from an infrastructure perspective. Maine simply has much more transportation infrastructure per capita than most states do. For example, compared to New Hampshire, a state with about the same population, Maine has three-and-a-half times the land area and about double the number of state highway miles. Maine also is the least densely populated state east of the Mississippi River, and that population is the oldest in the nation, making rural transit solutions especially challenging. Fortunately, at the Maine Department of Transportation, we love tackling the constant and complex challenges associated with doing this big job. We see opportunities to make pragmatic progress in the years ahead.

To move Maine forward amidst these realities, we need a general direction, a map, and a plan – a guide that assesses where we are, where we're going, and how we're going to get there. This Long-Range Transportation Plan (LRTP) aims to provide the general direction of that map. The LRTP is MaineDOT's overarching approach and vision for responsibly providing a safe and reliable transportation system within available resources over the long term. This general direction and approach include high-level goals, objectives, and strategies that we will use on our journey.

The LRTP is part of MaineDOT's Family of Plans – a group of distinct plans that deal with specific modes of transportation, aspects of the work we do, and work done by our partners at the regional and municipal levels as well as in the Tribes and Nations. These individual modal plans can be thought of as more specific destinations consistent with the general direction provided by the LRTP.

At the beginning of every calendar year, MaineDOT releases the latest version of our Work Plan. This document includes thousands of work items the department plans to deliver in the next three-year period. Extending the map analogy, one can think of the Work Plan as the specific routes we will use to reach the destinations in the modal plans and the general direction in our LRTP.

All movement requires energy or fuel. For transportation, that fuel is funding and is provided in federal and state budgets and state bond bills. Just as fuel comes in many varieties, so too does transportation funding.

Historic underfunding of our transportation system has created significant challenges over time, and recent construction cost inflation has made the cost of meeting these challenges about 50-percent higher just to maintain the same levels of production. Despite these challenges, there is reason for cautious optimism. The potential for significantly more federal funding available through the Bipartisan Infrastructure Law (BIL) coupled with unprecedented support for transportation at the state level couldn't have come at a better time. If we can provide adequate resources to match BIL funds and address inflation, a better transportation future is within reach.

Throughout this journey metaphor, notice there is no mention of specific modes of travel. Given our demographics and population density, most in Maine likely envision themselves driving or riding in a passenger vehicle – increasingly in a low- or zero-emission vehicle. Some are thinking of themselves flying. Others may envision themselves riding in a bus or train. Still others will be walking or riding a bicycle. At MaineDOT, we are charged with seeking a comprehensive, balanced, multimodal system that responsibly supports the economic opportunity and quality of life of all our customers, using the modes that makes policy and fiscal sense over the long term.

This is the first time that MaineDOT has developed so many modal plans at one time, resulting in a more complete and comprehensive vision of Maine's transportation future. We look forward to working with regional and local transportation providers, municipalities, our Tribes and Nations, modal advocates, and policymakers to pursue pragmatic progress that will help make the future of transportation in Maine brighter for all our customers – the people who live, work, do business, and travel in our great state.

Respectfully,

Bruce A. Van Note

Commissioner

MaineDOT

Executive Summary

Working to Move Maine:
MaineDOT's Long-Range Transportation Plan

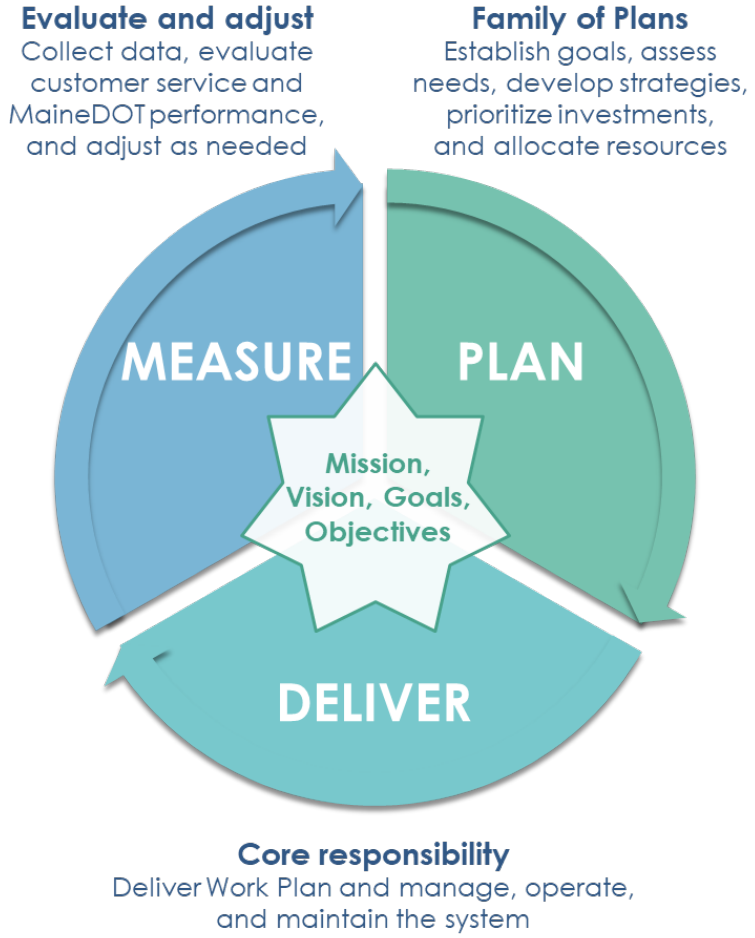
The *Long-Range Transportation Plan*

The *Long-Range Transportation Plan* (*LRTP*) is the Maine Department of Transportation's (MaineDOT's) overarching plan to communicate the vision for the transportation system and the strategies that MaineDOT and our partners plan to deliver throughout the next 20+ years.

Maine's *LRTP* is a policy document that lays out the framework to manage Maine's transportation system in all modes, support economic opportunity and quality of life, and build reliability and trust throughout the coming decades. The *LRTP* was developed consistent with federal and state requirements for consultation with partners, officials, and input from Maine citizens.

This policy document shapes investments that appear in MaineDOT's *Work Plan*, which includes the work in the federal *Statewide Transportation Improvement Program (STIP)*. Decisions on these investments today and into the future support the LRTP goals, meet MaineDOT responsibilities, and address immediate needs while also seizing opportunities to manage the impacts of trends and potential disruptions.

MaineDOT's Mission
To support economic opportunity and quality of life, by responsibly providing our customers the safest and most reliable transportation system possible, given available resources.

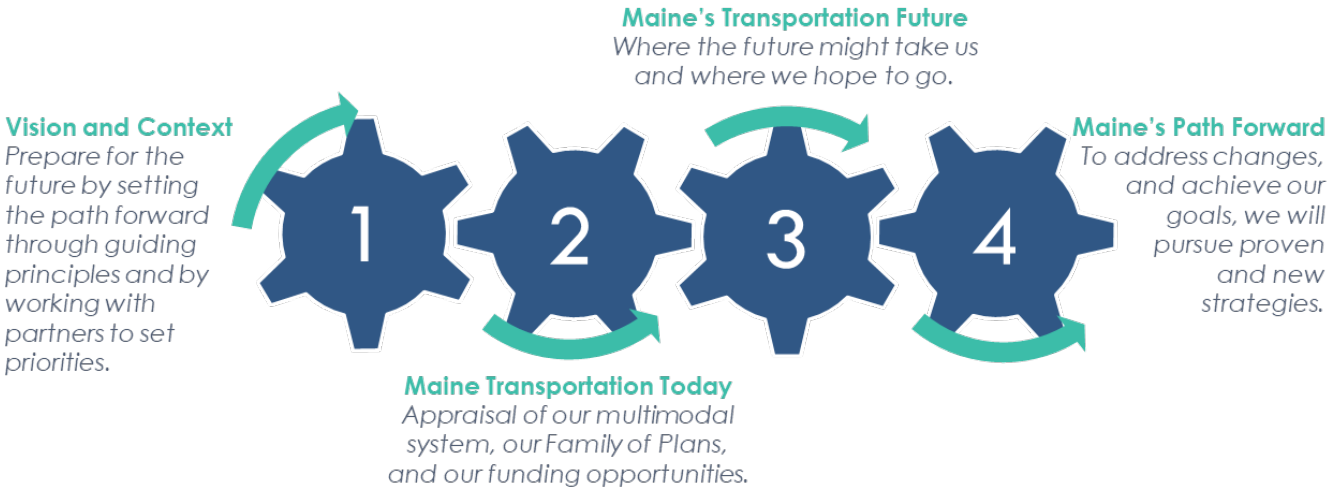


The *LRTP* is the **foundation of a cycle of planning** to address needs and prioritize resources to ensure a safe, well-maintained, and reliable system, **delivering projects and programs** to keep the system efficient for all users, and **monitoring system performance** to ensure we are serving our customers and meeting our goals.

MaineDOT's Family of Plans includes many modally-focused plans, each addressing a unique purpose within the planning cycle and linking to delivery and measurement. The Family of Plans includes the *LRTP*, the *Maine State Rail Plan* (*Rail*), *Maine State Aviation System Plan* (*Aviation*), *Maine State Active Transportation Plan* (*Active*), *Maine State Transit Plan* (*Transit*), *Strategic Highway Safety Plan* (*Safety*), *Integrated Freight Strategy* (*Freight*), and Metropolitan Planning Organization *Metropolitan Transportation Plans* (*MTPs*).

Building the Long-Range Transportation Plan

Each step of building the LRTP relied upon prior steps, helping to create a platform of data and insights to inform the development of strategies and implementation approach.



1. Context & Guiding Principles

The *LRTP* helps MaineDOT and our partners look forward, anticipating how continued changes inside and outside Maine will impact our transportation investment decisions. Originating from a desire to deliver achievable results, MaineDOT uses a set of practical guiding principles which frame how MaineDOT planning, development, implementation, and operations be conducted. These three guiding principles require department-wide, conscientious effort to center strategies and actions.

Meet customers where they are	**Commit to pursuing equitable solutions** that best address the diverse needs of all users of Maine's transportation system.
Be responsible stewards by making reasoned, long-term decisions	**Serve as responsible stewards of the funds entrusted to MaineDOT** by seeking the most cost-effective solutions to demonstrated transportation needs. **Make reasoned, fact-based decisions** including those relating to system and asset management, resource allocation, and the selection, scoping, and development of projects. **Consider long-term benefits and costs of transportation investment** including the need for ongoing funding for operations and maintenance.
Improve continuously and embrace the future	**Be open to new ideas, best practices, and technologies** that will result in continuous and sustainable improvement. **Anticipate and meet future transportation needs** - including the transition to cleaner transportation – through thoughtful study and pragmatic implementation including pilots when feasible.

2. Maine Transportation Today

Maine's multimodal transportation system is the backbone of our economy. This system supports the movement of goods, access to jobs and healthcare, and tourism and recreation. The transportation system also has a substantial impact on Maine's environmental sustainability and climate change. The *LRTP* presents the state of the system, including highlights of the system scope and travel characteristics.

MaineDOT delivers capital projects and programs, maintenance and operations activities, planning initiatives, and administrative functions across a multimodal system spanning 8,800 miles of state jurisdiction highways, in addition to trails, sidewalks, transit systems, rail lines, airports, and ports managed by MaineDOT and its partners.[1] MaineDOT describes the work activities supporting this system through our *Three-Year Work Plan*. The *Work Plan* is financed through many funding sources, including Maine's State Highway Fund, which is the foundational state source of revenue for MaineDOT capital investments and operations. The State Highway Fund represents 28 percent of the Work Plan and is leveraged by 44 percent from federal sources, 13 percent from the general fund, and 15 percent from a combination of sources including municipal funds.

Bipartisan Infrastructure Law

The LRTP was developed during the passing of the Bipartisan Infrastructure Law (BIL) by Congress in November 2021. The BIL calls for MaineDOT to receive more than $1.5 billion in federal highway and bridge funding from 2022 to 2026, translating to an average of an additional $66 million in reliable formula funding per year beyond existing levels (a 28-percent annual increase). In addition, transit formula funding received a 33-percent increase. These increases are beneficial, but not transformative, as the increase comes at a time when labor and materials costs continue to rise, with construction cost inflation increases of 40 to 50 percent over the last four years.

There are many trends driving the direction of Maine's economy, population, and transportation system. The *LRTP* focuses attention on eight topics: Transportation Safety, Population, Development, Labor Market, Technology, Global Trade, Climate, and Tourism.

These topics are crucial for understanding the future of Maine's transportation system, particularly how each trend could impact future MaineDOT *Work Plans* and ongoing planning, delivery, and performance measure processes. MaineDOT will continue to keep our eye on these topics, while also tracking emerging trends including topics like energy uncertainty and information security.

[1] Maine Department of Transportation, "Three-Year Work Plan, 2023 Edition," January 25, 2023, https://www.maine.gov/mdot/projects/workplan/docs/2023/WORK%20PLAN%20FINAL%202023_2024_2025-3.pdf

3. Maine's Transportation Future

The spectrum of needs reviewed in the *LRTP*, and across the Family of Plans, highlights issues that limit our customer's access to a seamless and integrated transportation system.

The *LRTP* looks at two need dynamics. The first dynamic looks at four questions: **when (or timing to meet the need)**, **how much (what is the cost)**, **where (how do needs vary by community)**, and **who (partners MaineDOT works with to address needs)**. The second dynamic looks at **real needs by type of trip, including commuting to work; accessing goods and services; tourism and recreation; and goods movement.**

Understanding the diverse needs of Maine's transportation system and the needs of our customers is foundational to the development of the *LRTP*'s vision and goals. The vision represents MaineDOT's desired future for multimodal transportation.

Maine Citizen Needs

All Maine people want to feel safe as they travel, with confidence that they can securely navigate from origin to destination by any mode without injury.

Infrastructure maintenance and improvements were identified as the number one priority for MaineDOT investment. These investments can promote safety and help ensure that travel is reliable.

Transportation should meet all Maine people where they are – not only in terms of geography, but their life stages, priorities, and habits.

MaineDOT customers want practical multimodal mobility solutions that enhance the ability to travel across Maine to meet all travel needs.

Our Vision:

MaineDOT will provide a transportation system that:

- Within available resources, supports the economic opportunity and the quality of life that makes Maine a world-class and welcoming place for all.
- Reinvigorates quintessential New England charm and provides for natural resource, technology, manufacturing, and tourism-based economies.
- Enhances the lives of Maine people, supports our businesses to prosper locally and globally, and demonstrates leadership in sustainability.

Our goals describe what guides us toward attaining the vision and highlight our overall desired outcomes. Our goals shape objectives, which are measurable outcomes describing how MaineDOT will attain the *LRTP* goals. The *LRTP* has 15 unique objectives across the five goals.

4. Implementation: Maine's Path Forward

To reach our goals and make progress against the objectives, the *LRTP* recommends holistic and cross-cutting strategies to achieve our vision for the transportation system.

GOALS	OBJECTIVES	STRATEGIES
Provide a safe transportation system for all users and modes of transportation	Reduce fatalities and serious injuries Reduce crashes involving vulnerable users	Reduce crashes, fatalities, and serious injuries for all transportation users and promote safe and connected active transportation options
Effectively manage Maine's existing transportation system within reliable funding levels to provide levels of service that are acceptable to our customers	Maintain a state of good repair Improve system performance for customers Support and pilot innovation Leverage funding opportunities	Maintain and make targeted or strategic improvements to asset condition Enhance the overall travel experience for customers using Maine's highways Diversify and stabilize funding sources to enhance sustainability Enhance the transportation system Improve the customer experience through technology
Invest in transportation initiatives that support economic opportunity for Maine people, communities, and businesses	Support job and economic growth Improve supply chain efficiency Expand the transportation workforce Expand connections to global economies	Improve freight connections, reliability, and efficiency Connect Maine to the world Improve system mobility to grow the economy
Invest in practical transportation solutions that mitigate impacts on the natural world and prepare for the realities of climate change	Reduce greenhouse gas emissions Mitigate environmental impacts Reduce disruptions	Position for an electric vehicle future Prepare for climate change Lead by example
Ensure that all Maine people have access to safe and reliable transportation regardless of who you are or where you are	Improve access for all Mainers Reduce disparities in accessibility	Provide reliable and connected mobility solutions Support communities across Maine Foster opportunities for flexible commuting

MaineDOT strives to implement the *LRTP* recommendations using a process that is fiscally realistic and anchored in policy. Implementation of the strategies occurs across four initiatives – **process, program, policy, and partnership**. Each strategy is supported and further detailed within the Family of Plans.

Process initiatives are the practices, tools, and other resources within MaineDOT that institutionalize and operationalize the programmatic and policy strategies.

Program initiatives direct MaineDOT's future investment decisions, such as program and project prioritization for annual *Work Plans*.

Policy initiatives shape MaineDOT's priorities, roles, and responsibilities by establishing standards for planning, project design and delivery, and standards for coordination with partners.

Partnership initiatives allow MaineDOT to leverage existing relationships and forge new alliances to meet our goals.

Implementation actions help facilitate the 15 recommended strategies in the *LRTP*. The actions are executable within the next five years, are within MaineDOT's purview to lead and execute, do not require legislative action, and rely on existing resources.

Implementation actions internal to MaineDOT include:

1. Annually, prior to setting resource allocation goals for each Work Plan, the Bureau of Planning and the Results and Information Office will meet to ensure that the resource allocation is consistent, given available resources, with the goals and strategies of the Family of Plans.

2. MaineDOT Bureau of Planning will annually review ongoing implementation initiatives within the Family of Plans and update the Commissioner on progress.

3. Develop policy establishing how MaineDOT will amend or update Family of Plans documents to address changing conditions, legislation, and regulations to best position Maine to compete for grant opportunities and leverage partnerships.

Implementation actions where MaineDOT will coordinate with external partners include:

4. Conduct ongoing public and stakeholder coordination that briefs partners on plan implementation activities and engages opportunities for partnerships (including resource sharing).

5. Expand partnerships with Tribes and Nations, MPOs, RPOs, and transit operators on long-range and strategic regional planning opportunities consistent with Family of Plans outcomes, goals, and objectives.

1. Introduction

MaineDOT's Guiding Principles, working with partners, and building multiple pathways toward a sustainable future

1.1 The Long-Range Transportation Plan and Family of Plans

The *Long-Range Transportation* Plan (*LRTP*) is the Maine Department of Transportation's (MaineDOT's) overarching plan to communicate the vision for the transportation system and the strategies that MaineDOT and our partners plan to deliver throughout the next 20+ years. The *LRTP* helps MaineDOT and our partners look forward, anticipating how continued changes in Maine's population, economy, and climate, as well as broader changes in transportation technologies and the movements of people and goods, will impact our transportation investment decisions.

What is the LRTP?

Maine's *LRTP* is a policy document that lays out the framework to manage Maine's transportation system in all modes, support economic opportunity and quality of life, and build reliability and trust throughout the coming decades. The *LRTP* satisfies United States Department of Transportation (USDOT) requirements as specified in the Code of Federal Regulations (CFR), 23 CFR 450.216. The *LRTP* was developed consistent with federal and state requirements for consultation with partners, officials, and input from Maine citizens. Information on meeting federal requirements is in **Appendix A**.

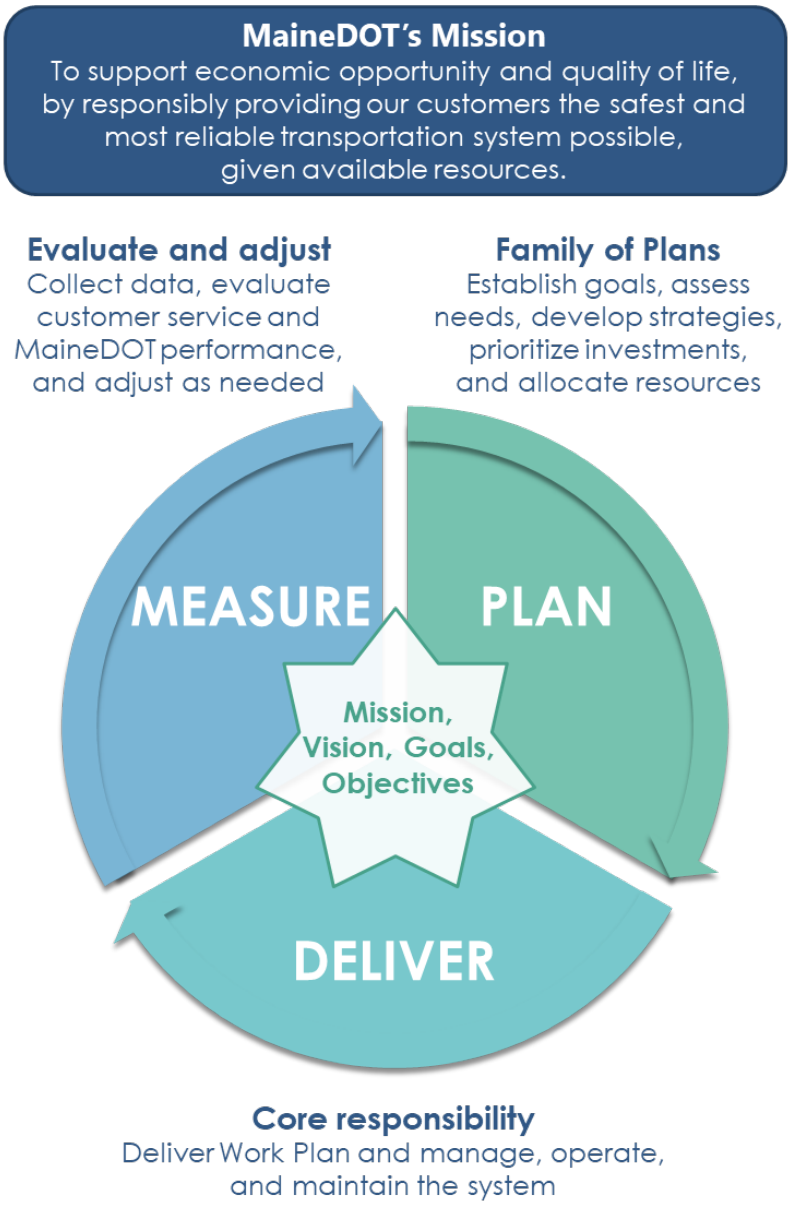
This policy document shapes investments that appear in MaineDOT's *Work Plan*[i], which includes the work in the federal *Statewide Transportation Improvement Program*[ii] *(STIP)*. Decisions on these investments today and into the future support the *LRTP* goals, meet MaineDOT responsibilities, and address immediate needs while also seizing opportunities to manage the impacts of trends and potential disruptions. Visit MaineDOT's homepage[iii] for more information on MaineDOT's *Work Plan,* the *STIP*, and other plans and ongoing projects.

What is the Family of Plans?

The *LRTP* can be viewed as the foundation of a cycle of **planning to address needs and prioritize resources** to ensure a safe, well-maintained, and reliable system, **delivering projects and programs** to keep the system efficient for all users and monitoring **system performance** to ensure we are serving our customers and meeting our goals. This cycle in Figure 1.1 is referred to as the transportation *performance-based planning and programming process*.

The Family of Plans recognizes that there are many modally or regionally focused plans, each addressing a unique purpose within the planning part of the cycle. The Family of Plans includes the *LRTP*, the *Maine State Rail Plan* (*Rail*), *Maine State Aviation System Plan* (*Aviation*), *Maine State Active Transportation Plan* (*Active*), *Maine State Transit Plan* (*Transit*), *Strategic Highway Safety Plan*[iv] (*Safety*), *Integrated Freight Strategy* (*Freight*), and MPO *Metropolitan Transportation Plans* (*MTPs*). Many components of the Family of Plans were developed concurrently in 2022-2023 in order to better align MaineDOT's long-range and modal planning efforts.

Figure 1.1 MaineDOT's Performance Based Planning and Programming Process



How Do Existing Maine Plans Inform the LRTP?

Plans published by state government agencies throughout the last decade provide policy guideposts for the state's growth, recovery, and preparation for the future. These plans cover a spectrum of topics, some of which are recurring and others that are responses to particular events. Some of these plans may seem focused on stand-alone issues unrelated to transportation. However, upon closer examination, nearly every plan is interconnected and vital to the success of the others. The link between these plans is nowhere more evident than in the transportation system.

Figure 1.2 presents the Family of Plans relative to other statewide initiatives, like *Maine Won't Wait*[v] or the *Maine Jobs and Recovery Plan*[vi]. It also presents the Family of Plans as the guiding policy and strategy documents shaping targeted investments throughout the next three years and actions throughout the next decade.

- The *LRTP* is integral to and built upon the Family of Plans. These include long-range, statewide plans with policy and strategy-level direction for multimodal transportation investments.

- The *LRTP* shares goals and policy direction with MaineDOT's statewide and asset-specific strategic plans. The LRTP is informed by strategies, policies, investment direction, and performance measures and targets established by MaineDOT and our partners through these plans.

- The *LRTP* integrates with Maine's four Metropolitan Planning Organizations (MPOs), Regional Planning Organizations (RPOs), other non-metropolitan local officials, and the Maine Turnpike Authority (MTA), as well as with Tribes and Nations in Maine.

- MaineDOT's annual *Work Plan* and *STIP* share goals and strategies with the *LRTP* and can document how programmed investments support MaineDOT's vision and *LRTP* goals.

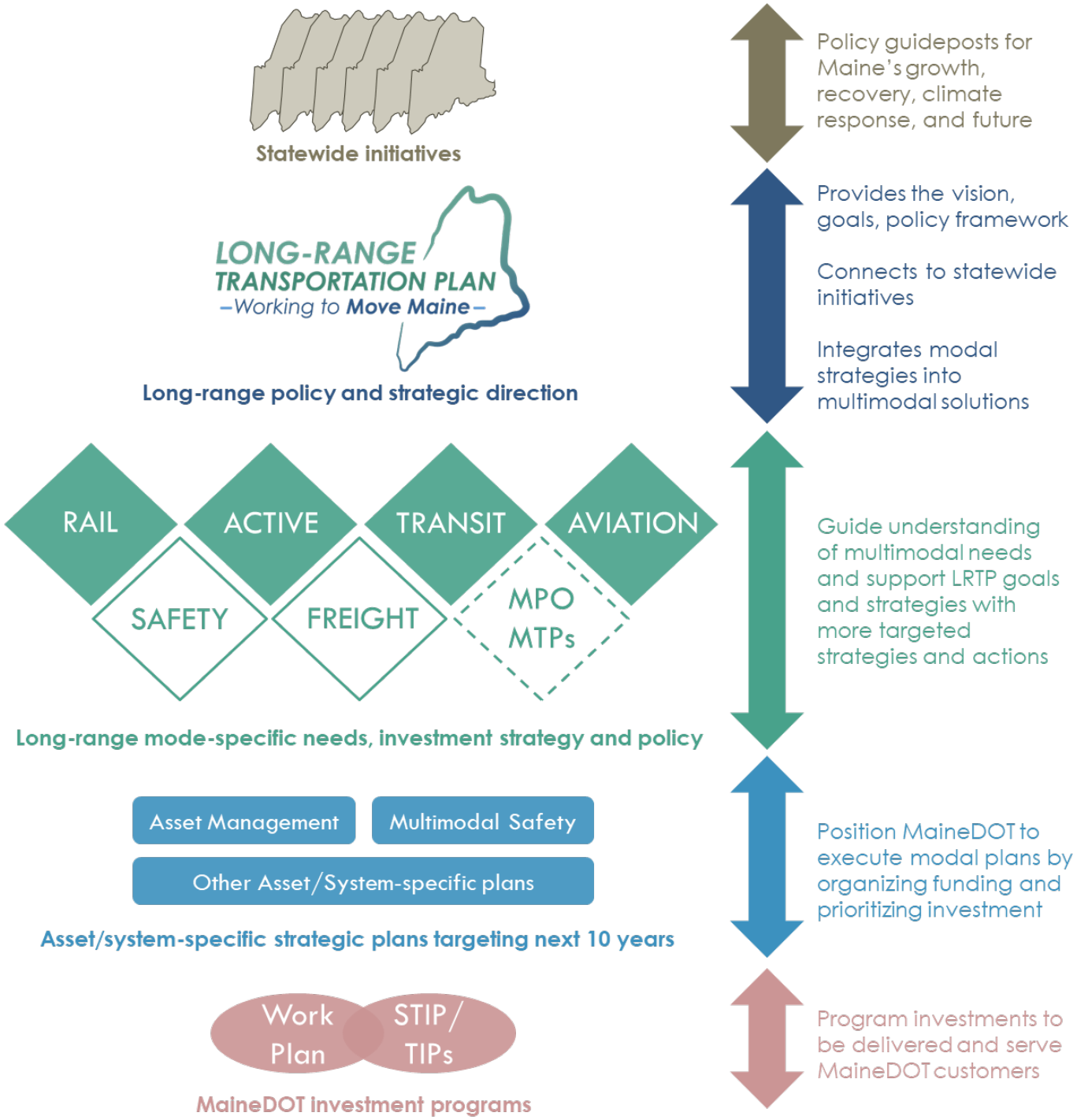
How do the connections between all these plans work in practice? Figure 1.2 also explains the two-way interaction between the four levels that translate the *LRTP* vision and goals all the way down to implementing projects and managing the day-to-day operation of the transportation system.

MaineDOT complies with all federal and state transportation laws. In Maine, MaineDOT's authority and responsibilities are outlined in Title 23 of the Maine Revised Statutes.[2] This includes high-level policies, such as the Sensible Transportation Policy Act, which lays out the core tenants of Maine transportation policy and codifies MaineDOT's commitment to minimizing environmental impacts, evaluating transportation alternatives, maintaining the highway and bridge system, promoting energy efficiency, meeting Maine people's transportation needs, being consistent with the Comprehensive Planning and Land Use Regulation Act, and incorporating public participation into transportation planning decisions.[3]

[2] 23 M.R.S. .§1 to 8120, https://www.mainelegislature.org/legis/statutes/23/title23ch0sec0.html

[3] 23 M.R.S. §73 (1991), https://www.mainelegislature.org/legis/statutes/23/title23sec73.html

Figure 1.2 How It All Works Together – Plan | Deliver | Measure



1.2 MaineDOT's Guiding Principles

Originating from a desire to deliver achievable results, MaineDOT uses a set of practical guiding principles which frame how MaineDOT planning, development, implementation, and operations be conducted. These three guiding principles require department-wide, conscientious effort to center strategies and actions.

MaineDOT strives to:

Meet customers where they are.

- Commit to pursuing equitable solutions that best address the diverse needs of all users of Maine's transportation system.

Be responsible stewards by making reasoned, long-term decisions.

- Serve as responsible stewards of the funds entrusted to MaineDOT by seeking the most cost-effective solutions to demonstrated transportation needs.
- Make reasoned, fact-based decisions including those relating to system and asset management; resource allocation; and the selection, scoping, and development of projects.
- Consider long-term benefits and costs of transportation investment including the need for ongoing funding for operations and maintenance.

Improve continuously and embrace the future.

- Be open to innovative ideas, best practices, and technologies that will result in continuous and sustainable improvement.
- Anticipate and meet future transportation needs – including the transition to cleaner transportation – through thoughtful study and pragmatic implementation including pilots when feasible.

1.3 Our Local and Statewide Partners

Meeting transportation system needs requires collaboration with stakeholders, partners, customers, and the public in the long-range planning process. MaineDOT's local and regional partners include municipalities and localities, MPOs, RPOs, local law enforcement, transit providers, and advocacy and non-profit groups, among many others. MaineDOT also coordinates with a wide variety of state partners, which include the Maine Bureau of Highway Safety, Bureau of Motor Vehicles, Maine Turnpike Authority, Maine Port Authority, Maine State Police, Department of Health and Human Services, Department of Labor, ConnectMaine Authority, Department of Economic and Community Development, Department of Environmental Protection, and others.

MaineDOT engaged stakeholders and partners, in addition to the public, in a variety of ways during our long-range planning process. Representatives from MaineDOT attended and presented at four rounds of virtual public meetings about the Family of Plans. MaineDOT also distributed an online public survey which was publicized along with the public meeting recordings on the LRTP page of the MaineDOT website. The online survey offered an opportunity to reach a wide audience remotely and gain valuable feedback on the trends, objectives, and critical needs we have identified as integral in creating a successful transportation system now and into the future.

Representatives from MaineDOT served on an advisory committee to guide *LRTP* development and ensure our goals, objectives, and strategies align with other MaineDOT modal and strategic plans and initiatives. MaineDOT also held several rounds of stakeholder meetings with representatives from MPOs and RPOs to provide updates on plan development. More details on the entirety of the stakeholder and public engagement process for the complete Family of Plans is available in **Appendix C**.

1.4 Tribes and First Nations in Maine

MaineDOT works closely with the Houlton Band of Maliseet Indians, the Mi'kmaq Nation, the Passamaquoddy Tribe, and the Penobscot Nation on long-range transportation planning efforts and to help address transportation issues facing their communities. In accordance with the *Tribal-State Collaboration Act,* MaineDOT follows its Tribal Collaboration Policy to ensure the Tribes and Nations are afforded a reasonable opportunity to be heard—in addition to the public process—during the development of programs, rules and services that substantially and uniquely affect and/or pertain to said Tribes and Nations.[4]

MaineDOT held several rounds of stakeholder meetings with Tribes and Nations in Maine during the development of the *LRTP* and the Family of Plans. More details are available in **Appendix C.**

1.5 Our Federal Partners

MaineDOT regularly coordinates with federal agencies, such as the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) on many aspects of transportation planning and policy. Other federal partners include the Federal Railroad Administration (FRA), National Highway Traffic Safety Administration (NHTSA), and the National Park Service.

USDOT is a primary funding partner for MaineDOT, representing 44 percent of MaineDOT funding (approximately $1.746 billion) in the *2023-2025 Work Plan.* USDOT also sets planning and programming requirements through rulemakings published in the Code of Federal Regulations (CFR) that MaineDOT must implement to remain eligible for different federal funding opportunities.

[4] 5 M.R.S. §11051 to 11056 (2021), https://legislature.maine.gov/statutes/5/title5ch376sec0.html

The U.S. Congress passed the Infrastructure Investment and Jobs Act (IIJA), also known as the Bipartisan Infrastructure Law (BIL), which was signed into law by President Biden on November 15, 2021. The BIL sets policy and budget authority for USDOT throughout the next five years, totaling approximately $567 billion nationally for surface transportation. Overall, the BIL includes an approximately 30 percent increase in total annual formula funding for surface transportation from USDOT, in addition to increased opportunities to compete for discretionary federal grants. More information on how the BIL will help transportation in Maine is available here[vii].

The BIL is consistent with Maine's multimodal transportation priorities. The BIL will help advance investments in critical infrastructure and promote policy and programming in emerging areas important to Maine, like safety, connecting rural communities, investing in villages and downtowns, and climate initiatives. The *LRTP* provides direction on how Maine will optimize our approach to maximize federal opportunities consistent with statewide goals.

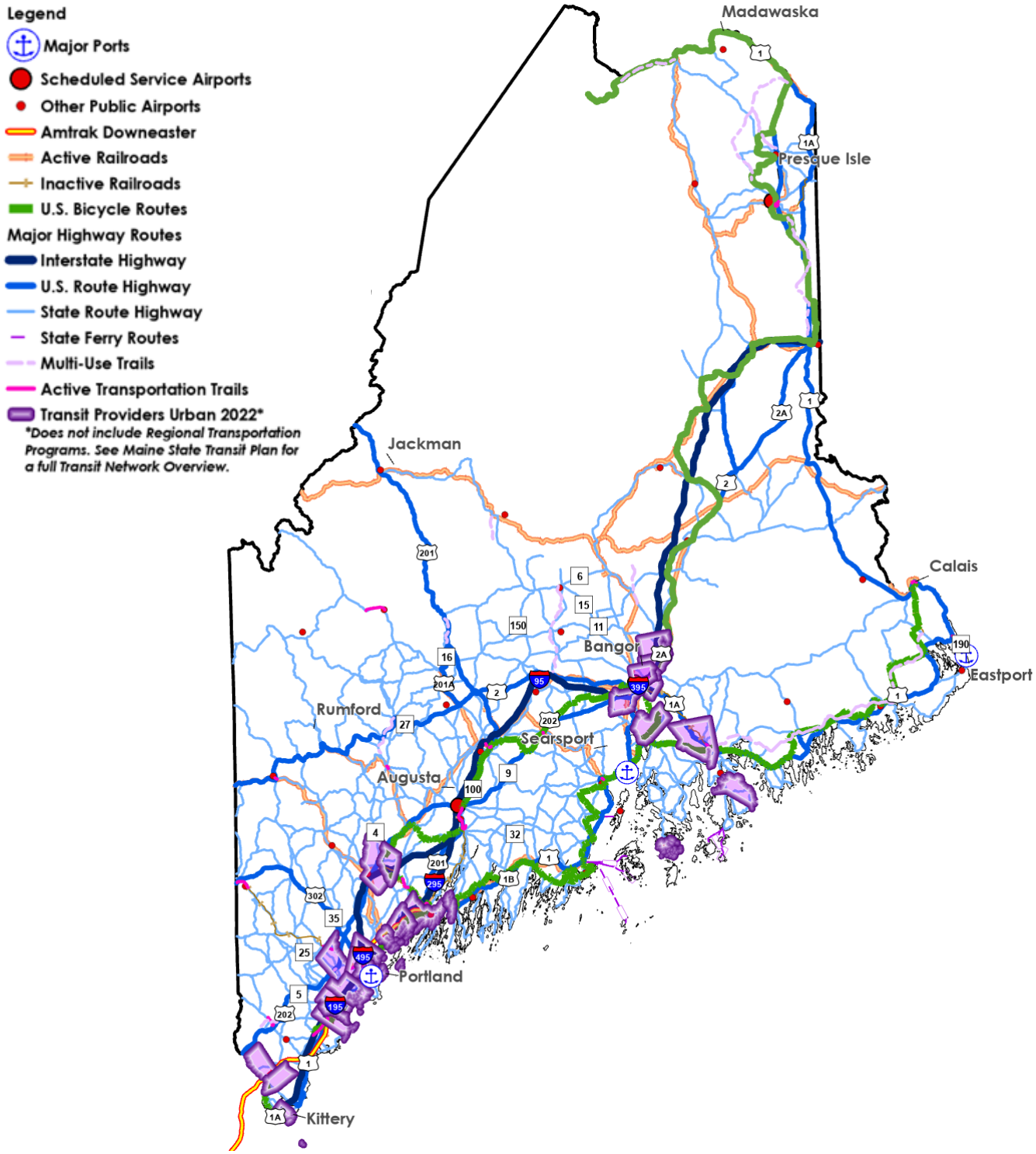
The BIL brings new optimism to transportation funding and provides new opportunities that Maine can leverage. *LRTP* strategies and implementation actions highlight opportunities to help position Maine to optimize our ability to leverage federal funding, while remaining supportive of the *LRTP* goals and objectives.

2. Maine Transportation Today

Appraisal of our multimodal system, Family of Plans, and funding situation

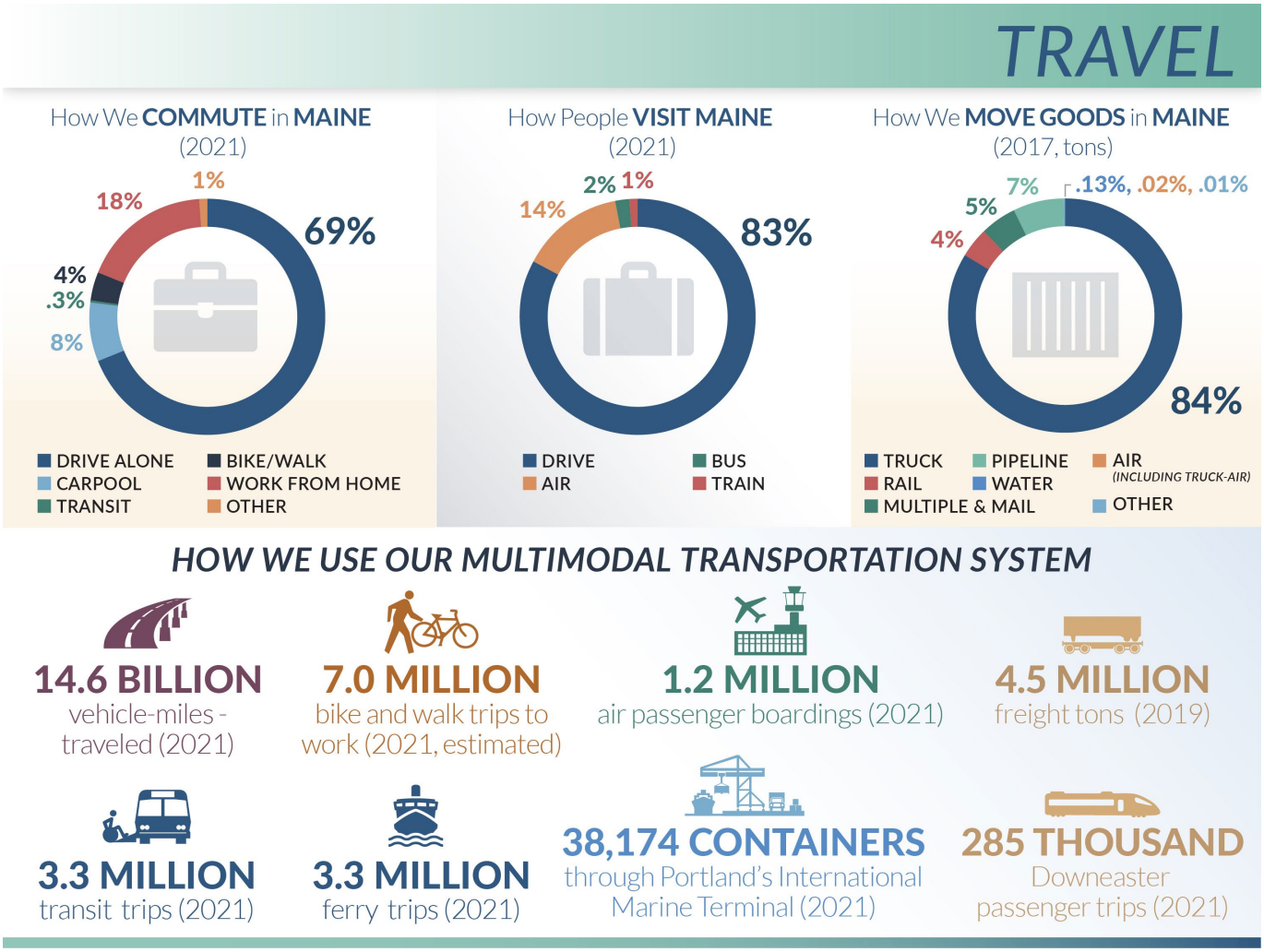
2.1 Our Transportation System: A Snapshot

Figure 2.1 Maine's Comprehensive Multimodal Transportation System[5]



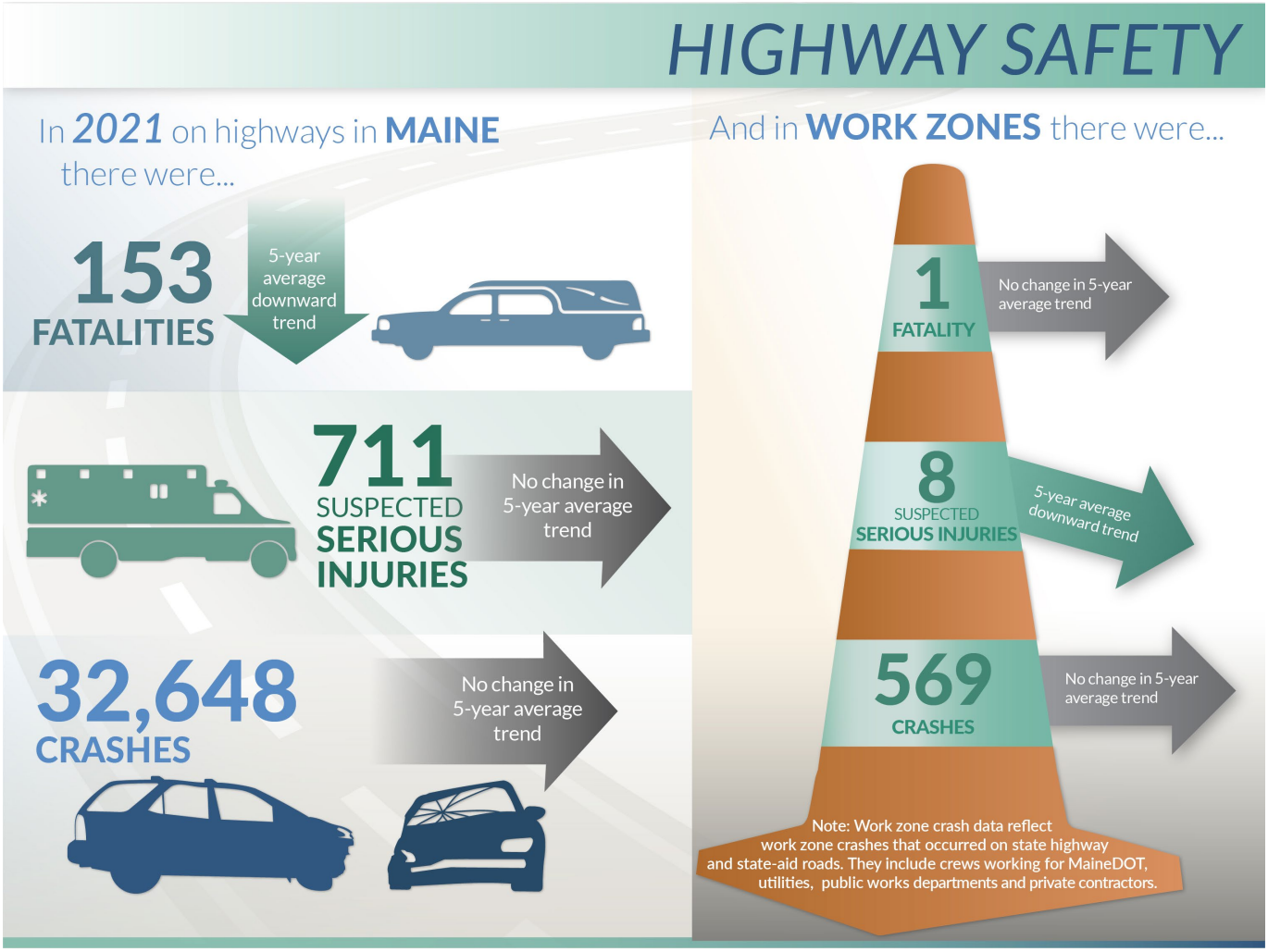
[5] For a map of private intercity bus services in Maine, please see the Massachusetts Bay Transportation Authority's "New England Regional Transportation Map" available here: https://cdn.mbta.com/sites/default/files/2023-01/2023-01-23-system-map.pdf

The following eight infographics summarize and highlight the existing state of Maine's transportation system. More information on the data sources supporting these graphics is available in **Appendix D**.



Travel in Maine: While Maine's transportation system is comprehensive and multimodal, most travel in the state is conducted by driving a personal or commercial vehicle. This is the case for commuting, tourism, and freight. In 2019, 88 percent of workers in Maine drove or rode in personal automobiles for their commute. The COVID-19 pandemic shifted these patterns: in 2021, 18 percent of workers worked from home and 77 percent of workers drove or rode in personal automobiles for their commute. In 2021, 83 percent of visitors drove to Maine, while 14 percent arrived by air travel. The movement of goods, or freight, follows a similar pattern, with 84 percent of tonnage moved by truck.

Initial evidence, based on preliminary data collected by Maine DOT, and as reported by federal partners, suggest that the key travel statistics reported for 2021 are comparable to 2022 travel levels. This includes initial traffic count data outcomes which points to stable vehicle miles traveled compared to 2021, with small increases in transit, passenger rail, and ferry ridership associated with the recovery.

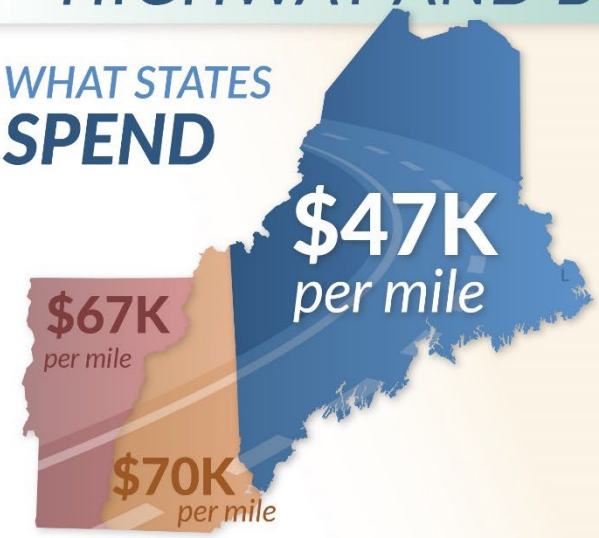


Highway Safety: Based on MaineDOT's 2021 crash data, Maine's highways have not seen a meaningful change in the five-year average trend of highway safety, aside from a continued downward trend in overall fatalities and suspected serious injuries in work zones. During 2020 and 2021, crash rates (the number of fatalities, serious injuries, or total crashes by vehicle-miles traveled) increased compared to 2019. National trends indicate that these increases are in part associated with more speeding, lower seatbelt use, and more distracted driving during the pandemic, when total VMT declined. MaineDOT updated our *SHSP* in 2022, focusing on addressing these factors, among others, which are impacting safety on our highways.

Based on preliminary information released by the Maine Bureau of Highway Safety, 2022 was the deadliest year on Maine roads in over 15 years, with 171 fatal crashes involving 182 fatalities. In response to this recent trend, in February 2023, the USDOT launched the National Roadway Safety Strategy Call to Action campaign, asking stakeholders to commit to specific actions in 2023 to reduce serious injuries and deaths on our roadways. USDOT also announced 510 grants totaling more than $800 million as part of the new Safe Streets and Roads for All[viii] discretionary grant program, funded by the Bipartisan Infrastructure Law. Two grants were awarded in Maine (to the Androscoggin Valley Council of Governments and the Greater Portland Council of Governments) helping to develop regional safety action plans in 2023.

HIGHWAY AND BRIDGE PRESERVATION

WHAT STATES SPEND



MaineDOT highway bridges and minor spans **2800** (2022)

All Maine highway bridges and minor spans **(non-Fed)** **3819** (2022)

Maine NHS Bridge Condition (2022)

GOOD	25.3%
FAIR	67.6%
POOR	7.1%

61% of MaineDOT's bridges are **MORE THAN 50 YEARS OLD**

MAINE HIGHWAY CONDITION MILES BY PRIORITY*

HCP	A	B	C	D	F	TOTAL
1	470	397	459	139	126	1,591
2	316	316	266	214	108	1,220
3	435	361	236	146	59	1,237
4	2,488	1,102	690	253	104	4,637
TOTAL	3,709	2,176	1,651	752	397	8,685

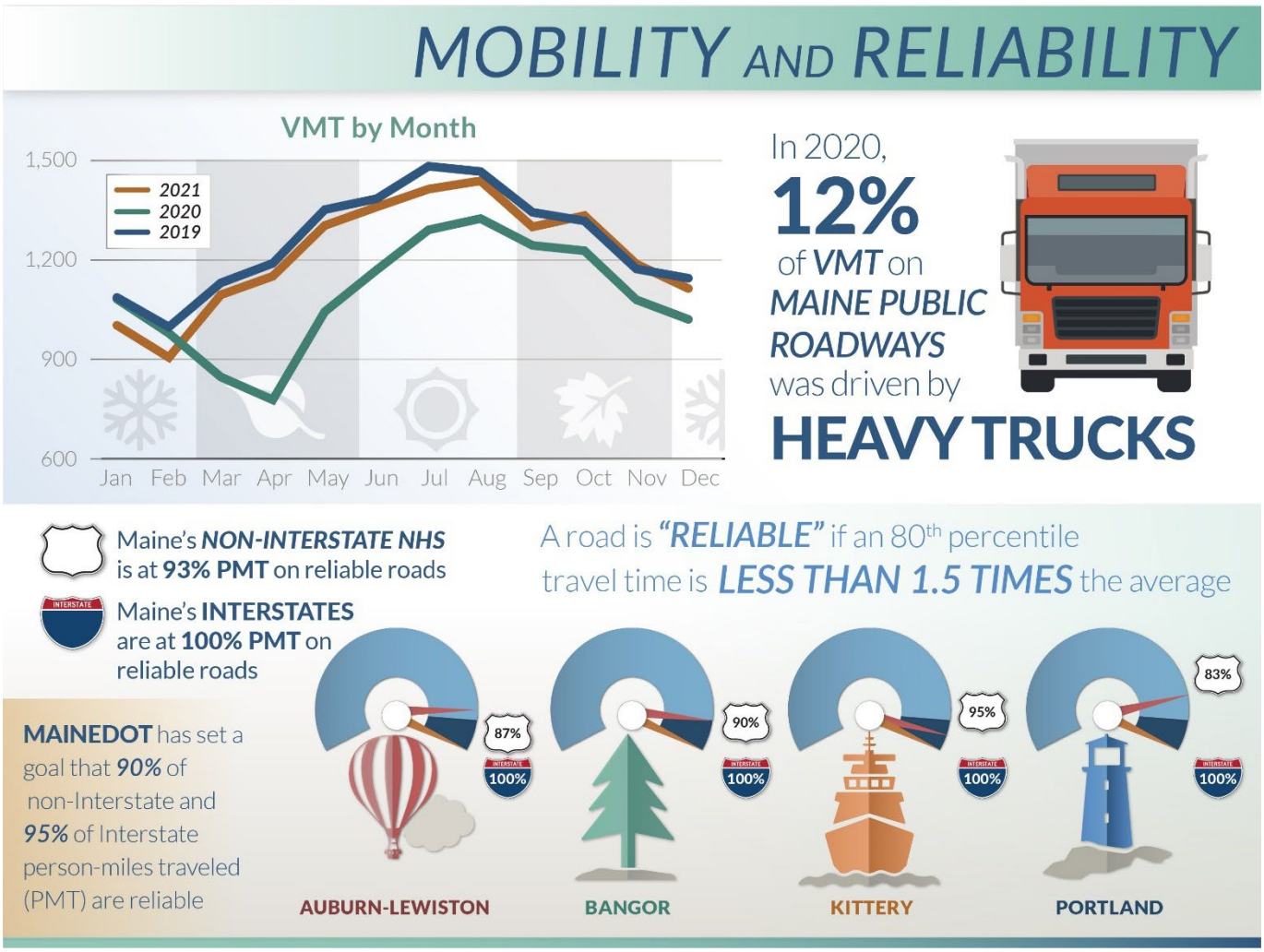
** Based on available 2021 inventory year totals*

ROAD MILES AND TRAFFIC FOR ALL PUBLIC HIGHWAYS

	DEFINITION	% MILES	% TRAFFIC
PRIORITY 1	The Interstate and all other National Highway System corridors	8.0%	41.3%
PRIORITY 2	High-priority, non-NHS arterials	5.3%	18.0%
PRIORITY 3	Generally, the remaining arterials and major collector highways	5.3%	11.3%
PRIORITY 4	Major/Minor Collectors not in Priority 3 (including 3 miles of marine highway)	19.8%	16.3%
PRIORITY 5	Local Roads & Streets	61.6%	13.1%

Highway and Bridge Preservation: MaineDOT measures many aspects of highways and bridges, including cost per mile, condition, age, and traffic. In 2020, Maine's roads were more than $20,000 per mile less expensive to build and maintain compared to neighboring New Hampshire and Vermont. MaineDOT maintains customer service levels (CSL) of highway conditions broken down by highway priority. In 2021, 68 percent of priority 1 through 4 highways were considered in excellent or good condition. As of 2021, 41.3 percent of Maine's VMT, or traffic, was on highway corridor priority (HCP) 1 roads, which covers only eight percent of total roadway mileage. Local roads and streets (priority 5) cover 61.6 percent of road mileage in Maine, while carrying only 13.1 percent of Maine's VMT.

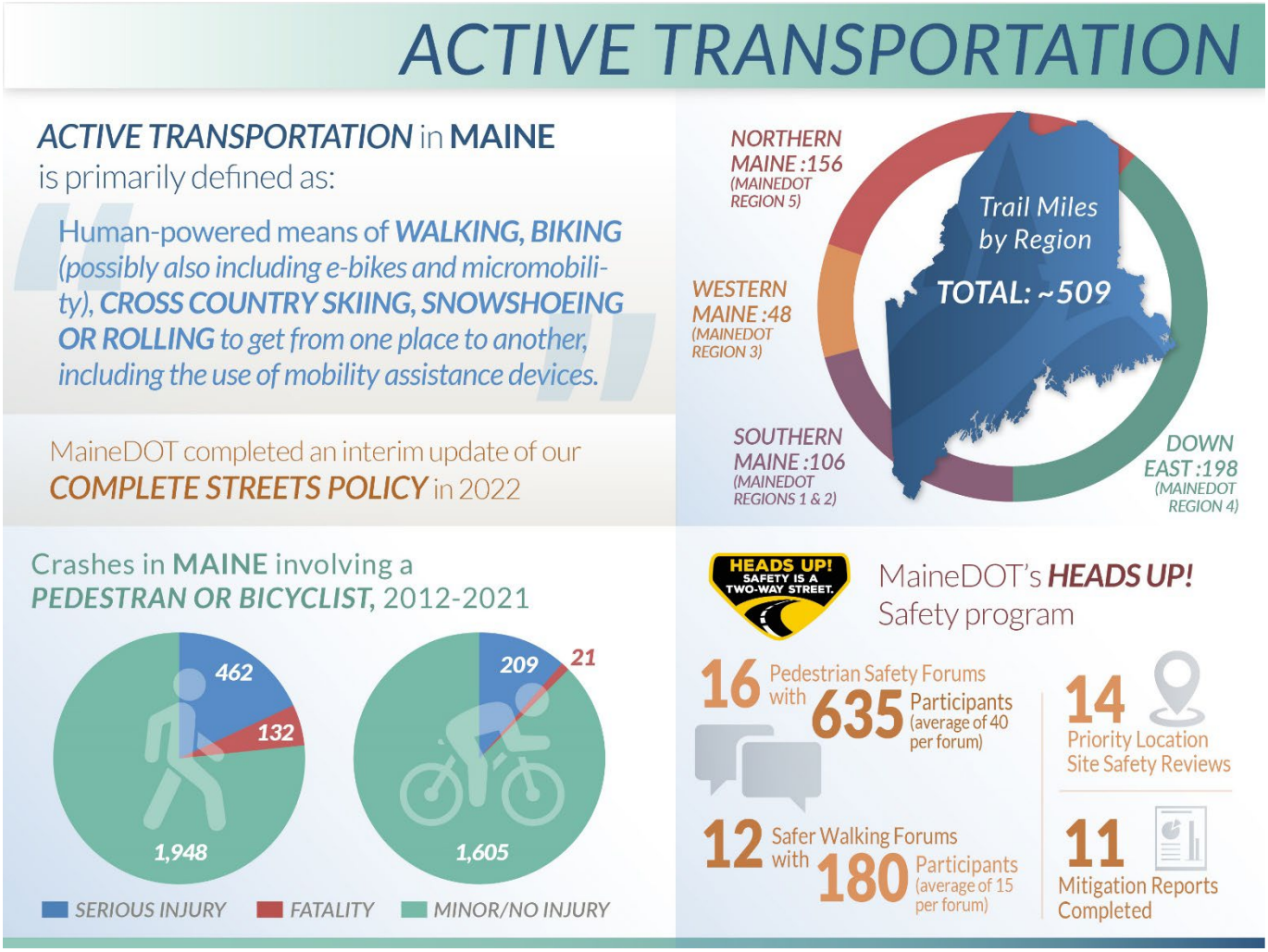
Maine's National Highway System (NHS) is comprised of interstates and U.S. highways—including 529 bridges—that are owned by either MaineDOT or the MTA. In 2022, more than 67 percent of these bridges were rated as fair, with only about seven percent rated poor. Maine's entire road system (including the NHS) has 3,819 total highway bridges and minor spans, 2,800 of which MaineDOT owns and is responsible for maintaining. Of the total bridges in Maine, 61 percent are more than 50 years old, meaning they may need significant rehabilitation or replacement in the foreseeable future.



Highway Mobility and Reliability: Mobility and reliability are two of the most important aspects of Maine's road system from a customer perspective. In Maine, a road is considered reliable if 80 percent of all vehicle travel times are less than one-and-a-half times greater than the average travel time on that road.

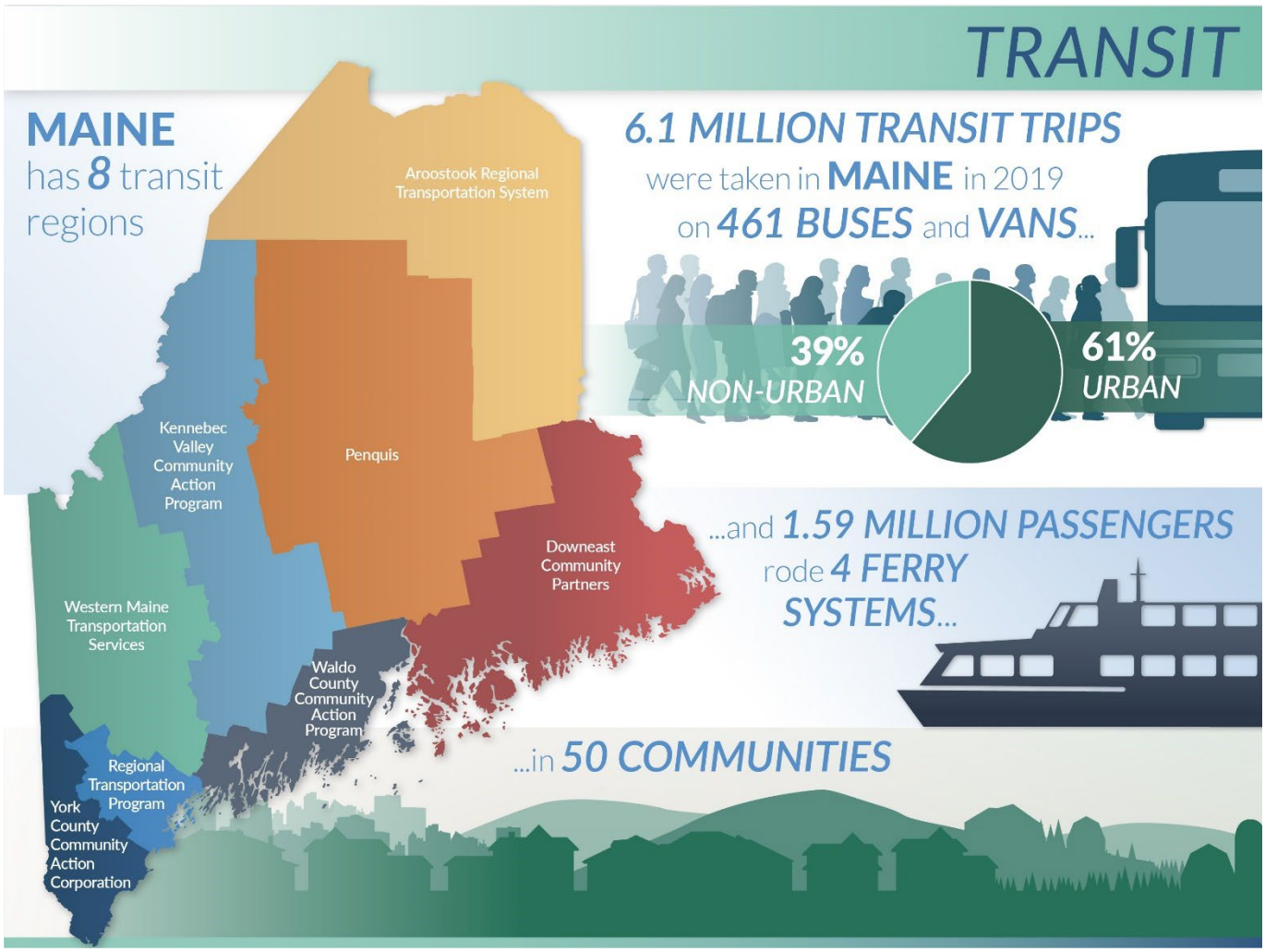
Maine continues to exceed our reliability goals on the NHS, including 100 percent reliable interstate person-miles traveled (PMT) and 93 percent reliable non-interstate NHS PMT. Among Maine's MPOs, Bangor and Kittery met MaineDOT's reliability goals, while Auburn-Lewiston and Portland fell just short of the non-interstate NHS goal of reliable person-miles traveled.

VMT in Maine had a precipitous drop in 2020 due to COVID-19 travel restrictions, advisories, and overall changes in travel patterns. By fall 2021, VMT had fully recovered to pre-pandemic levels. In 2020, 12 percent of VMT on Maine public roadways was driven by heavy freight. Initial 2022 VMT data, based on limited traffic volume reports to FHWA across Maine's continuous traffic count stations, indicate stable VMT compared to 2021 levels.



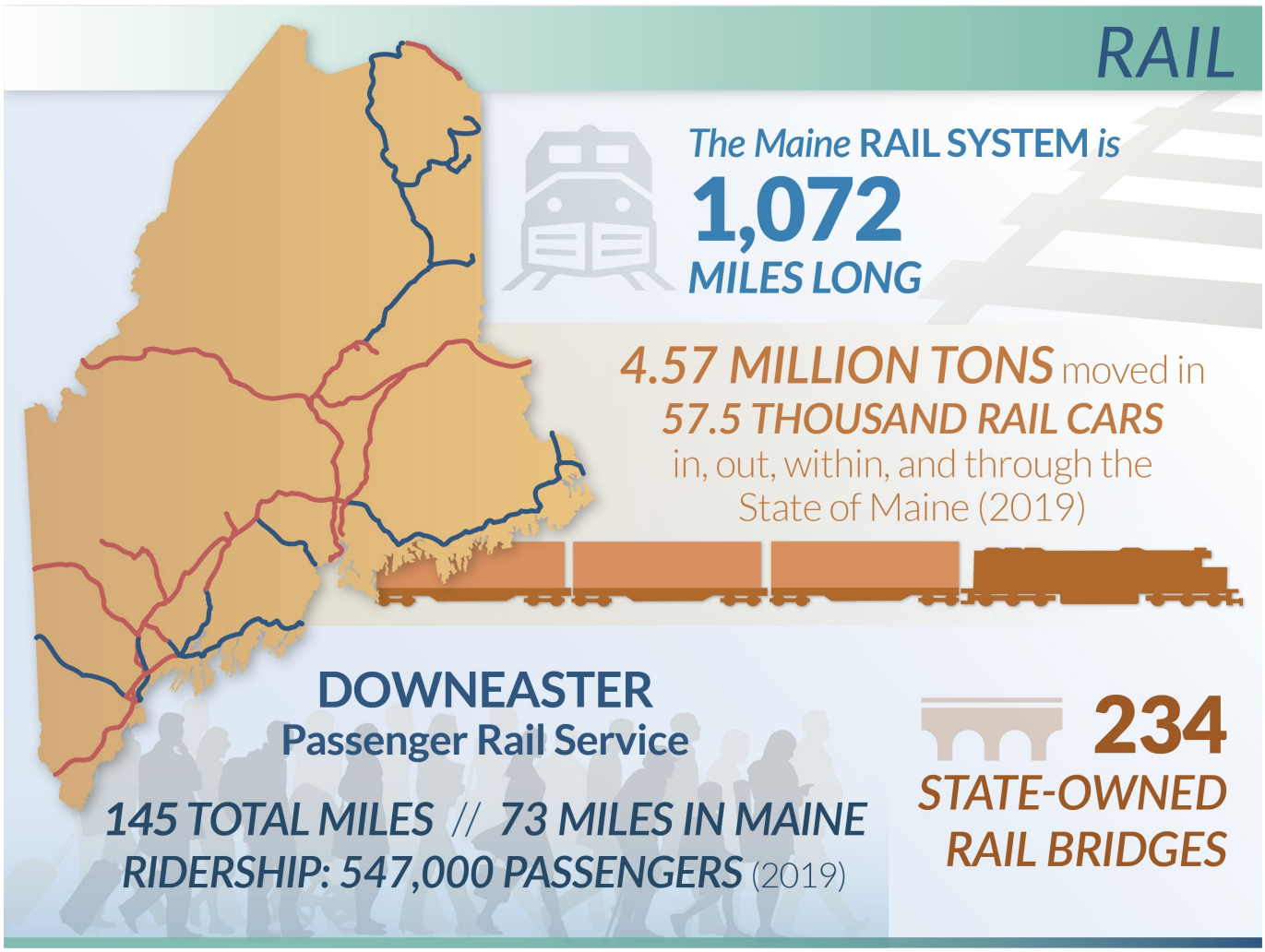
Active Transportation: Maine continues to expand active transportation opportunities, which are imperative to transportation mobility, health, and access to recreational attractions. In the Active Transportation Plan, MaineDOT defines active transportation as "human-powered modes of transportation"—walking, bicycling, skating, skateboarding, operating a wheelchair or other mobility device, cross-country skiing, and snowshoeing, with some exceptions for small-scale electric vehicles such as e-bikes and e-scooters. As of 2022, Maine has approximately 509 miles of trails, with the majority in Down East and Northern Maine. Between 2012 and 2021, there were more than 3,500 crashes with minor or no injuries and 153 fatal crashes involving a pedestrian or bicyclist in Maine—with a total of 157 bicyclist or pedestrian fatalities (some crashes result in multiple fatalities).

To reduce the number of crashes involving pedestrians and bicyclists, MaineDOT has a robust active transportation safety program, Heads Up![ix], which involves location-specific public forums, high crash location site safety reviews, mitigation reports, and project funding for safety improvements. MaineDOT published the *Maine State Active Transportation Plan* in 2023 (in conjunction with the *LRTP*), and will complete an update of our *Complete Streets Policy*[x] in 2023.

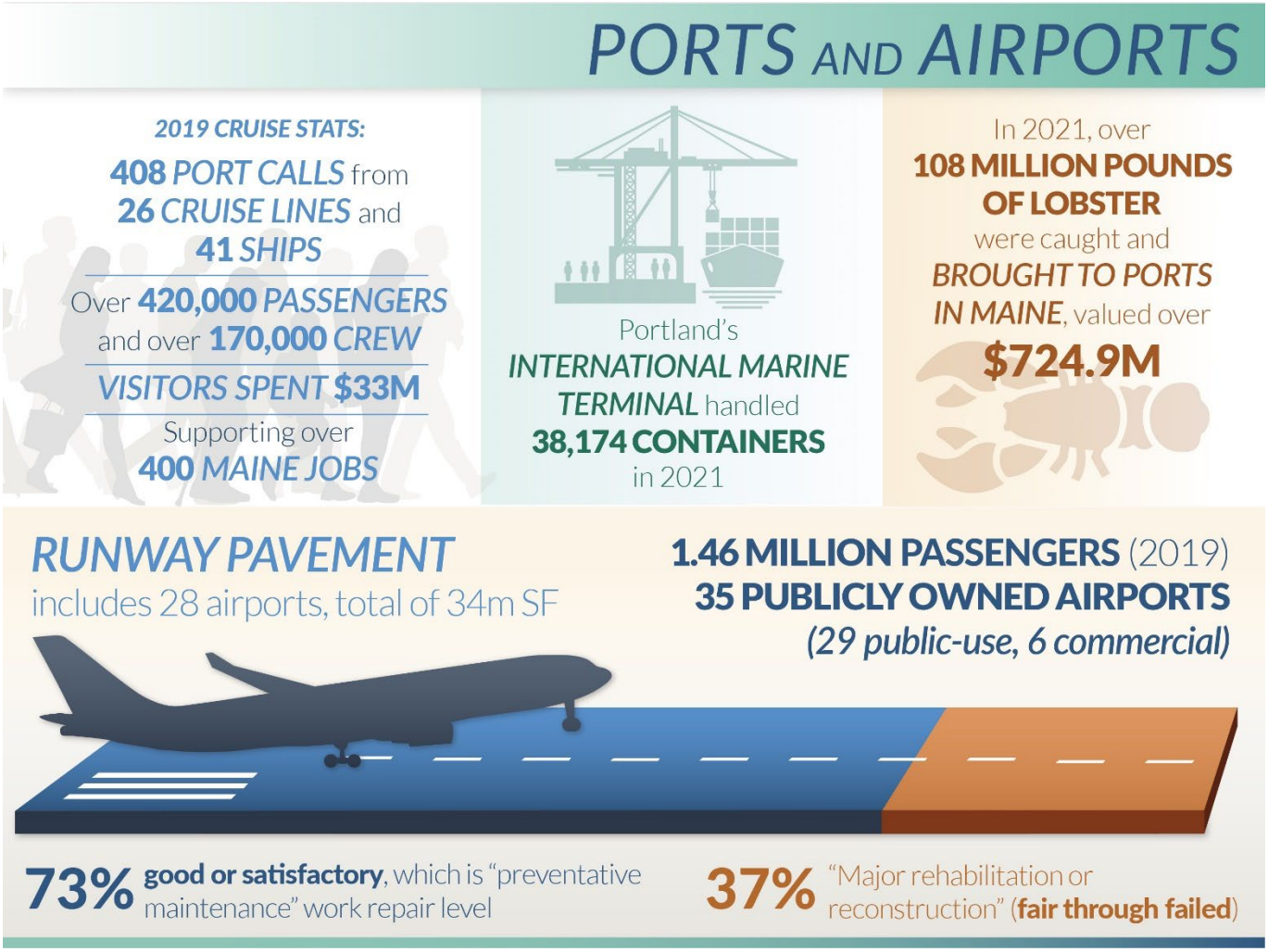


Transit: Maine's eight transit regions cover a range of transit needs in both urban and rural areas, as well as on water and land. This graphic focuses on ridership before the COVID-19 pandemic to provide an assessment of ridership consistent with normal travel patterns. In 2019, 6.1 million transit trips were taken in Maine on 461 buses and vans. About 40 percent of these trips were taken in non-urban areas, demonstrating the importance of public transit outside of urban centers. Rural transit is vital to many Maine people who cannot drive – whether due to mobility issues, other disabilities, or lack of access to a car – or who may want options other than driving a personal vehicle. Additionally, 1.59 million passengers rode the four ferry systems in Maine. Overall, transit service providers in Maine provided almost 7.7 million transit trips in 50 communities across the state. Private transit carriers also provide vital intercity services throughout Maine and outside Maine, including to the Boston's Logan International Airport and Manchester, NH's regional airport.

As noted in the *Maine State Transit Plan*, transit ridership dropped by sizable amounts in 2020 and 2021, and these drops were larger than service reductions in nearly every market. Indications for 2022 ridership numbers is that ridership recovery was hindered by driver and staff shortages which led to service cuts.



Rail: Maine's 1,072 miles of rail network include 234 state-owned bridges. Rail moves four percent by volume and two percent by value of freight in Maine, which was equal to 4.6 million tons in 2019 in 57,528 rail cars. Due to recent rail investment announcements, there is an anticipated increase of freight rail activity in Maine in the coming years. In addition to freight, Maine is also served by Amtrak's passenger rail service line, the Downeaster, which is 145 miles long and runs from Brunswick, Maine through New Hampshire to Boston. About half of the Downeaster's tracks are within Maine. In fiscal year (FY) 2019, 547,000 passengers rode the Downeaster. Due to the COVID-19 pandemic, ridership dropped in FY 2020 to 485,454 and in FY 2021 to 284,667. Ridership showed a rebound to 403,775 riders in FY 2022 and continues to rebound with 280,576 riders halfway through FY 2023 (as of December 2022).



Aviation: In 2019, Maine's 35 publicly owned airports saw 1.46 million passengers. Of the 35 publicly owned airports, six are commercial in use and 29 are for public use. All of Maine's public airports receive some level of federal and state financial support. Commercial airports, as opposed to public-use airports, have at least 2,500 passenger boardings each calendar year and receive scheduled passenger service. In a 2019 MaineDOT study that covered 28 of the state's public airports, which encompassed 34 million square feet of runway, 73 percent of airport runway was considered good or satisfactory, which is in the "preventative maintenance" work repair category, while the other 37 percent falls into the "major rehabilitation or reconstruction" work repair category.

Ports: Maine's ports are also a vital part of both movement of people and freight in and out of Maine. In 2021, Portland's International Marine Terminal handled more than 38,000 containers of freight, while 108 million pounds of lobster, valued at $724.9 million, were caught and brought into Maine's ports. Additionally, in 2019, Maine saw 408 port calls from 26 cruise lines and 41 ships. This means more than 420,000 passengers and 170,000 crew members went through Maine ports. These visitors spent more than $33 million in the local economy, supporting more than 400 Maine jobs.

2.2 Transportation Funding Today

Funding for transportation infrastructure remains a pressing challenge as growing needs outpace revenues. Today's funding picture is more positive than it has been in decades, as Maine is experiencing an increase in resources thanks to historic general fund (GF) investments at the state level and an infusion of new federal resources through the BIL. While these new revenues are creating opportunities to address needs, the reality is that these funding increases are being primarily used to soften the blow caused by the rising costs of construction labor and materials that MaineDOT has been experiencing for the last several years.

Where Does Funding for Transportation Come From?

MaineDOT delivers capital projects and programs, maintenance and operations activities, planning initiatives, and administrative functions across a multimodal system spanning an 8,800-mile state-jurisdiction highway network, in addition to trails, sidewalks, transit systems, rail lines, airports, and ports. MaineDOT describes the work activities supporting this system through our *Three-Year Work Plan* published early each calendar year. The current *Work Plan* covers calendar years 2023, 2024, and 2025. The funding supporting the *Work Plan* consists of four fundamental streams:

Maine's State Highway Fund is the foundational state source of revenue for MaineDOT capital investments and operations. The Highway Fund is derived from Maine's per-gallon fuel tax. Other revenue comes from motor vehicle registration fees, inspection fees, miscellaneous taxes and fees, fines, and earnings on investments.

- **Maine fuel taxes are currently $0.30/gallon for gasoline and $0.312/gallon for diesel fuel.** These rates have been in place since July 2013. Alternative fuels are also taxed with a variable set of rates, including both transportation and non-transportation fuels. In FY 2022, 64.6 percent of Highway Fund revenues ($222.78 million) came from fuel taxes.

- **Motor vehicle registration fees include staggered annual registrations, title fees, inspection fees, and vanity plate fees.** The combination of these sources in FY 2022 generated 30.6 percent of Highway Fund revenues ($105.38 million).

- **Additional sources** include miscellaneous taxes and fees, fines, earnings on investment, and other sources totaling the remaining 4.8 percent of Highway Fund revenues ($16.69 million).

Federal funds are directed to MaineDOT from the Highway Trust Fund, which is primarily supported through the federal gas tax of $0.184/gallon for gasoline and $0.244/gallon for diesel. Federal aid through formula funding supports federal-aid eligible highway investments and FHWA Grant Anticipation Revenue Vehicles (GARVEE) bond debt service, as well as a variety of transit programs supporting urban and rural services. There is also a diverse set of discretionary grant programs for which MaineDOT competes on an annual basis.

GF support is consistent with the Governor's FY24-FY25 General Fund budget, which is subject to legislative review. This commitment from the Legislature allows MaineDOT to address both the challenge of construction cost inflation and the opportunity in the BIL

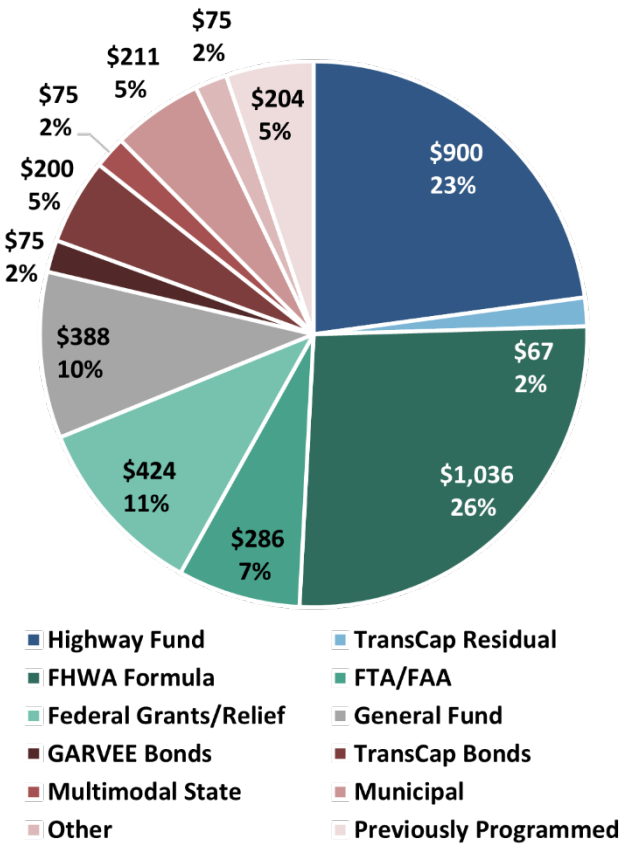
Other sources include bonding capacity and matching funds from Maine municipalities and other transportation partners. In November 2021, more than 70 percent of Maine voters approved an annual $100-million transportation bond, which will be used to match federal and other funds. Matching funds are derived through agreements with municipalities, reflecting the local benefit of projects and activities in the *Work Plan*. This includes local funding for transit operations, local bicycle and pedestrian project funding, airports, and MaineDOT's popular Municipal Partnership Initiative[xi] (MPI).

Funding for operations and management of the Maine Turnpike are supported by toll revenues. The Maine Turnpike Authority is separately funded and not related to MaineDOT.

What Are Our Funding Sources?

The transportation revenue mechanisms discussed above are mixed into a variety of funding sources, each with unique eligibility and spending requirements, and summarized within the *Work Plan*. Figure 2.2 summarizes the revenue sources supporting the *2023-2025 Work Plan*.

Figure 2.2 MaineDOT Sources of All Funds (millions, *2023-2025 Work Plan*)



- **State Highway Fund (HF)** sources, shown as the blue wedges in Figure 2.2, total an estimated $1,167 million and represent 30 percent of the total value of *Work Plan* items. This revenue includes budgeted HF allocations (the dark blue wedge) and funds passing through the TransCap Trust Fund at the Maine Municipal Bond Bank after debt service reserve requirements are met (the light blue wedge).

  Note, revenue from the HF had been steadily increasing since 2014, to more than $346 million in FY 2019 (July 2018 to June 2019). Due to the COVID-19 pandemic impact on travel, total revenue decreased by $22 million in FY 2020, and by $12 million in FY 2021, compared to 2019. FY 2022 revenue, based on actual revenues reported by the Maine Department of Administrative and Financial Services, totaled $345 million (falling just short of the $346 million in total revenue in FY 2019).[xii]

- **Federal funds** of all types (shown in green in Figure 2.2) are estimated to be $1.746 billion, which represents 44 percent of the total value of *Work Plan* items. Funds consist of several types, including core formula programs from FHWA, federal multimodal funds received by MaineDOT, federal multimodal funds received by other transportation partners (including airports and transit agencies), and federal competitive grant funding. Each of these federal funding types includes extensive rules, restrictions, and guidance that designate how the funding can be used.

Bipartisan Infrastructure Law

In November 2021, Congress passed, and President Biden signed, the Infrastructure Investment and Jobs Act, which has since become known as the Bipartisan Infrastructure Law (BIL). The BIL is good for transportation's future in Maine; however, it is not a panacea for all transportation needs. The BIL provides two types of federal funding – formula funds and discretionary grant programs:

Formula funds: The BIL calls for MaineDOT to eventually receive more than $1.5 billion in federal highway and bridge funding from 2022 to 2026, translating to an average additional $66 million in reliable formula funding per year (a 28-percent annual increase).

In addition, transit formula funding received a 33-percent increase. While this increase is beneficial, it is not transformative, as this increase represents only six to seven percent of MaineDOT's annual budget in the ***Work Plan***. This increase comes at a time when labor and materials costs continue to rise, with increases of 30 to 40 percent the last three years.

Discretionary grants: The BIL provides exciting new opportunities to invest in transportation in Maine through dramatic increases to existing grant programs and creation of additional programs. The new grant programs include topics that are already priorities of MaineDOT, like complete streets, villages and downtowns, rural transportation, electric vehicle charging, reconnecting communities, climate change resilience, and active transportation. MaineDOT has worked hard to seek federal grants in the past and will continue to do so in the future.

- **GF** support matches several types of federal funds to support capital programs. Shown in grey in Figure 2.2, GF support totals $388 million, representing about 10 percent of *Work Plan* items.

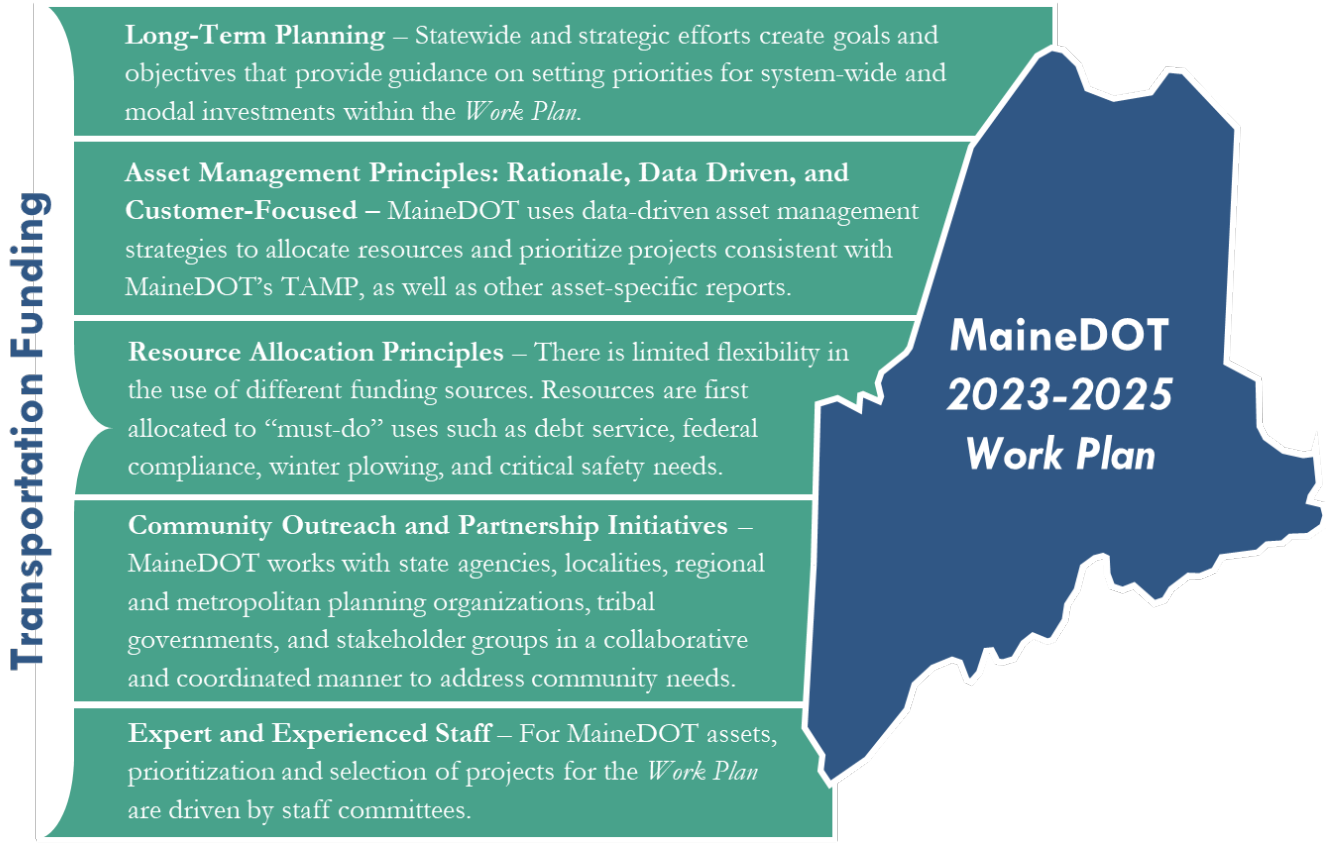
- **Other sources**, shown as the red items in Figure 2.2, include bonding and matching funds from Maine municipalities and other transportation partners. GARVEE bonds, totaling $75 million, are repaid with future federal formula funds. Multimodal funds, which include funding from car rental taxes, aviation fuel taxes, rail taxes, and island ferry subsidies, total $75 million. The *Work Plan* is also based upon the anticipated receipt of about $211 million from municipalities.

- **Previously programmed** funds represent amounts carried forward that were previously programmed, which is typical in a long-term capital program.

How Do We Make Investment Decisions?

MaineDOT continues to fulfill our mission of supporting economic opportunity and quality of life by responsibly providing customers the safest and most reliable transportation system possible, given available resources. Uses of funds to meet MaineDOT's mission are determined by several factors as presented in Figure 2.3.

Figure 2.3 Factors Shaping the Use of Funds



The strategies and processes described above result in the listing and description of individual projects and work activities in the *Work Plan*. As shown in Figure 2.4 and described below, activities in this *Work Plan* can be broken down into four high-level categories: (a) capital work including highway and bridge capital projects and multimodal capital work, (b) operational activities including highway and bridge maintenance and operations and multimodal operations, (c) system management work, and (d) administration. Highway and bridge capital and operations together represent 72 percent of the *Work Plan* (the two blue wedges).

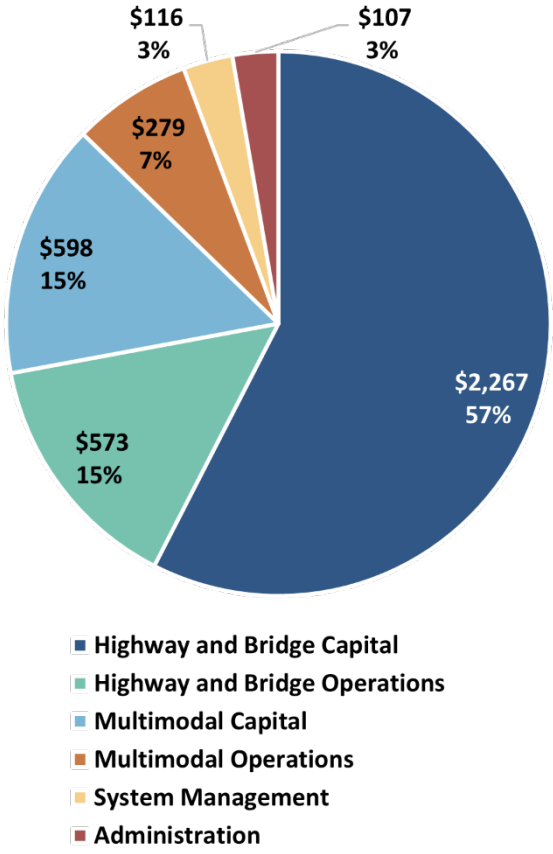
- **Capital Work** – The dark blue and dark green wedges represent more than $2,840 million in capital investments: $2,267 million is committed to highway and bridge projects and $573 million to multimodal projects that together help improve the mobility, accessibility, and safety of the transportation system. In total, this represents 72 percent of all MaineDOT planned investments in the *Work Plan*.

- **Operations Work** – The light blue and green wedges represent $877 million in maintenance and operations work to maintain and preserve assets and operate the system, including transit, passenger rail, ferry service, and aviation.

- **System Management** – The yellow wedge represents $116 million to continuously monitor the performance and condition of transportation assets, making sure the projects and scopes selected are the right ones. System management also includes asset management, planning, environmental work, compliance, and safety efforts.

- **Administration -** Administration includes executive functions, finance and administration, human resources, most non-crew training, legal, information technology, federal compliance activities, and other traditional administrative activities needed to support any large and complex organization.

Figure 2.4 MaineDOT Uses of All Funds (millions, 2023-2025 Work Plan)



How Do We Deliver?

MaineDOT's Mission

To support economic opportunity and quality of life by responsibly providing our customers the safest and most reliable transportation system possible, given available resources.

MaineDOT employs approximately 1,600 people and expends or disburses an amount approaching $1 billion per year, including federal, state, and local funds to support our mission across all Maine communities. This is accomplished across an organization led by the executive office; four bureaus, including finance and administration, maintenance and operations, planning, and project development; and eight offices covering civil rights, creative services, environmental, freight and passenger services, highway safety, human resources, legal, and results and information. MaineDOT has five maintenance regions, each with a headquarters and multiple regional offices to help maintain and keep open approximately 8,800 lane miles and 2,800 bridges. The complete highway system in Maine, maintained by MaineDOT and other state and municipal agencies totals nearly 23,000 lane miles of roadways and 3,800 bridges. MaineDOT provides a regularly updated list of all projects under construction on our website[xiii] as well as unique webpages that share information about specific major projects.

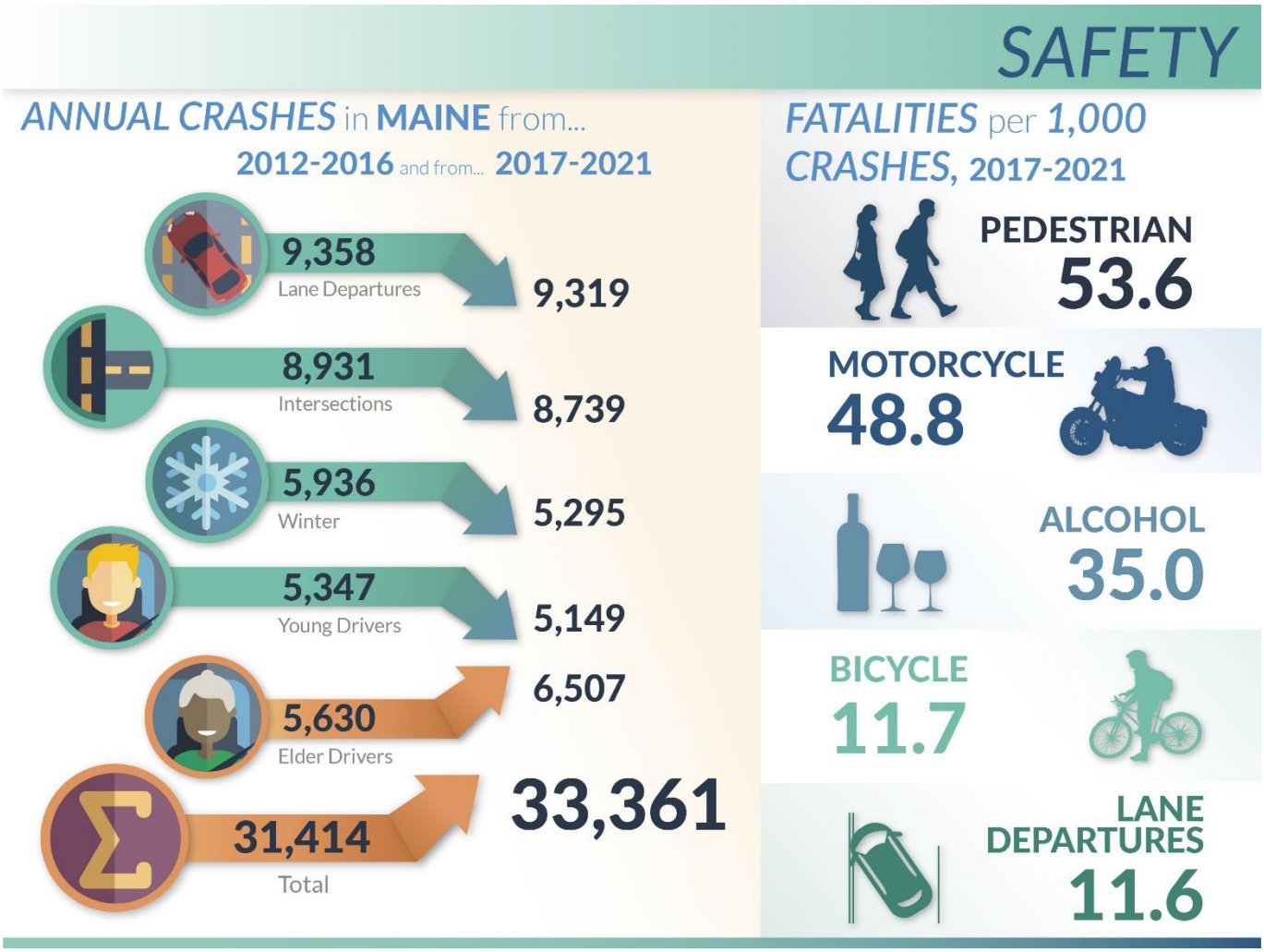
2.3 Future Trends Shaping Transportation

What Trends Will Impact Our Transportation Future?

There are many trends driving the current and future direction of Maine's economy, population, and transportation system. Maine's **aging population** will have implications for roadway safety, the size of the workforce, the types of jobs demanded in the labor market, the types of transportation mobility services offered, and how Maine may benefit from emerging technologies and investments in natural resource and energy sectors.

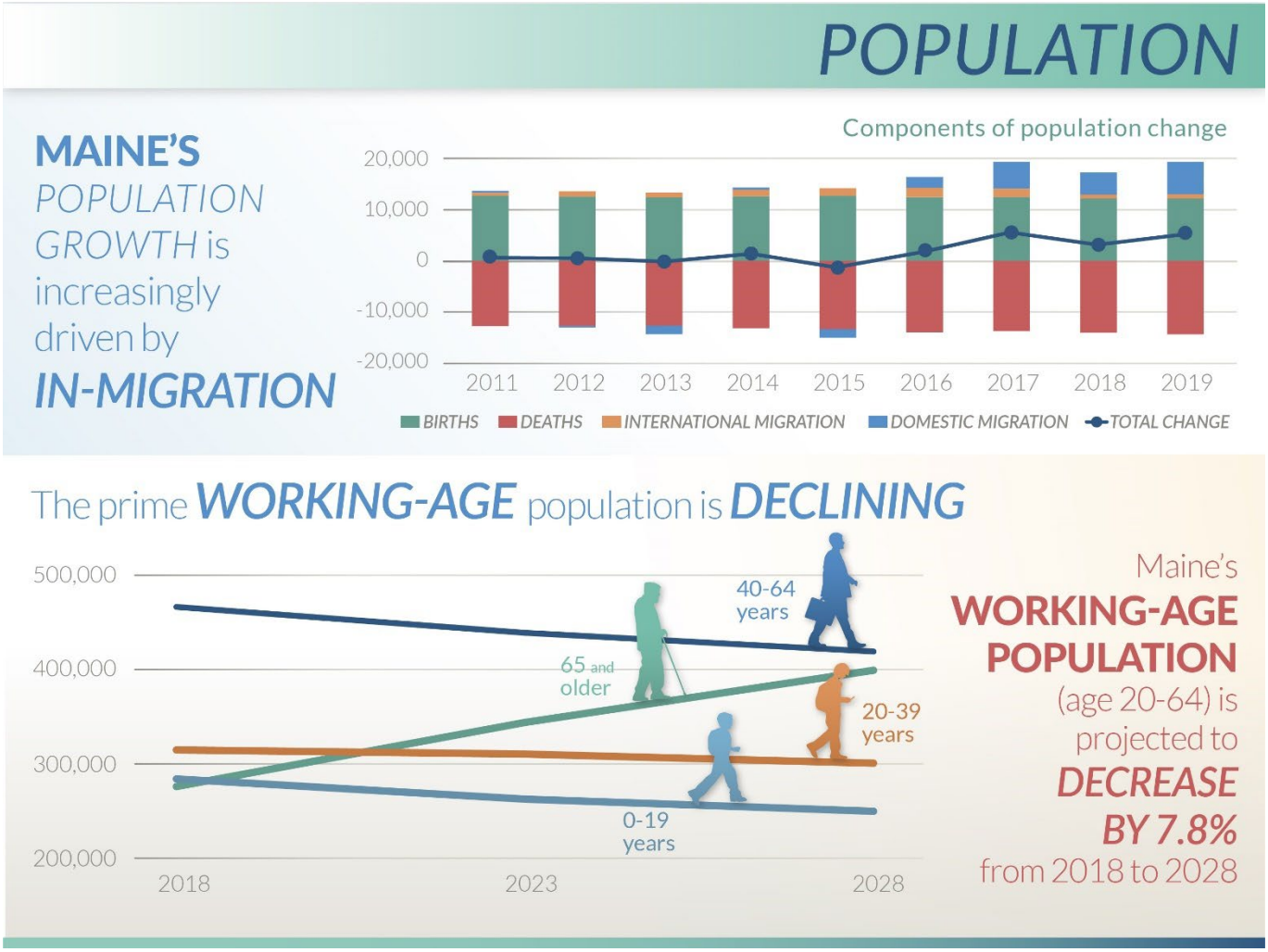
Similarly, **technology** has the potential to shape MaineDOT's ability to address transportation safety challenges, the types of jobs and skills required from Maine's workforce, available tools for mitigating emissions and energy consumption and adapting to the impacts of climate change, the dominant industries in global trade, and the nature of everyday activities in Maine's cities and rural places. **Climate change** will affect migration patterns, Maine's industries and tourism sector, and extreme weather, thereby shifting the calculus around where Maine people live and how we maintain our transportation system.

This section describes trends in Maine around eight key topics: safety, population, development, labor market, technology, global trade, climate, and tourism. MaineDOT considers these topics to be the most crucial in considering the future of Maine's transportation system, particularly in how they impact decisions shaping future MaineDOT *Work Plans* and ongoing planning, delivery, and performance measure processes. MaineDOT will continue to keep our eye on these topics while also tracking emerging trends, including topics like energy uncertainty and information security. More information on the data sources supporting these trends is available in **Appendix D**.



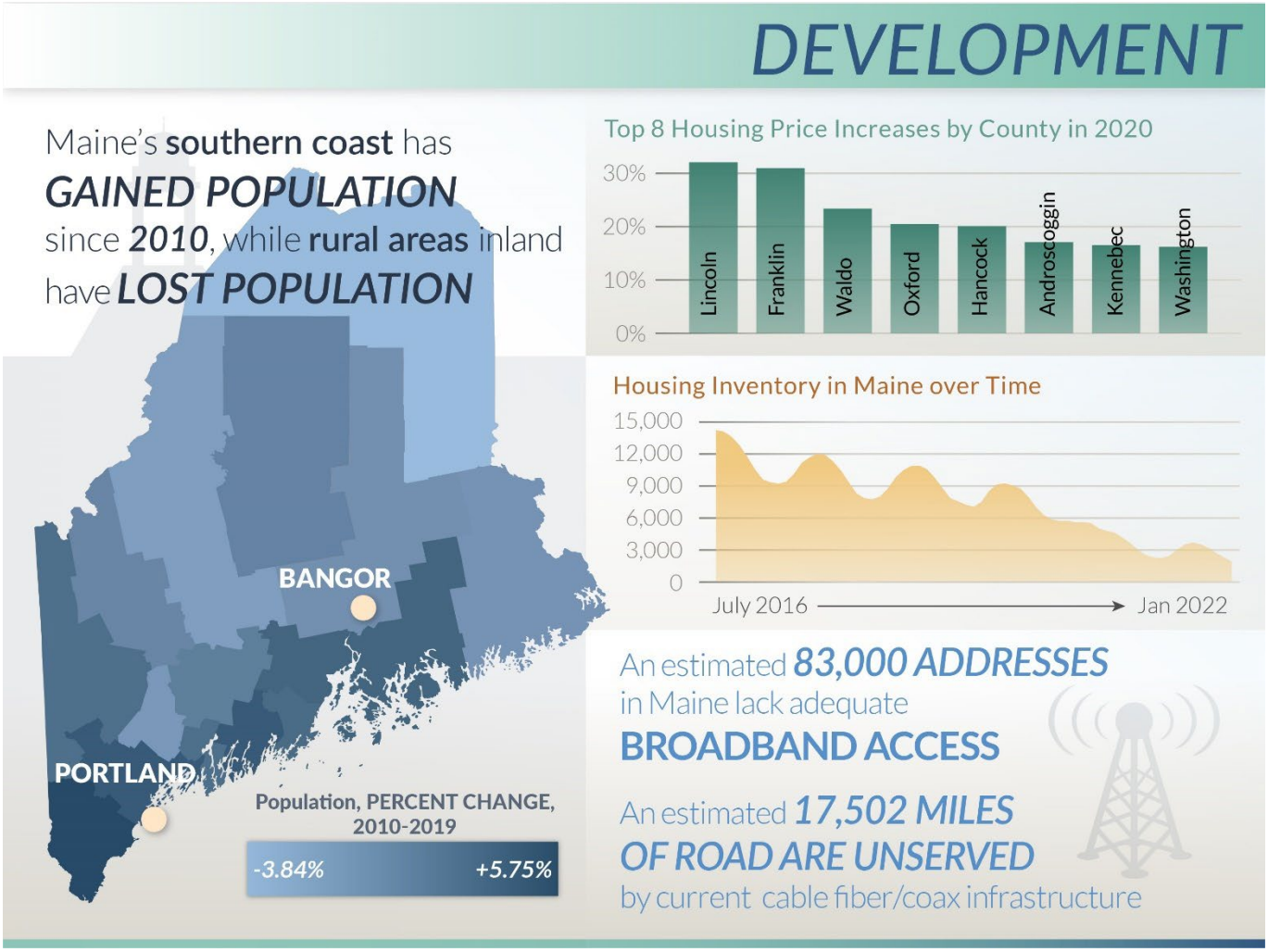
Safety remains MaineDOT's top priority. MaineDOT's goal is to provide a safe transportation system for all users and modes of transportation. Nationwide, roadway safety trends moved in a concerning direction during the COVID-19 pandemic; National Highway Traffic Safety Administration (NHTSA) data indicate that while there was a 13-percent decrease in VMT from 2019 to 2020, that same period saw a 7.2-percent increase in fatalities. Given this context, it is encouraging to see Maine's crashes in many categories decreased in the 2017-2021 period, including lane departures, intersection crashes, wintertime crashes, and crashes involving young drivers.

The state's aging population is driving an uptick in crashes involving older drivers. In 2017, of the 953,927 people in Maine holding a valid Class C driver license, 134,432 (14 percent) were 70 or older. In 2020, 982,155 people in Maine held a Class C license, with 162,947 (17 percent) being 70 or older. Though research nationwide has shown that older adults engage in safer driving behaviors than other age groups, drivers who are 70 or older are more likely to be in a fatal crash compared to younger drivers. Understanding the transportation needs and behaviors of Maine's older population will be an important task in making the state's transportation system safer for everyone.



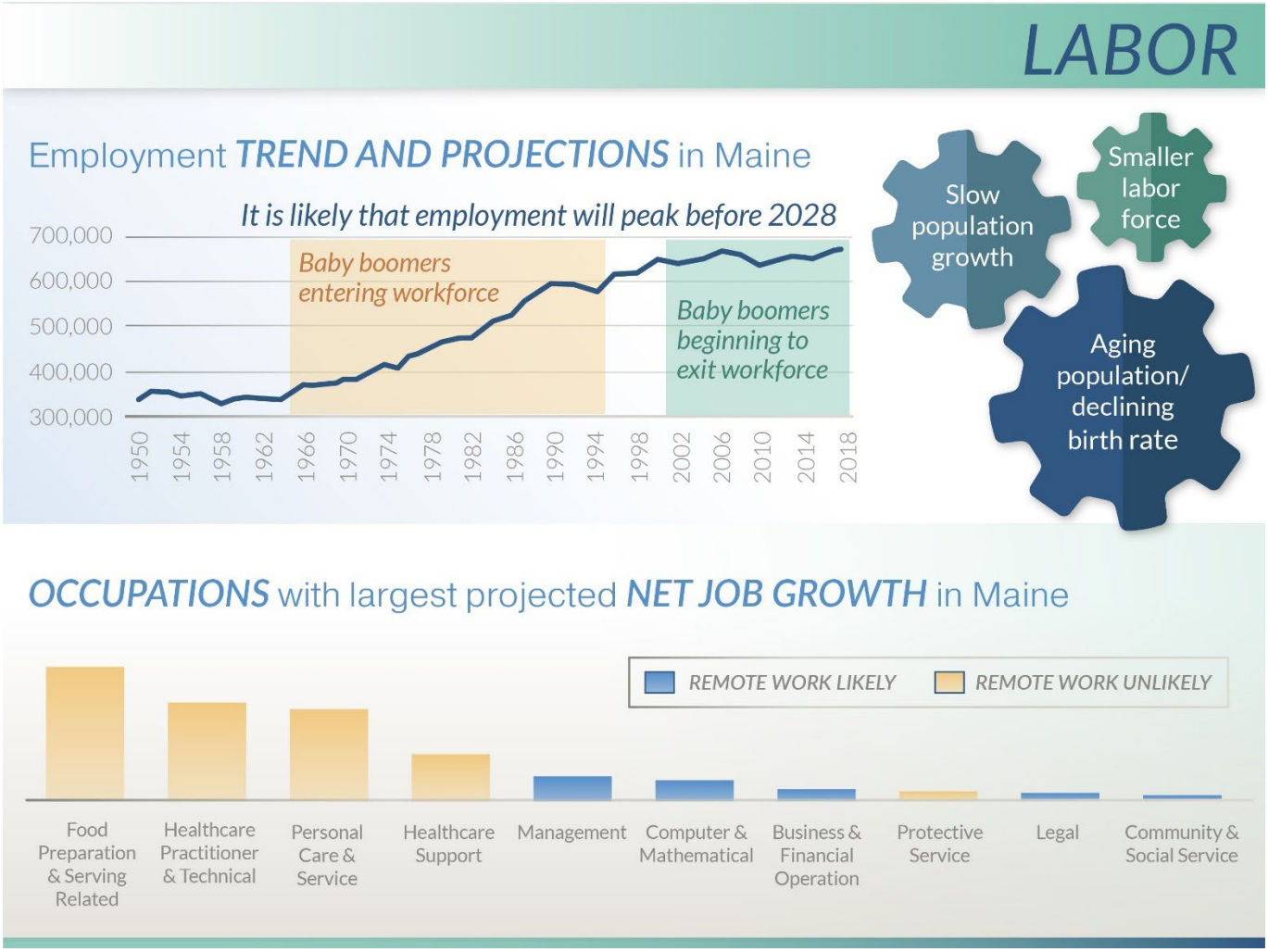
Maine's population is growing primarily due to in-migration. There are three components of population change: births, deaths, and net migration (domestic and international). In Maine, a combination of increasing deaths and decreasing births has led to a negative "natural" population growth. Maine is one of four states that had natural population decline in 2019 (West Virginia, New Hampshire, and Vermont also had fewer births than deaths). This trend is expected to continue; as Maine's baby boomer cohort ages, the rate of deaths will naturally increase. Conversely, the birth rate in Maine has consistently declined in recent decades. The aging of Maine's population has substantial implications for the size and age of Maine's workforce; as Maine's working age (20-64) population ages, people 65 and older are projected to become the largest population group in Maine. Maine will need to consider the mobility, access, and transportation needs of this aging population.

Maine's net population growth is driven by migration, primarily from other states. From 2016 to 2019, Maine's net domestic migration accelerated, with 6,613 new Maine residents from other states in 2019. Population growth and the demographic composition of residents have myriad impacts on Maine's economy. An influx of working-age population tends to lead to stronger job growth as businesses have a larger pool of qualified workers from which to draw. As such, we need to encourage and welcome new workers.



Maine continues to centralize. The state has seen a trend towards concentrated population throughout the past decade as Maine's more urbanized southern coast has experienced continued population growth. Demand for housing provides insight into the types of places people want to live, and there have been some recent changes to these longer-term trends. Home sales and prices climbed throughout Maine in 2020, and rural counties saw some of the greatest increases in sales and prices; Washington, Aroostook, and Piscataquis all saw more than 30-percent growth in the number of sales compared to 2019. Contributing to high housing prices throughout the state was a low for-sale inventory, which has long been decreasing.

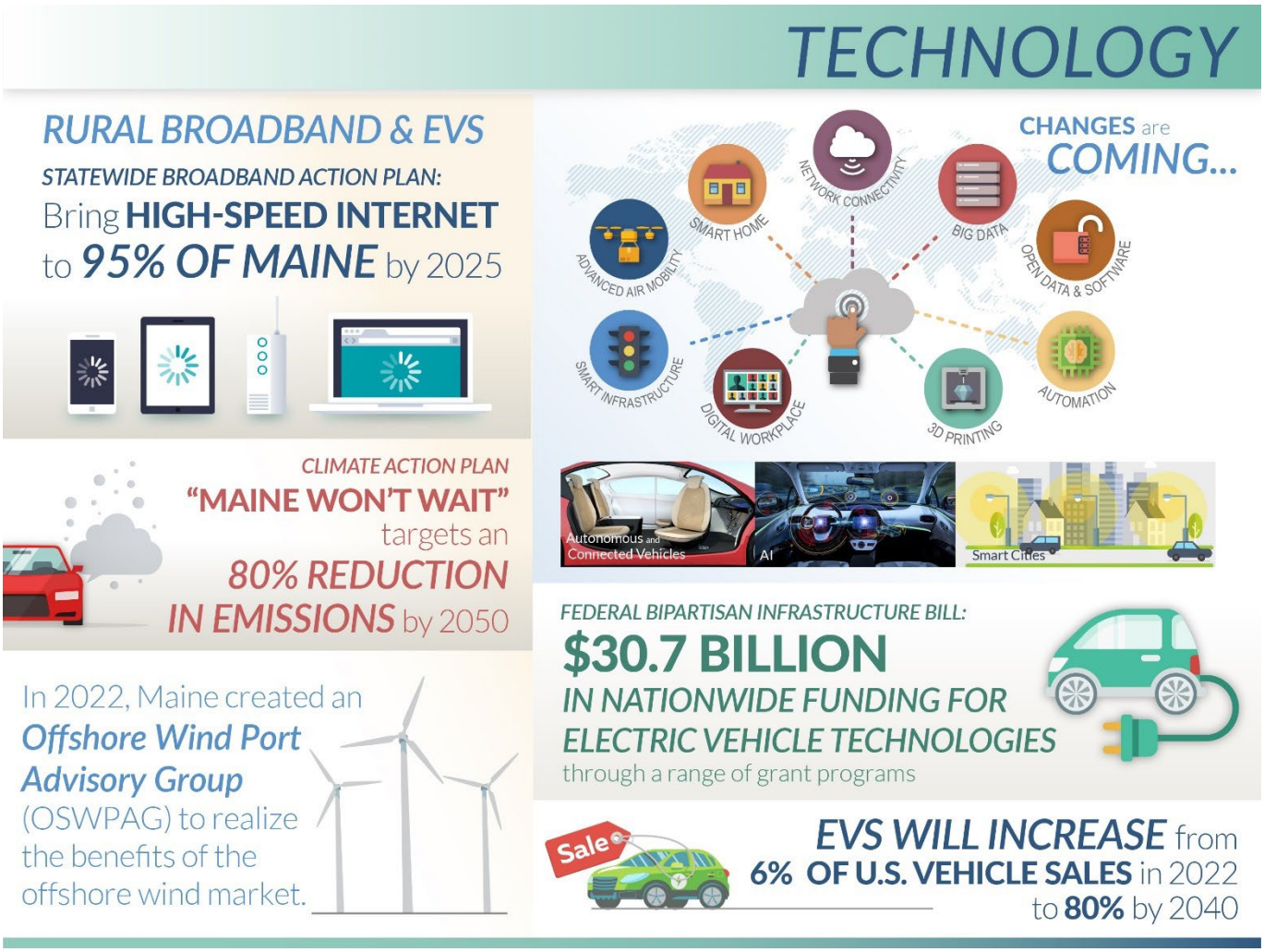
Given an increasing number of workers working remotely in the wake of the COVID-19 pandemic, universal access to high-speed broadband has an increasing impact on workers' decisions around housing location and where to work in Maine. Maine's legislature established the ConnectMaine Authority, an independent state agency with a mission to facilitate the universal availability of broadband to all Maine households and businesses. The Authority's *Broadband Action Plan* establishes a plan to spend at least $600 million to bring high-speed internet to 95 percent of Maine by 2025. This effort will play a foundational role in attracting workforce and reducing inequality in Maine's educational system.



Maine's labor force is facing availability and skill challenges. As discussed under the "population" trend, the size of the working age population is important because a large workforce positively impacts job growth; businesses and jobs tend to grow when there is a larger pool of qualified workers.

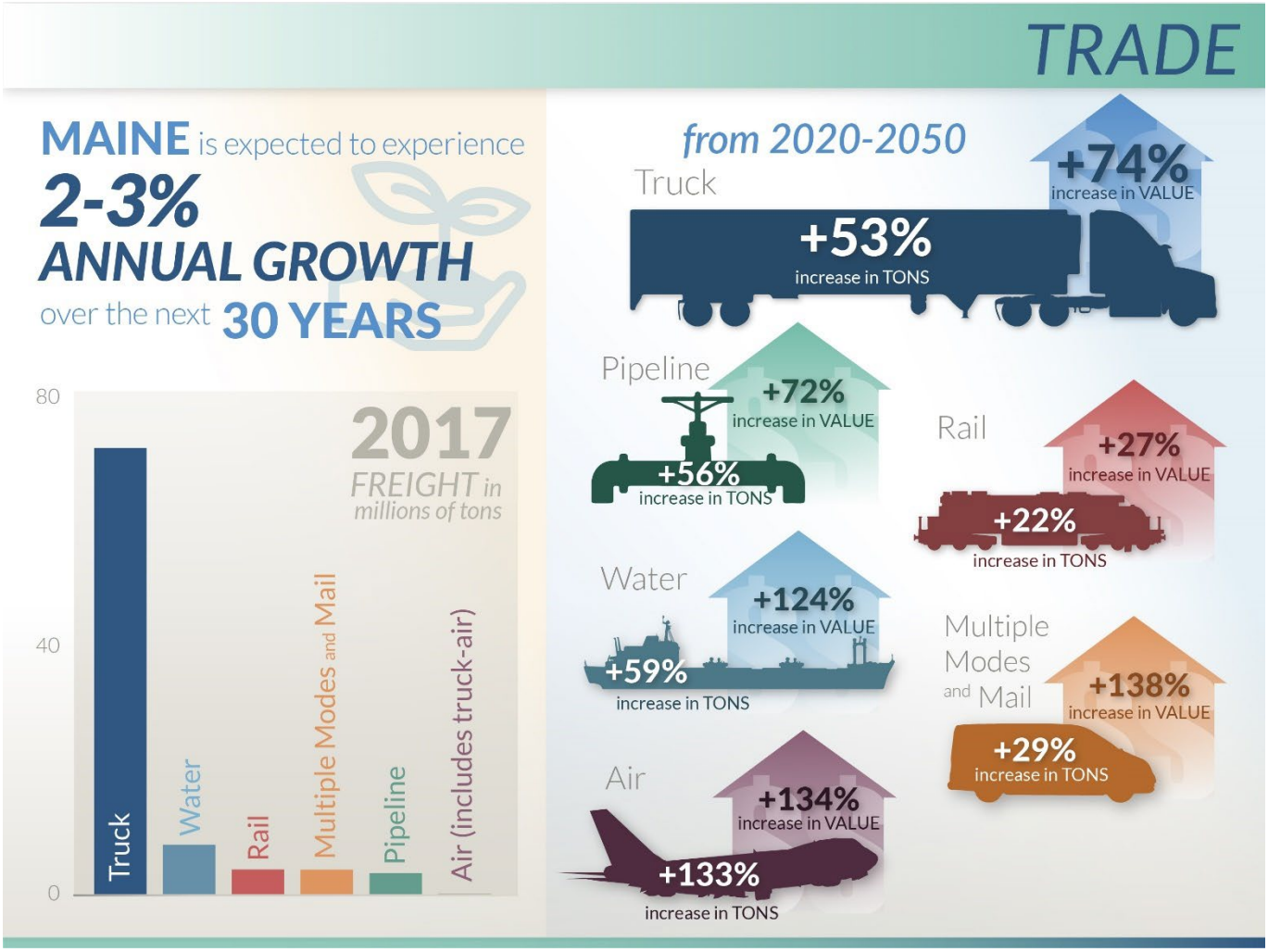
Though the long-term impact of a shift to remote work is uncertain, it is important to consider how projected job growth could interact with remote workplaces. Employment in Maine continues to shift from businesses that produce goods to those that provide services. The top four growth occupations in Maine are related to the hospitality industry and healthcare, which offer fewer opportunities for remote work. People employed in occupations requiring in-person work will need reliable and convenient commuting options. White collar occupations that may offer remote work such as management, legal, and business and financial operations are also expected to grow in Maine and will see at least some shift towards remote work.

Skills demanded by employers are continuing to change. Middle-skills occupations that perform routine tasks are anticipated to see a reduction in jobs as automation and information technology proliferate. There will be a demand for workers in both high-skill occupations and low-skill occupations (i.e., work that cannot be or has not yet been automated or requires limited educational requirements).



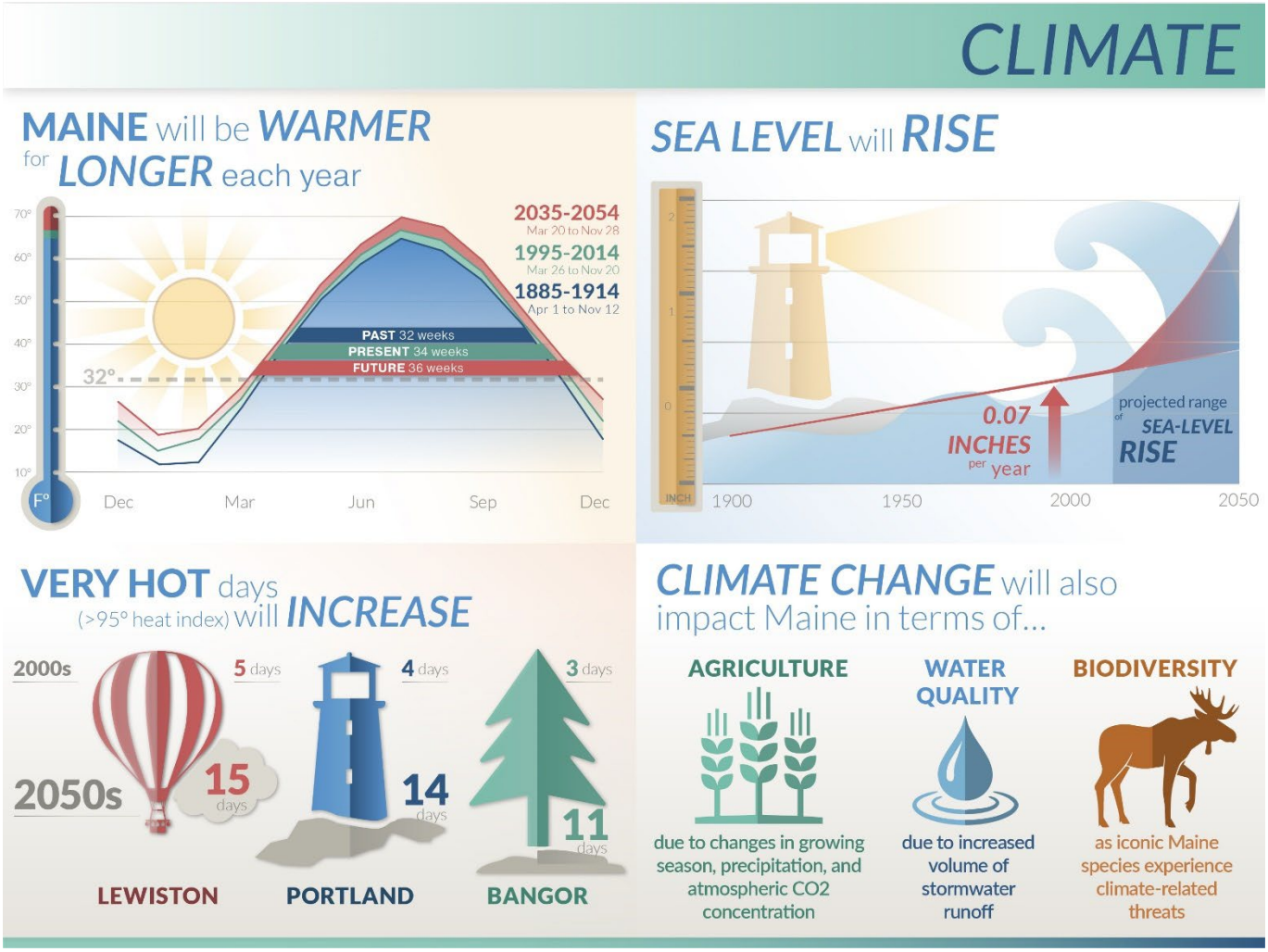
There is a range of emerging technology that is reshaping transportation. This includes electric vehicles (EVs), advanced air mobility, smart infrastructure, digital workplaces, 3D printing, connected and autonomous vehicles, open data and software, and connected infrastructure. While these technologies create opportunities for efficiencies, they also require new tools, data, and MaineDOT workforce skills to leverage and implement.

Major investments at both the state and federal levels will accelerate the proliferation of emerging technology in Maine. Maine's *Statewide Broadband Action Plan*, which aims to significantly expand access to high-speed internet in rural Maine, will enable further proliferation of connected and automated vehicle (CAV) technology. Electrification efforts are advancing in Maine; in 2021, there were 89 new stations in Maine providing 168 unique chargers. MaineDOT's *Plan for Electric Vehicle Infrastructure Deployment*[xiv] (PEVID) was approved by FHWA in 2022, positioning Maine to maximize opportunities to leverage federal National Electric Vehicle Infrastructure (NEVI) funding to expand charging infrastructure. These vehicle technologies, as well as renewable energy technologies in Maine, all contribute to *Maine Won't Wait's* goal of an 80-percent reduction in emissions by 2050. As an example, Maine created an Offshore Wind Port Advisory Group (OWPAG) to lead the task of capturing the benefits of the offshore wind market.



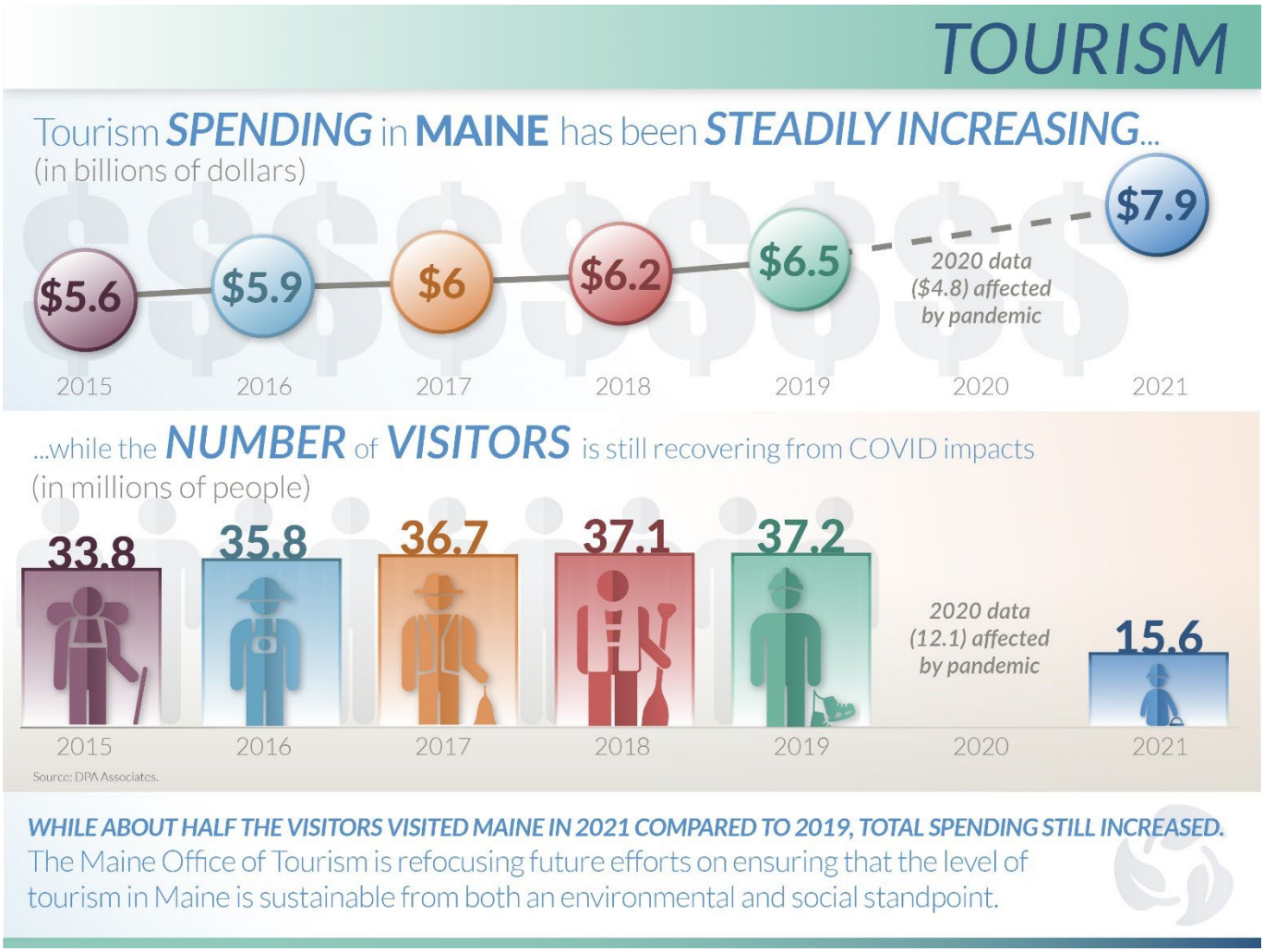
Trucking will remain the dominant mode for transporting goods in Maine. Trucking is anticipated to increase in the coming years, with forecasts estimating a 53-percent increase in freight tonnage by truck and a 74-percent increase in value through 2050. Trucking remains the most flexible, accessible, and cost-effective mode to transport goods, particularly for rural economies. However, recent years have been challenging for trucking, especially related to the availability of truck drivers.

Air transportation and transportation by commercial marine vessel are anticipated to see the largest increases in transport by value. Parcel shipments (represented above as multiple modes and mail) are anticipated to grow by 138 percent in value by 2050 due to continued expansion of on-demand delivery services. Rail will continue to grow, although constrained by infrastructure and commodity types. While rail only moved about six percent of all goods in Maine in 2019, a substantial portion of those goods were pulp, paper, or other wood products—highlighting the critical link that rail provides for Maine's forest products industries. Commercial drone deliveries are not yet approved by the Federal Aviation Administration (FAA), although FAA allows companies like Amazon, Google, Walmart, and United Parcel Service (UPS) to conduct test flights in urban areas. Commercial drone deliveries could yield benefits in rural areas by enabling on-demand transport of time-sensitive goods such as medical supplies.



Climate change will impact Maine's transportation system and economy. Climate models suggest Maine may warm by an additional two to four degrees Fahrenheit (°F) by 2050, depending on global progress in curbing greenhouse gas (GHG) emissions. Since 1895, Maine's statewide annual temperatures have risen by 3.2°F, with coastal areas warming more than the interior of the state. Extreme weather conditions in Maine such as drought and severe rain events are harming agriculture, shellfisheries, and freshwater and coastal ecosystems susceptible to climate change effects. More frequent severe storm events can destroy infrastructure and cut off communities from critical services, while more icing and a more severe freeze-thaw cycle will increase safety risks and pose a maintenance challenge.

The Maine Climate Council report *Maine Won't Wait* outlines transportation's role in contributing to climate change (54% of GHG emissions), the urgency with which Maine must slow the effects of climate change to make a meaningful contribution to global efforts, and the need to take bold action to prepare Maine's people, communities, and environment for climate-related harms to come. It also calls attention to the transformational economic opportunities related to climate change in Maine, such as the growth of clean-energy sources, including floating off-shore wind, and incentives for consumer, business, and industrial investment in energy efficiency through weatherization, innovative building materials, and alternative energy.



Tourism is a cornerstone of Maine's economy. Among U.S. states, Maine has the fifth highest value added as percent of state gross domestic product (GDP) for outdoor recreation (3.3 percent) in 2020, representing 4.6 percent of state employment (compared to a U.S. average of three percent). Though visitation and spending declined during the COVID-19 pandemic, the decrease in Maine (15.6 percent in 2020) was less than the average decrease nationwide (19.5 percent). Industry segments friendly to COVID-safe activities such as boating and fishing, bicycling, camping and RVing helped buffer losses. In 2021, tourism spending in Maine rebounded to 2019 levels, though visitation was about half of what it was in 2019.

In 2022, Maine's Office of Tourism embarked on a strategic plan to determine how Maine tourism could extend into four seasons and adapt to social and environmental impacts, shifting focus away from generating tourism and more towards managing the impacts of tourism. For example, lesser known but emerging destinations outside major tourist hubs may need assistance in handling larger crowds. Furthermore, the industry stands to be significantly impacted by a changing climate. Maine's natural environment is the driver of our tourism industry, and this industry is based on outdoor and recreational activities. As Maine becomes warmer, cold-weather activities such as skiing and snowmobiling may become less feasible. Similarly, sea level rise may impact Maine's beaches.

What Do These Trends Mean for Maine?

These eight trends will affect the use, management, and operation of the multimodal transportation system. The trends may also generate tensions in achieving Maine's vision for the future. The rising cost of housing may affect the state's ability to attract a younger workforce; Maine's tourism sector may have to rethink sustainability amidst a changing climate; technologies thought to be the solutions to many problems may proliferate more slowly, or less equitably, than originally assumed; and future economic growth may be tied to attracting and retaining new residents by making the economy inclusive for diverse communities.

Trends will not act on Maine homogeneously; the pace and intensity of trends, the scale and degree of the impacts, and the trends' relationships to the transportation sector will be variable. Our understanding of these trends should be sensitive to the differences across urban and rural areas, coastal and inland regions, and localities that are well connected and those that are not.

Outcomes will be intertwined; just as changes in demographics or the economy felt initially in Portland will filter into the lives of all Maine people, climate change will affect coastal communities through sea level rise and inland areas through flooding and extreme weather. Similarly, transportation barriers to economic realities in Maine's rural counties are inextricably linked to the health of Maine's economy overall.

Where Are the Key Uncertainties?

The extent to which pandemic-era trends will endure. Trend changes associated with the pandemic could be interruptions to longer-term trends, whereas others may prove to be paradigm-shifting. Will remote work become the new normal, prompting a shift towards counter-urbanization, and will remote work help Maine ease challenges around an aging population and a shrinking workforce?

The proliferation of emerging technologies. There is uncertainty around when and how many emerging technologies will proliferate. There is ambiguity with regards to technology rollout and application in rural areas; new technologies tend to appear first in cities, and their applications may be extremely different in urban compared to rural contexts.

The human response to a changing climate. Though the impacts of climate change on our natural environment have been established by science, the human response is unpredictable. For example, will Maine's tourism industry find ways to adapt to a changing climate? Will Maine's agricultural and forest products industries be able to adapt to new growing seasons, temperatures, and levels of precipitation?

The interaction between societal shifts and economic evolution. Societal shifts such as an aging population and in-migration will interact with the continued evolution of Maine's economy. How will workers in Maine take part in an economy that is increasingly concentrated around service industries, technology sectors, and health care? How will Maine's natural resources affect the availability of jobs, and will this new workforce have the right skills to occupy them? What needs, interests, and abilities will migrants to Maine bring with them, and how will Maine adapt?

3. Maine's Transportation Future

What are our system and customer needs for the future?

3.1 Our Transportation Needs

Connecting Our Plans

A Seamless, Integrated System

A **seamless** system means that there are no gaps between different transportation systems and services and that connections are convenient between transportation modes and to and from destinations. An **integrated** system means that systems and services are coordinated, enabling safe and reliable connections. Attaining a seamless, integrated transportation system in Maine is a fundamental value MaineDOT aims to achieve across the Family of Plans.

Travel is multimodal. People walk, bike, drive, rideshare, ride the bus, take the ferry, fly, ride rail, or choose not to make a trip at all based on their personal needs and circumstance.

The supply chain travels the globe. Every good you own has taken multiple trips and used multiple modes to travel from origin to factory to distribution center to stores and your home.

The spectrum of needs reviewed in the *LRTP* needs assessment, and more broadly, across the Family of Plans needs assessments, acknowledges issues constraining a seamless and integrated system across multiple dimensions, including the transportation experiences of our customers. Needs are reviewed from multiple angles – bottom-up by mode, system, corridor, and location from our modal and strategic plans, and top-down from the multimodal and integrated perspective of the LRTP. These two angles are confirmed by input from our customers and our current investment priorities in the *Work Plan*.

Table 3.1 provides a synthesis of key findings from the needs assessments for each modal and strategic plan within the Family of Plans.

Table 3.1 Needs Synthesis Across Maine Family of Plans

Mode	Near-Term Needs	Long-Term Needs
Rail 	• For both passenger and freight rail, infrastructure conditions, capacity and bottlenecks, rolling stock, and safety. • Improve existing Downeaster service and review opportunities for passenger rail service expansion. • Improved service to existing customers and system improvements to attract new customers (freight rail).	• For both passenger and freight rail, state of good repair and infrastructure capacity upgrades, direct and efficient multimodal and intermodal connections, and safety improvements. • Improved customer access and terminal improvements for freight rail. • Additional feasibility studies to prioritize corridor preservation and potential expansion for passenger rail.

Mode	Near-Term Needs	Long-Term Needs
Transit 	• Increased service frequencies, hours of service, coordination between transit agencies, and geographic coverage. • Increased public transit funding. • Implementation of electric and other zero-emission vehicles. • Technology improvements, including integration of statewide transit services to GTFS and GTFS-flex and CAD/AVL systems on transit vehicles. • Quantification of demand and increased door-to-door service in rural areas.	• Consideration of emerging origin-destination patterns, including in rural areas, to facilitate better multimodal connectivity and accessibility. • Tracking emerging transit needs for Maine's aging population and increasing service to this group. • Consideration of how to structure transit services to meet the needs of transit-dependent populations rather than to maximize ridership levels. • Systems that alleviate driver and labor shortages.
Roads 	• Use of physical interventions, education, and technology applications to address safety issues related to illegal/unsafe speeds, lane departure, seat belt usage, younger drivers, impaired driving, distracted driving, mature drivers (65+), motorcycles, winter crashes, intersection crashes, commercial truck and bus safety, pedestrians and bicycles, large animals, and operating after suspension.	• Increased awareness of seatbelt safety and hazards of distracted, teen, and impaired driving. • Educational programs targeted towards Maine's specific roadway safety needs. • More robust safety programs for senior drivers as the senior population increases.

Active Transportation 	• Safety education (across modes) and active transportation programs for children and adults.
	• Focus on ADA accessibility, transit access, and closing system gaps.
	• Use of pilot projects to rapidly implement and test potential improvements.
	• Enhanced Complete Streets implementation based on land use context and traffic volume/speed.
	• Local cost sharing and equitable funding throughout the state.
		• An interconnected, safe active transportation network that facilitates multimodal connections along High-Priority Active Transportation (HPAT) corridors and in towns and cities:
		  ○ Appropriate on-road connections in rural and urban areas.
		  ○ Off-road trail connections.

Public Outreach: What is Important to Maine People

MaineDOT conducted a survey for the *LRTP* requesting feedback about the statewide issues, needs, and priorities that Maine's residents, visitors, and businesses view as the most important. The survey received nearly 400 responses and was completed after surveys conducted for both the Transit and Active Transportation Plans. The survey was one element of MaineDOT's outreach initiatives, which also included virtual public meetings, public comments, and targeted stakeholder meetings.

All Maine people want to feel safe as they travel with confidence that they can securely navigate from origin to destination by any mode without injury. Safety touches all aspects of transportation in Maine.

Survey respondents selected infrastructure maintenance and improvements as the number one priority for MaineDOT investment, which can promote safety by creating safe environments for multimodal use, such as high-visibility pedestrian and bicycle infrastructure next to well-maintained roadways. Maine people also suggested education and enforcement initiatives to increase safety, such as "share the road" educational campaigns or increased speeding and aggressive driving enforcement.

Respondents identified needs centered on meeting all Maine people where they are – not only in terms of geography, but their life stages, priorities, and habits. Needs may look different across the state, such as urban compared to rural settings or for residents compared to visitors. However, three needs stood out. As presented in Figure 3.1, seven out of ten respondents thought that Complete Streets, safe road conditions, and well-managed highway conditions were critical needs in Maine.

Figure 3.1 Top Critical Needs Identified in LRTP Survey

MaineDOT customers want practical multimodal mobility solutions that enhance the ability to travel across Maine to meet all travel needs, including commuting, access to goods and services, and recreation. The majority of respondents wish for expanded public transit and passenger rail that provide fast, convenient, frequent, reliable, and affordable options for inter- and intra-city travel. Maine people want transfer points between modes to be accessible, welcoming, and conveniently located. Specific issues identified by respondents included addressing first/last mile transportation, public transit access in rural areas, and limited travel options for Maine people who do not own personal vehicles.

Maine people also seek a sense of connected community within walkable, livable neighborhoods where people feel safe and can easily access amenities. In particular, the majority of respondents want more opportunities to walk, bike, and use other micromobility options. Respondents requested more dedicated active transportation infrastructure, such as sidewalks, shared use paths, widened shoulders, separated bike lanes, bicycle parking, striping, and bicycle rideshare programs. Another example was the creation of connected networks of trails and paths, which could serve work and errand trips in addition to recreation. Maine people also want to feel comfortable and protected while moving about their communities.

Maine's customers want comprehensive solutions to address the impacts of climate change, such as strengthening the state's preparedness for risks due to rising sea levels, more intense storm events, and more frequent inland flooding. Maine people seek the protection and security of their property and communities through adaptive infrastructure design and maintenance. Many respondents stressed that MaineDOT and other agencies must increase the attractiveness and coverage of zero- or low-emissions transportation options, such as electrified buses and EVs. In particular, access must be equitable for all Maine people, regardless of socioeconomic status, vehicle ownership, or geographic location.

Defining and Measuring Needs

Transportation needs in Maine are characterized in the *LRTP* across four dimensions:

- **When?** – Is the need critical today or in the future, and how might it change over time?
- **How Much?** – What is the cost of addressing our needs, and what are the benefits for our customers?
- **Where?** – How do community priorities and context shape the investments we make to meet our needs?
- **Who?** – Who are the partners we work with to plan for, fund, and deliver transportation projects and services, and how do we make sure we serve all Maine people?

When? (Our Most Critical Needs and How They Change Through Time)

Transportation needs vary over time. MaineDOT operates under a single department-wide business process, OneDOT. This process, as depicted in Figure 1.1, incorporates the three basic phases of any management process: plan, deliver (implement), and measure. The process is continuous and helps structure MaineDOT's work phases to prioritize, schedule, and advance investments from concept to delivery.

Understanding Time Horizons

Near-term needs are those that can and should be addressed during the next 10 years. This type of need is often characterized by the following qualities:

- **Specific**: Because it exists in the near future, the need is more concrete and well-defined compared to a longer-term need.
- **Timely**: The need is driven by recent trends and the current vision and goals of residents, visitors, and the State of Maine, including goals and targets established by MaineDOT.
- **Fiscally constrained**: Solutions associated with the need are constrained by projected revenue sources, including both federal formula funds and discretionary grants enabled through BIL.

Figure 3.2 highlights how dynamic needs interact with planning and programming cycles. Near-term needs are addressed through ongoing studies and project development activities that prepare projects ready to compete for funding within future *Work Plans*. Long-term needs are identified through planning studies and positioned in modal and strategic plans as priorities for investment throughout the next ten years and beyond.

Figure 3.2 Plan-Deliver-Measure Cycles

Approaches towards addressing near-term needs are driven by MaineDOT's goals, policy, and funding rules. MaineDOT's *Work Plan* identifies investments during the next three years, while the *STIP* and *MPO Transportation Improvement Programs (TIPs)* identify all projects receiving federal funds throughout the next four years. MaineDOT's *Transportation Asset Management Plan*[xv] (*TAMP*) identifies strategies to maintain NHS bridges and pavements throughout a 10-year period. Addressing near-term needs balances delivering proven solutions with piloting new strategies. This allows Maine to effectively address pressing needs while growing our toolbox, positioning our state to meet changing needs and trends throughout the long term.

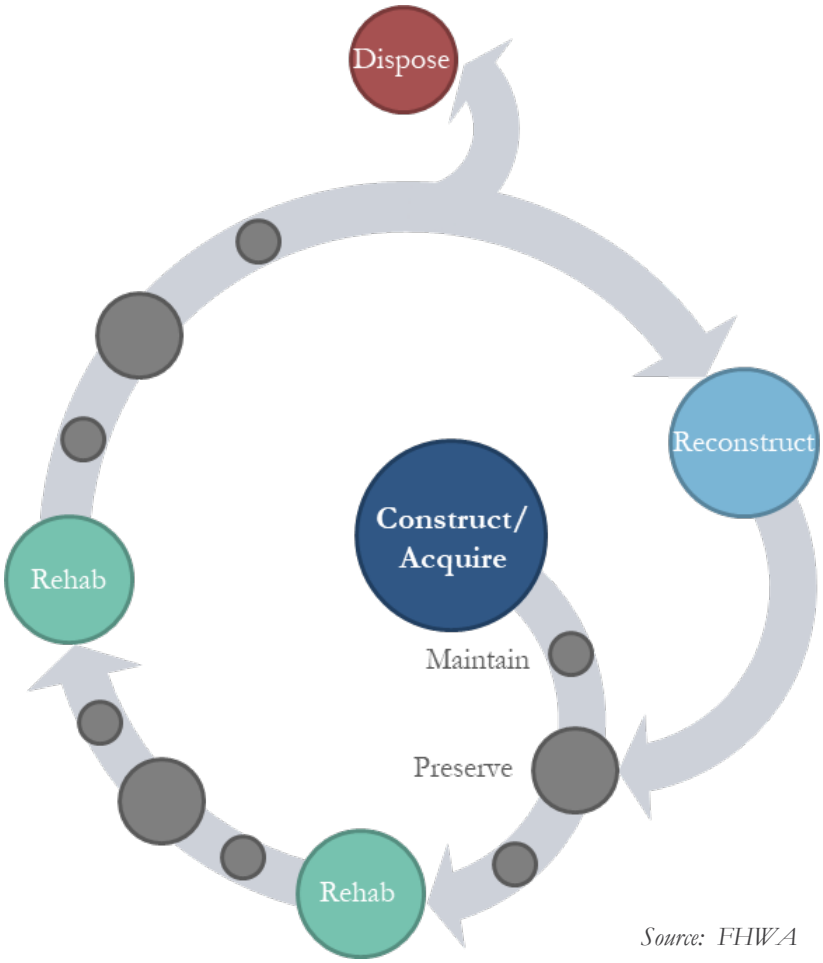
Maine considers our long-term needs to be those most relevant in the 10-year range. Addressing longer-term needs follows the MaineDOT-established vision and goals in a constructive way, being careful not to be "boxed in" in the face of dynamic circumstances. Characteristics of these longer-term needs include:

- **High-Level:** Because of ambiguity regarding the longer-term future, these needs – though clearly defined – will be visionary and conceptual in nature now and clarified over time.
- **Dynamic:** Maine recognizes that changes in trends throughout the coming decades may lead to a shift in needs; longer-term needs are understood to be subject to change.
- **Fiscal:** In the longer-term, funding levels and priorities may change; MaineDOT's strategy for managing the future funding is to estimate early and revise often based on available funding.

Changing Needs

There is a "life cycle", see Figure 3.3, to all transportation investments broken into distinct stages of that asset's useful life. In asset management, life cycle planning defines the collection of treatments that produce the minimum life cycle cost of an asset while achieving a state of good repair or other maximum benefit. Life cycle planning may be done at the asset level (e.g., an individual bridge), the asset class level (e.g., asphalt pavement), and at the network level (e.g., Maine's entire NHS network). Devising optimized strategies for asset management is straightforward when considering current asset condition, asset age, and the expected rate of deterioration. Establishing optimal asset management strategies can be complicated by uncertain or changing constraints such as funding levels or asset tradeoffs among other variables (risks), like weather, extreme events, supply of materials, or workforce shortages.

Figure 3.3 The Life Cycle Asset Management Process



Source: FHWA

In long-range planning, an asset need today may be met by funding tomorrow, but not in perpetuity; life cycle asset management is a cyclical process that involves construction, maintenance, and cycles of rehabilitation.

How Much? (Costs of Maintaining and Operating our System)

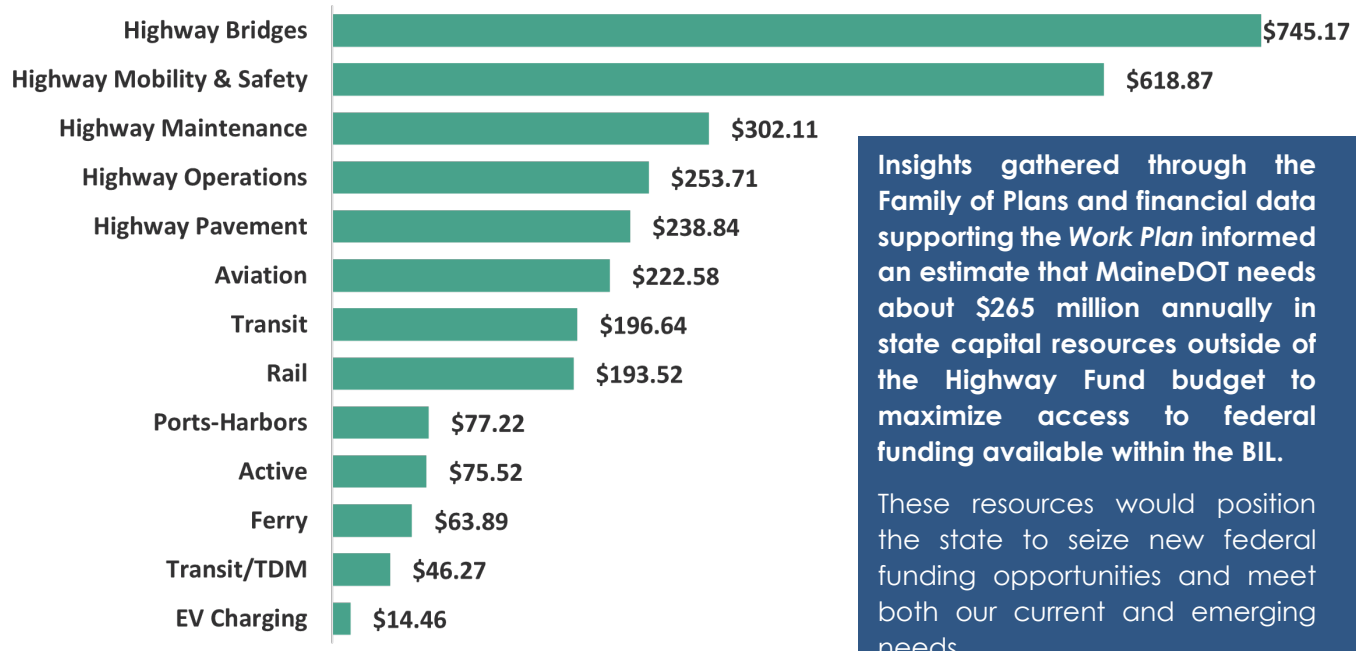
There are many factors, both internal and external, that shape the costs of doing business and the costs to address our needs. The anticipated spending outlined in MaineDOT's *Work Plan*, insights gathered from recent strategic plans (including the *TAMP*), and understanding unit costs of specific investments in Maine helps quantify some factors. There are a diversity of investment programs that are available to help meet Maine's transportation needs as well as practices within MaineDOT that ensure efficient use of funding.

MaineDOT's *Work Plan*

The MaineDOT *Work Plan* outlines the work that MaineDOT plans to perform during the next three years. As discussed within the time horizons section, projects and activities listed for Calendar Year 2023 have the most definite schedules and estimates, while those for Calendar Years 2024 and 2025 may be more subject to change. Planned uses of transportation funds in the Work Plan are typically segmented by the mode or scope of work, as was shared in Figure 2.4.

This section deconstructs the *2023-2025 Work Plan* differently by summarizing estimated funding by need category (e.g., mode, system) and need types (e.g., asset management, capital, operations, maintenance). Figure 3.4 summarizes the *2023-2025 Work Plan's* estimated investments by need category. This information provides insight into the average annual spending available to address needs and obligations, showing that investments supporting highway system needs, including bridges, pavement and asset maintenance, and safety and mobility receive the most funding. Note that many investments meeting these needs also may provide multimodal benefits (e.g., a separated bike lanes in a roadway widening project).

Figure 3.4 Estimated *2023-2025 Work Plan* Investments by Need (millions)



Source: MaineDOT 2023-2025 Work Plan

Insights gathered through the Family of Plans and financial data supporting the *Work Plan* informed an estimate that MaineDOT needs about $265 million annually in state capital resources outside of the Highway Fund budget to maximize access to federal funding available within the BIL.

These resources would position the state to seize new federal funding opportunities and meet both our current and emerging needs.

The *Work Plan* represents a fiscally constrained investment program. It addresses a subset of MaineDOT multimodal transportation needs consistent with anticipated resources and funding and programming requirements. Highlights on total investments by different mode are presented below.

- **Highway**: The largest and most heavily used component of Maine's transportation system is the 8,800-mile, state-jurisdiction highway network. Among highway needs, bridge and pavement preservation and maintenance, and mobility and safety are anticipated to be the largest areas of work. These investments, totaling nearly $2.2 billion in the *Work Plan*, include active transportation investments folded into highway projects; funding to maintain and improve other highway infrastructure like signals, signs, and lights; and programs to manage traffic incidents and special events.
- **Transit**: The *Work Plan* supports Maine's 22 regional and local transit providers. MaineDOT allocates an estimated $100.4 million in the *Work Plan* for capital funding investments, such as new transit vehicles. The remaining bulk of transit funding supports allocations for transit operations, totaling $156.1 million in the *Work Plan* towards operational expenses for fixed-route and demand-response transit services and programs and incentives provided through GO Maine.
- **Ferry**: Maine's *Work Plan* allocates $21.1 million in capital funding for the Maine State Ferry Service (MSFS) and Casco Bay Island Transit District (CBITD) capital projects, including funding for ferry rehabilitation and infrastructure improvements at various locations. Other funding supports ferry operations, ferry rehabilitation and maintenance, and ferry facility maintenance activities.
- **Active Transportation**: Maine's *Work Plan* allocates $46.5 million in funding for stand-alone active transportation projects. Investments include sidewalk construction, crossing improvements, off-road transportation-related trails, and active transportation safety improvements. Other active transportation investments include installation of ADA infrastructure, bicyclist signage, roadway striping, and other safety improvements.
- **Passenger and Freight Rail**: MaineDOT allocates funding for NNEPRA (Downeaster passenger rail) capital needs and operations totaling $71.9 million throughout the three-year *Work Plan*. Maine's $131 million in freight capital investments will include operational improvements on state-owned rail lines, improvements at railroad crossings, and improvements to critical rail bridges and other rail line capital projects. Included in that total is $2 million available in 2023 for the Industrial Rail Access Program[xvi] (IRAP), which leverages private funding.
- **Aviation**: MaineDOT's *Work Plan* allocates $169.6 million in funding for aviation capital needs statewide. Capital projects include runway and taxiway reconstruction, safety improvements and devices, and other enhancements to improve airport access and support economic development. Funding also supports airport operations and facilities management.
- **Ports and Harbors**: MaineDOT's *Work Plan* allocates nearly $75 million in total funding for ports and harbor investments, with $32.6 million is allocated to new boat launches, improved parking, and marina/wharf improvements in Lubeck and Camden funded by federal grants. Related funding supports the improvement of intermodal freight facilities adjacent to the International Marine Terminal.

Costs to Maintain the System to Achieve our Goals

Maine's *2022 TAMP* provides insight into the levels of investment required to maintain the state's NHS. The *Keeping Our Bridges Safe*[xvii] *(KOBS) Report* and the *Roads Report*[xviii] *(RR)* expand the insights gathered through the *TAMP* to the entire highway system. As the largest and highest value transportation asset owned by Maine, and as the transportation system which MaineDOT's customers utilize most frequently, the highway system represents the single most critical economic asset for the state.

Within the *TAMP*, multiple scenarios were evaluated on the NHS through 2032, including:

- **Pavement Investment Strategy**: Modeling tested five funding levels ranging from $0 to $65 million annual investment. Results indicated that return on investment (ROI), measured as improved network level pavement condition rating (PCR), significantly decreased beyond a $60 million annual investment.
- **Bridge Investment Strategy**: Modeling tested five funding levels between $0 and "unlimited" annual funding. The ROI, measured as improved network level bridge condition, significantly decreased beyond a $60 million annual investment.

The *2022 TAMP* recommended 10-year investment strategy for MaineDOT-owned NHS bridges and pavement (excluding Maine Turnpike Authority bridges and pavement) is presented in Table 3.2. MaineDOT's primary tool for managing highway assets is through bridge and pavement management tools. These tools allow MaineDOT to analyze multiple budget scenarios and treatments throughout the life of a collection of assets and use insights from tool analysis to inform investment decisions.

Table 3.2 2022 *TAMP* Recommended Investment Strategy (2023-2032)

(millions)	Maintenance	Preservation	Rehabilitation	Reconstruction	Total
NHS Pavement					
Total	$19.0	$452.7	$175.2	$114.9	**$761.8**
Annual	$1.9	$45.2	$17.5	$11.5	**$76.1**
NHS Bridges					
Total	$25.0	$211.5	$22.0	$389.4	**$647.9**
Annual	$2.5	$21.2	$2.2	$38.9	**$64.8**
NHS Total					
Total	**$44.0**	**$664.2**	**$197.2**	**$504.3**	**$1,409.7**
Annual	**$4.4**	**$66.4**	**$19.7**	**$50.4**	**$140.9**

The *KOBS Report* looked at the health of all state-owned and maintained bridges across multiple funding scenarios through 2050. It found that with an annual investment of $240 million to $280 million, Maine will be able to maintain our bridges at a constant high level of performance throughout the coming decades. This

is above the current average annual investment of $200 to $220 million within the *Work Plan*, indicating a funding gap to continue to maintain and advance bridge condition.

There are several factors that impact costs and how they may change in the future:

- **Right-of-Way (ROW)**: Projects may require the taking of property, or ROW. The costs of these acquisitions are often difficult to anticipate; inflation and speculation can occur between ROW estimates and acquisition; damages, court costs, and utility relocation costs are highly variable; and other contextual information may change between project planning and implementation stages.
- **Cost of Materials**: The cost of materials can change significantly during the life of a project. Recent years have seen material cost increases approaching 60 percent, creating significant project delivery challenges. MaineDOT has a number of risk management strategies to help offset the impact of rising material costs.
- **Cost and Availability of Labor**: Labor costs can make up a sizable portion of project cost estimates. The cost of labor is closely tied to inflation; if inflation exceeds anticipated levels, wages may also rise, increasing overall project costs. Availability of labor also can impact costs and project schedules.
- **Borrowing**: There are a number of opportunities to access funding through bonding, loans, and other financial instruments that position MaineDOT to make up-front investments. There are long-term costs associated with these decisions as well as federal and state requirements that MaineDOT considers when exploring these options.

Other Investment Programs

MaineDOT's *Work Plan* is also based upon the anticipated receipt of about $211 million from municipalities, which represents about five percent of the total value of *Work Plan* items. This funding is derived through agreements with municipalities and includes local funding for transit operations, local bicycle and pedestrian project funding, airports, and MaineDOT's popular Municipal Partnership Initiative. The MPI program is a voluntary program in which municipalities take the lead on projects. MaineDOT acts as a funder and partner, providing high-level engineering guidance.

Another funding source is through partnerships with non-governmental agencies. This category includes funding from private sources through projects like the Waterville to Yarmouth rail upgrades, Acadia Gateway Center, and the Saddleback Mountain Road. This category totals $75 million during the three-year period of the *Work Plan*, representing about two percent of the total value of *Work Plan* items. This value includes funding from private sources pledged as part of MaineDOT's Business Partnership Initiative[xix] (BPI). In a typical BPI project, the state contribution is capped at $1 million, with the state share being one third of the total project cost. The remaining two thirds are typically split between a private entity and a municipality.

Where? (Supporting Maine's Communities)

Transportation needs and the solutions to address them vary from place to place. MaineDOT and our partners continue to become more flexible in how the design of highways, local streets, transit services, sidewalks, paths, and other transportation amenities support the communities they serve.

MaineDOT has a long history of partnering with local communities to develop programs and deliver projects that bring out a shared vision and accentuate shared priorities. MaineDOT increasingly balances investments to address specific infrastructure needs with allocating resources toward revitalizing the places that make Maine special: our iconic village centers and downtown areas. MaineDOT's approach ensures that the needs of all modes of travel are considered in the planning, programming, design, rehabilitation, maintenance, and construction of the state's transportation system.

Current Practices

Complete Streets policies have a foundation in federal law, guidance, and best practices and have been signed into law or policy in states and communities throughout the nation. The intent of MaineDOT's *Complete Streets Policy* is to help ensure that all users of Maine's transportation system – our customers – including bicyclists, pedestrians, people of all ages and abilities, transit users, and motor vehicle users, have safe and efficient access to the transportation system. The MaineDOT *Complete Streets Policy*, developed in 2013 and 2014, formally approved in June 2014, and revised in July 2019, outlines how MaineDOT and our project partners consider the needs of all users when planning and developing projects. This policy will be further revised after the completion of the Active Transportation Plan.

The Village Partnership Initiative expands the Complete Streets concept to not only focus on safely getting from one place to another but also, once you get to your destination, supporting a place where you want to recreate, shop, socialize, learn, work, or invest. The Village Partnership Initiative is designed to be available to all willing communities that have or can agree upon a local vision. Village projects can vary from small, spot improvements to large, once-in-a-lifetime investments to reinvest in and revitalize one of the distinguishing features of New England: our iconic village centers. These village areas need to be built on a human scale: walkable, bicycle-friendly, and business-friendly. In sum, these impacts are bigger than just transportation; they are place-making. Many locations show the realized potential of this focus on place:

Naples, Bridgton, and now Fryeburg on the Route 302 corridor in western Maine; Woodford's Corner in Portland; the downtown in Ogunquit; and the downtowns and villages of Hallowell and Belgrade.

In June 2022, MaineDOT released the MaineDOT Statement on Equity, which reiterates MaineDOT's commitment to ensuring that all Maine people have access to safe and reliable transportation options that support economic opportunity and quality of life regardless of a person's economic, social, ethnic, racial, age, sexual orientation, physical, mental, or geographic circumstance. A key component of equity is acknowledgement that transportation needs and solutions differ depending on geography, demographics, and individual circumstances. MaineDOT is committed to equitable delivery of our programs and services to meet the mobility equity needs of all Maine people in both rural and urban areas.

Critical Needs

The MaineDOT of the future will consider all modes in every project. Complete Streets is about safety, livability, and equity and should be considered in every step of the complete project development, delivery, and management lifecycle. Complete Streets can also be a broader tool to address societal issues like climate change, housing, and equity. Solutions can create value within these issues through incorporating stormwater management best practices, sustainable infrastructure and recycled materials, intentional connections to lower income housing, and enhanced access to centers for opportunity for disadvantaged communities, like workforce training centers and health care.

The *Complete Streets Policy*, Village Partnership Initiative, Statement on Equity, MaineDOT's Local Cost-Sharing Policy[xx], and new opportunities through both formula programs and discretionary grants through the BIL are collectively continuing to shift the funding realities for implementation. As a result, the *LRTP*, Active Transportation Plan, and Transit Plan each look at opportunities to evolve the local cost-sharing policy to balance resource-sharing opportunities and better leverage new federal funding resources.

Meeting the needs of Maine's current and future generations of travelers is paramount. Our streets and other public ROWs are carrying ever more complex arrays of passengers and goods, and they need to be safe, comfortable, and efficient. MaineDOT design and construction policies, practices, and procedures are based on *A Policy on Geometric Design of Highways and Streets* by the American Association of State Highway and Transportation Officials (AASHTO), also known as the *AASHTO Green Book*. While these approaches are comprehensive, meet all federal laws – including Americans with Disability Act (ADA) standards – and over time have enabled more flexibility, they are not a fully multimodal and context-sensitive approach. Many states have developed their own guides, giving planners, engineers, and stakeholders access to best practices, as well as design flexibility to help our streets and our communities work for all modes and users.

MaineDOT's Complete Streets practices and the Village Partnership Initiative are examples of making investments in places and meeting people where they are. These priorities are fostering a culture shift at MaineDOT away from single mode projects and towards solutions to more inclusive investment outcomes.

Who? (Working with Our Partners and Serving our Customers)

MaineDOT employs approximately 1,600 people and expends or disburses an amount approaching $1 billion per year, including federal, state, and local funds. Meeting our agency goals – manage the existing system, support economic opportunity and quality of life, and build trust – requires continuous coordination and communication with our partners and our customers.

MaineDOT assets provide access to every community in Maine. Successful relationships with federal, Tribal, state, regional, and local agencies and non-profit and advocacy groups are critical to delivering and managing a system meeting our customers' needs. This cooperation helps ensure that we all are making decisions that aid Maine communities in meeting their own needs while aspiring to statewide goals.

Current Practices

Public Involvement in Transportation Decision-Making[xxi] is intended to strengthen and document how MaineDOT engages people and communities throughout the state. It outlines the public involvement process MaineDOT uses to engage stakeholders in planning, project design and development, and construction or maintenance activities. MaineDOT is committed to reaching out to communities and people who have historically lacked access to the decision-making process or been underserved.

Maine residents, municipalities, counties, MPOs, RPOs, public transportation authorities, businesses, and nonprofits, along with state and federal agencies and Tribes and Nations, participate with MaineDOT in shaping transportation decisions. The involvement of these stakeholders takes different forms: planning and consulting work, public meetings, or agency review. Our goal is to create meaningful opportunities for participation with transparency and accountability. MaineDOT has agreements with each of the four Maine MPOs to coordinate planning and capital investment within each of the metropolitan areas, consistent with federal and state requirements.

Cooperative Planning Process for Non-Metropolitan Local Officials[xxii] details MaineDOT processes for cooperating with affected local elected and appointed officials with responsibilities for transportation, consistent with federal regulations. This includes counties, cities, towns, townships, and villages outside of Maine's four Metropolitan Planning Areas. These process documents ensure that planning processes meet or exceed federal requirements and enable regular opportunities for these groups to inform decisions.

MaineDOT also fosters local partnerships through unique funding programs. Two examples are the Municipal Partnership Initiative; which is a creative method to develop, fund, and build projects of municipal interest on the state infrastructure system with MaineDOT as a partner; and the Business Partnership Initiative, which is designed to respond to municipal or business entity requests, such as changing local transportation needs on state and state-aid highways, developing economic opportunities, and relieving safety concerns.

Critical Needs

While it is critical that we work with our partners to ensure we maximize opportunities for meaningful input and the potential to leverage resources, it is also critical that our transportation investments serve all Maine people. MaineDOT, as well as our federal, regional, and local partners continue to elevate and expand the consideration of equity in every decision.

MaineDOT believes the essence of equity in transportation is to ensure that all people in Maine have access to safe and reliable transportation options that support economic opportunity and quality of life regardless of a person's economic, social, ethnic, racial, age, sexual orientation, physical, mental, or geographic circumstance. MaineDOT is committed to equitable delivery of our programs and services.

Underserved Users of Maine's Transportation System

- Low-income individuals or households
- People of color, including citizens of Maine's Tribes and Nations
- Rural and otherwise geographically isolated communities
- Individuals and households without access to a vehicle and/or for whom a driver's license is unattainable
- Individuals in substance use recovery
- Individuals with physical or mental disabilities
- Individuals for whom English is a second language

This commitment is consistent with Executive Order 13985: Advancing Racial Equity and Support for Underserved Communities Through the Federal Government[xxiii]. MaineDOT's commitment to equity across all activities is described in our current Statement on Equity.

The approach to incorporating equity in all decisions is not only about the communities these Maine people call home, but also about their unique needs. MaineDOT's approach as a customer-driven organization means that we both lead and follow, through what our customers tell us. Our Family of Plans and our supporting strategic plans highlight the "who" question in the following ways:

- Note the value of existing unique programs and services in supporting these communities and addressing unique customer needs, such as the Workforce Transportation Pilot[xxiv].
- Highlight data, tools, and methodologies to better understand the location and needs of these communities so that transportation decisions can be data-driven, and outcomes can be communicated.
- Pilot new initiatives, partnerships, and programs, such as Heads Up!, which facilitates public meetings and education on pedestrian safety across Maine.

Our Customers' Needs

Understanding the diverse needs of MaineDOT customers is foundational to informing how we and our partners will work to achieve the *LRTP's* vision and goals. Our customers are the people who live, work, visit, and invest in the state. While MaineDOT's mission is to provide our customers with the safest and most reliable transportation system, customers' needs are dynamic and change depending on the type of trip they are making. This section describes customers' needs across four general types of trips:

- **Commute to work**: How, where, and when the employed population in Maine commutes.
- **Access goods and services**: How people access medical and healthcare services, retail, entertainment, healthy food, internet, education, and more.
- **Tourism and recreation**: Where, how, and when people enjoy Maine's many destinations.
- **Goods movement**: The multimodal movement of goods that are produced by Maine industries, as well as consumed by Maine's residents and visitors.

For each trip type below, two personas illustrate how common issues may affect Maine's residents, visitors, and businesses. However, customer needs are not independent trip types. There are many examples of overlaps where trips fulfill multiple purposes. The needs identified for each trip type below are intended to be illustrative – but may not be comprehensive – of the diverse range of needs of Maine's residents, visitors, and industries. These needs inform general strategies within the *LRTP* and the broader Family of Plans.

Commuting to Work

Patricia lives in Bangor and just received a new job offer with a salary increase.
Patricia cannot drive due to a disability. For her last job, she could take the bus and be dropped off in front of her workplace. For this new job, the nearest bus stop is a mile away, with portions of the sidewalk in poor condition. Taking a taxi or rideshare would be too expensive, and she does not have a large support network that could pick her up or drop her off at work. She would also like to be able to stop at the grocery store on the way home, but her new bus route does not stop near a grocery store. Additionally, she has difficulties during inclement weather because the sidewalks are not always cleared, and there is often ice.

Sue lives in Scarborough and commutes into Augusta.
She hits traffic every day, particularly in the afternoon, adding to her commute time compared to off-peak hours. This makes it difficult for her to pick up her son at daycare on time after work, forcing her to pay extra or hire a babysitter. Traffic has gotten worse over time, particularly in peak tourist season in summer.

Multimodal Trips and the First/Last Mile

The "first/last mile" of a trip is how people make the connection between their home or workplace and the primary transportation mode they use to commute. For example, a person may walk from their house to the bus stop, ride a bike to the ferry, or drive to the bus park-and-ride lot. Maine's urban commuters have more opportunities to take multimodal trips, making the first/last mile connection by walking, biking, rolling, or driving. Commuters in rural regions are more likely to travel by a single mode (typically a personal vehicle) from home to work. For both rural and urban multimodal commuters, the comfort and safety of the first/last mile connection is a key determinant of a commute's comfort and efficiency.

Trip Chaining

Sometimes, work commutes are combined with other needs such as childcare drop-off/pick-up, medical appointments, or buying groceries. "Trip chaining" is when a person makes multiple stops along the route between work and home. People want flexibility in their transportation options to complete errands when and how it is most convenient for them. Driving a personal vehicle provides the most flexibility to chain trips. For transit and micromobility users (rideshare, bikes, scooters, skateboarding, and other shared options), trip chaining may be constrained by service frequency and available connections between destinations.

Integrating transportation modes, such as the ability to bring a bike on a bus, makes trip chaining and first/last mile more convenient for customers.

Convenient and Reliable Travel Options

Commuters want reliable transportation services that allow them to travel between home and work, and any errands in between, in a safe, timely, and convenient manner. Drivers want roads that are in good condition, opportunities to refuel or charge vehicles, and available parking at destinations. Transit users want dependable service that gets them when and where they need to go. Shift workers, essential workers, and those who work non-traditional hours may need off-peak transit services available during their commutes. Pedestrians, bicyclists, and other micromobility users want dedicated infrastructure that is safe and comfortable to use.

Severe Weather

Thunderstorms, snowstorms, and nor'easters impact Maine's transportation system functions. Both forecasted and unexpected weather events affect commuters' abilities to travel safely. Plowed roads, sidewalks cleared of ice and snow, and on-time transit are important for all travelers, especially to essential workers who must still travel during declared states of emergency.

Avoiding Traffic Congestion

Peak-hour congestion affects some commuters. Anticipated congestion and delay influence how and when people choose to commute to work. Flexible work schedules and hybrid work options (i.e., part-time remote, part-time in office) can help employees avoid these frustrating experiences. With a flexible work schedule, workers can start and end the workday at various times to best meet their needs. Ridesharing and public transportation may provide opportunities for travelers to be more comfortable and productive during peak travel times.

Remote Work

Telework allows an employee to work from an alternative worksite, such as home. Employees may telework full-time or part-time. Some workers pair telework with flexible work schedules for maximum flexibility in how, where, and when they work. Reliable broadband internet access is a primary need for those with the ability to telework. Notably, not all professions are suitable for telework, such as the retail, healthcare, and manual labor sectors. The labor market in Maine is forecast to expand most within occupations where remote work is unlikely, meaning that work commute needs will continue to be important in the future.

Commuting Cost

Regardless of how, when, and where people work, there are costs to commuting and teleworking. Drivers pay for gas and tolls, as well as secondary costs due to delays, congestion, and vehicle wear and tear. Transit riders pay fares and are affected by service disruptions and delays. Micromobility and active transportation users are constrained by transportation network connectivity and infrastructure conditions. Teleworkers pay for broadband internet access and working spaces. There is a need to ensure accessible, affordable, and convenient connectivity options for all workers in Maine.

Accessing Goods and Services

Lisa and Bob live in a rural area of Piscataquis County and can only afford one car.
Bob takes the car to work every weekday, which leaves Lisa with their two kids at home without a car. There is no available transit close enough to their house, so Lisa does not have the option to take the kids out to the park, get them to doctor appointments, or get groceries during the weekdays. Lisa has gotten used to this but particularly has issues when the kids get sick and worries that if there was an emergency, it would take a long time for an ambulance to get to their house. The road that leads to their house also includes a bridge over a stream which tends to flood, which cuts off their access to the community, goods, and services.

Randy, 77, lives alone in Robbinston.
His eyesight has been declining, and he already only drives on roads he knows and never at night. He has to drive 25 miles to do his weekly grocery shopping and pick up his prescriptions. However, he has noticed that his eyesight is getting worse and has had a few near crashes. The only transportation service available in his area is for medical appointments. He is nervous about driving but does not know how he will get his groceries, see his friends, or have a life outside of his home once he is no longer able to drive.

Healthcare

Lack of transportation can be a major barrier to accessing healthcare; especially in rural northern and western Maine, transportation may constrain a patient's ability to schedule or attend appointments. This limitation can have a significant impact on a patient's health. Currently, the Maine Department of Health and Human Services and other local programs provide paratransit and on-demand transportation services and travel reimbursements for health visits; however, these often need to be booked several days ahead of time and can be challenging to schedule, particularly in rural areas or for long-distance trips to medical facilities.

Deliveries

Online retail and grocery delivery can help mitigate local gaps in goods and services. However, slow delivery or no delivery affect some rural areas of Maine, particularly during periods of extreme weather. This can include delivery and distribution of medical supplies, such as vaccines. Freight delivery must also keep pace with strong demand in urban areas, where the high volume of goods to deliver in dense, populated areas has created new challenges and opportunities around curb management policies.

Aging Population

The fact that Maine's population is aging means that more people will have limited mobility and be unable to safely operate vehicles. The public's top-listed need in the *Maine State Plan on Aging 2020-2024* was transportation. Through surveys, focus groups, listening sessions, and other engagement activities, transportation emerged as an essential tool for accessing basic life needs such as grocery stores, food pantries, social activities, and medical appointments. Half of the respondents that reported a need for transportation services said those services did not exist where they live, and one third reported they did not know where to access this information. This information gap leads older Maine residents to forgo access to essential goods and services or to continue to drive

themselves, which can lead to roadway safety risks. On-demand services that seek to fill these gaps are expanding beyond medical needs to include shopping and socialization in order for older people to maintain a high quality of life.

Open Roads and Bridges

Rural areas typically have fewer route options compared to urban areas. Some communities have very few access points – sometimes only one. This access can be severed by a number of events, including severe weather and traffic incidents. While urban areas have a higher statewide crash rate, the majority of crash injuries and fatalities occur on rural roads in Maine. The most crashes occurred on rural local roads and major collectors. The combination of two-lane rural roads, mountainous terrain, and sometimes difficult weather conditions can make rural travel challenging for less experienced or older drivers.

Rural areas are often more impacted by road closures than urban areas. Repair and reopening of routes as quickly as possible are critical.

Healthy Food

Neighborhoods in Maine classified as food deserts do not have access to nutritious healthy food within one mile in urban areas and 10- and 20-mile demarcations for rural areas. For example, in a rural census tract in the northwest of Aroostook County, which contains the towns of Allagash and Winterville, eight percent of households lack vehicles and are located more than 20 miles from a supermarket. This lack of access leads to food insecurity and a reliance on overpriced and less nutritious food options at local convenience stores or gas stations. This diet is a high-risk factor for chronic diseases and leads to health inequities that track to income level and geography. Maine's *2018-2020 State Health Improvement Plan* lists improved transportation as an objective to increase access to healthier foods.

Broadband

About 83,000 addresses in Maine, or 11 percent of all Maine addresses, currently lack broadband access. This severely limits people's ability to perform remote work; access online learning; access goods and services; receive timely, reliable news or weather alerts; and enjoy virtual entertainment. The *Broadband Access Plan* establishes a goal of bringing high-speed internet to 95 percent of Maine by 2025.

Tourism and Recreation

Jessica is a resident of Bar Harbor who works at the local hospital.
Jessica loves where she lives because of its proximity to many attractions, including lighthouses, beaches, and Acadia National Park. However, so many visitors flock to the island during the summer that Jessica has trouble accessing her local recreation destinations. Jessica was turned away the last several times she went to Acadia because the parking lots were filled to capacity by mid-morning. Driving away, Jessica saw several cars parked illegally on the roadside and people walking along the unpaved shoulders. Jessica is also frustrated by the increased traffic congestion, which has doubled her commute time to work during peak tourism season.

Carlos, Rita, and their two children are visiting Houlton in Maine from out of state.
Carlos and Rita drive an EV and want assurance that they can make long distance trips and recharge at-will. They are used to easily finding fast charging stations along highways and near restaurants and stores. However, they are worried about locating fast charging stations, which can produce a full charge in as little as 30 minutes, in northern Maine. Although there are several slower charging stations located nearby, their EV will take several hours to charge at these stations.

Reaching Destinations

On average, more than four out of five visitors drive to their tourism destinations in Maine. Almost 30 percent of visitors are Maine residents traveling within the state. People may choose to drive cars based on convenience, availability, or limited alternatives (such as buses or ridesharing), particularly for intercity travel or in more rural regions. Visitors have more options to get around in downtown villages and urban areas in southern Maine. Many drivers park near and explore attractions by foot, bike, or bus. Others arrive and travel around Maine by train, transit, rideshare, car rentals, bicycles, and walking. As EV adoption increases over the next few decades, visitors driving to and within Maine will want confidence in their ability to recharge at will on long-distance trips. Visitors will seek convenient and reliably available EV charging stations while traveling along major highways. People will also recharge at their destinations, including accommodations and retail or recreation locations.

Tourism Employment

In addition to spending their time and dollars on Maine's attractions, visitors also invest in shopping, entertainment, restaurants, accommodations, groceries, and transportation. The tourism industry supports the employment of more than 90,000 people in Maine. The people working these jobs experience the same challenges with multimodal options, congestion, and safety while traveling to work.

Casco Bay Lines provides an essential transportation service for residents while also facilitating tourism traffic to the islands in Casco Bay.

Travel Options

Some of Maine's recreation opportunities are transportation themselves, such as Maine's multiuse rail trails or the ferries between islands in Casco Bay. Walking and biking also support local communities by drawing visitors to nearby businesses, restaurants, and attractions. Visitors and residents seek multimodal transportation options that are easy to find, accessible for all users, and well-maintained for a positive user experience.

Seasonal Demand

Many of Maine's tourism industries are seasonal, with the highest visitation in the summertime. Maine's well-known destinations are in high demand already, and our new destinations welcome more visitors each year. While major hubs like Acadia National Park may have traffic and parking management strategies, emerging and smaller destinations may not have the resources to manage growing demand. High visitor volumes can detract from the experience due to challenges such as insufficient parking, lack of adequate traffic control, lack of access to amenities, congestion on nearby roads, and unsafe conditions for pedestrians and bicyclists.

Visitor spending in Maine generated more than $14 billion in revenue in 2021.

Traffic Congestion

The high seasonal demand also affects the quality of life of Maine residents. Congestion due to tourism can impede Maine residents' ability to commute to work, run errands, and enjoy local attractions. Overcrowding can also harm the natural environment due to poor behaviors such as trespassing, littering, and illegal parking. It is important for Maine to provide sustainable and safe access to tourism and recreation destinations while also promoting environmental stewardship.

Freight Movement

Derek runs a mid-sized lumber company located in Northern Maine.
The company transports logs from Maine forests by truck to several sawmills, where it is converted into lumber and forest byproducts. These products are transported across the U.S. and Canada by truck or by rail, depending on the distance.

For Derek's company, rail is the most economically viable mode for shipping long distances to customers. As such, Derek knows that keeping rail viable is critical to the success of the company. In talking with other business owners in the county, he has become worried about recent Class I acquisitions in Maine. He and other business owners worry that Maine will become a "passthrough" and that local customers like his mill will be bypassed.

Derek thinks that the business is well-positioned to grow due to global demand for lumber. At the same time, he also worries about the fact that the company has increasingly faced challenges finding and maintaining a workforce during the past decade.

Taylor runs a small business in Brunswick that sources locally crafted wood products and food products from local farms.
The business has slowly migrated from majority in-store to majority online sales throughout the last decade, and Taylor has felt pressure to fulfill customers' expectations for rapid delivery of online purchases.

Taylor's business is dependent on the movement of food and forest products by vendors and on raw materials from farmers around the state. The cost of shipping affects the price Taylor pays for the goods sold in the store. As a business owner looking towards expanding in the future, Taylor is keenly aware that cheaper and more efficient shipping would help the business better compete with larger-scale companies selling similar products.

Multimodal Freight Access

Trucking is by far the largest component of freight movement in Maine; 87 percent of total freight tonnage originating in and destined for Maine in 2020 was carried by truck. Key freight industries in Maine include forest, agricultural, pulp and paper, petroleum, and chemical products. The mode utilized to ship goods within these industries depends on the value and weight of those goods; products that are bulky and low-value are mostly transported at lower unit costs by water and rail modes, while other highly perishable and high-value items may rely on refrigerated trucks and railcars. Maine's freight infrastructure faces dynamic customer needs due to changing statewide, national, and global freight trends and developments.

Logs are typically transported from forests to secondary locations on specialized trucks.

Economic Changes

Two of the largest drivers of freight demand are population and employment types; residents desire goods and services and provide a workforce for Maine's industries, while service industries generate less freight traffic than goods-dependent industries. Simultaneously, industry shifts in the energy and forest products sectors have had impacts to the types and volumes of commodities being shipped in Maine. As Maine's population continues to grow slowly and age, and as employment continues to shift into service-dependent industries, overall freight volume may decrease for modes carrying goods required and produced by these industries.

Freight Technologies

Technology is changing how we move goods, particularly when it comes to trucking. As AVs proliferate, more trucks will be automated and travel on highways in platoons, making the mode cheaper and more efficient. Unmanned aerial vehicles (UAVs), or drones, create significant potential for delivering high-priority and time sensitive goods in both urban and rural areas, but require enabling laws and landing sites to enable more widespread use. States are also increasingly looking to install, expand, and upgrade fast electric charging infrastructure for trucks traveling on state highways and interstates; these changes will enhance distance confidence in range and refueling ability.

Agile and Adaptable Services

Online retailer growth has driven a major increase in delivery of goods directly to homes. As same-day and next-day delivery have proliferated in e-commerce, many retailers have begun to reposition regional distribution centers and smaller distribution centers closer to the centers of demand in urban areas. Delivery in such a short timeframe is expensive, and strategically placed fulfillment centers allow firms to deliver the level of shipping service that consumers demand while maintaining affordable costs. Freight system infrastructure capacity and reliability will be important to support expanding e-commerce in Maine, including more frequent freight trips in urban regions that utilize smaller vehicles and alternative delivery methods.

In addition to bolstering home delivery, the COVID-19 pandemic highlighted the need for flexibility and adaptability in our freight system. In order for key industries in Maine to be resilient to change, the freight industry needs to adapt to changing conditions. For example, in 2022, farmers from Maine shipped potatoes by rail for the first time in four decades thanks to a strong harvest in the state and heat and dry weather that stymied farmers in renowned potato-growing states like Idaho and Washington. Twenty-one million pounds of potatoes, virtually all from growers in northern Maine, flowed through a rail-connected warehouse.

Intermodal Opportunities

A major opportunity for Maine lies in intermodal facilities, which provide connections between two or more modes. These facilities are often located near ports or airports. Maine businesses stay competitive and cost-effective by making these transitions as seamless as possible. Maine has one active intermodal rail connector located at the CSX terminal in Waterville. This facility runs a dedicated water train that serves all three Poland Springs plants. There are two inactive intermodal terminals in Maine – in Auburn and Presque Isle – and the International Marine Terminal in Portland conducts intermodal activities between ships and trucks.

3.2 Our Transportation Vision

Understanding the diverse needs of Maine's transportation system and the needs of our customers is foundational to the development of the *LRTP's* vision and goals. Through our needs assessment, which included public engagement, MaineDOT refined a vision and for the transportation system. Maine is recognized as a great place to live, work, and play. Our state includes small urban centers with growing economic opportunity surrounded by rural communities founded in their natural beauty and cultural charm. While Maine has an aging population and the wisdom and experience that comes with it, Maine has been attracting new residents and businesses who recognize the economic opportunity and quality of life that our state provides. Through increased telework opportunities, driven in part due to the coronavirus pandemic, more people have flexibility to work and live where they choose.

Maine's vast and multimodal transportation system includes our highways and bridges, airports, ports, transit, rail, and bicycle and pedestrian facilities. MaineDOT envisions a transportation system that is safe; meets the diverse mobility needs of Maine people, businesses, and visitors; enables communities to thrive; supports a growing economy; is accessible to all; supports the growing movement of freight; and is environmentally responsible.

Maine supports economic opportunities and quality of life through our investments in the transportation system. Policymaker support through GF transfers and federal support through recent passage of the BIL allow us to start bridging the gap between our transportation needs and funding availability to maintain and enhance the safety, quality, and efficiency of the system. This includes our commitment to sustainability principles, including mitigating transportation's impact on Maine's environment and reducing our contribution to climate change.

MaineDOT will provide a transportation system that supports the economic opportunity and the quality of life that makes Maine a world-class and welcoming place for all.

MaineDOT will provide a transportation system that reinvigorates quintessential New England charm and provides for natural resource, manufacturing, technology, and tourism-based economies.

MaineDOT will maintain and improve our transportation system, within available resources, to enhance the lives of Maine people, support our businesses to prosper locally and globally, and demonstrate leadership in sustainability.

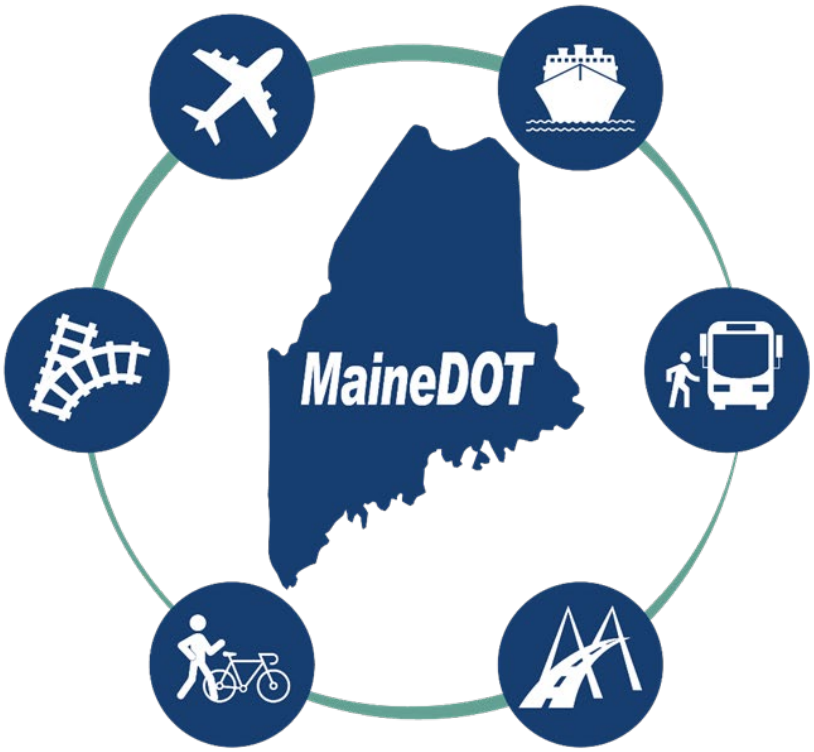
Figure 3.5 highlights the integrated and multimodal transportation system that MaineDOT and our partners manage and operate. The transportation vision focuses uniquely on each of these systems.

Figure 3.5 MaineDOT's Integrated Transportation Approach

Envision airports that enhance the quality of life, provide critical services, and support local, regional, statewide and national economies.

Envision ports and supply chain routes that will attract investment and good jobs and support regional, national and international economies.

Envision a rail system that enables Maine businesses to reach current and future markets with timely and reliable services and a passenger rail system that provides safe and reliable intercity and passenger services.



Envision a transit system with innovations that improve service and reduce environmental impacts, expand mobility options, and improve quality of life for customers and communities.

Envision an active transportation system that is accessible to all Maine people and visitors and supports and improves people's ability to access jobs, education, businesses, healthcare, and other destinations.

Envision a highway and bridge network that match customer needs and expectations.

3.3 Our Transportation Goals

Our vision represents MaineDOT's desired future for multimodal transportation. Our goals describe what guides us toward attaining the vision and highlight our overall desired outcomes. Figure 3.6 presents the goals and associated descriptions.

Figure 3.6 MaineDOT's Transportation Goals

Safe travel for all	A well-managed system	A vibrant economy and world-class quality of life	Environmentally sustainable transportation system	Equitable access
Provide a safe transportation system for all users and modes of transportation.	Effectively manage Maine's existing transportation system within reliable funding levels to provide levels of service that are acceptable to our customers.	Invest in transportation initiatives that support economic opportunity for Maine people, communities, and businesses.	Invest in practical transportation solutions that mitigate impacts on the natural world and prepare for the realities of climate change.	Ensure that all Maine people have access to safe and reliable transportation regardless of who you are or where you are.

Our **goals** are supported by **objectives,** presented in Section 3.4 of the *LRTP*, which are measurable outcomes describing how MaineDOT will attain the *LRTP* vision and goals. Objectives also shape the long-range strategies and near-term actions presented in Section 4 of the *LRTP*. How we meet our objectives is quantified through performance measures, which help assess the degree to which investments address transportation needs and meet MaineDOT performance targets.

The goals and objectives connect to required federal performance measures and existing MaineDOT performance measures, like customer service levels. Other measures specific to unique modes, systems, or assets are highlighted in the modal and strategic plans. More information on performance measures, trends, and targets are presented in the System Performance Report, available as **Appendix B** to the *LRTP*.

The goals and objectives also connect across the Family of Plans. Each of these plans plays a vital role in the direction and content of this *LRTP*, from understanding priorities to highlighting partners. These plans also inform the strategies and implementation actions that are presented in Section 4. Incorporating these plans and their findings into the *LRTP* implementation process is vital to meeting MaineDOT's vision of increasing the quality of life for all Maine people.

Safe Travel for All: Provide a safe transportation system for all users and modes of transportation.

Safety is a constant priority for MaineDOT's transportation system. Several plans are dedicated to the safety of all modes within the system including the *SHSP*, *FHWA Performance Report: Highway Safety*, and *Public Transportation Agency Safety Plans*. However, almost every plan mentions safety in its vision, goals and objectives, and/or performance measures. This reflects the level of importance that safety holds.

A Well-Managed System: Effectively manage Maine's existing transportation system within reliable funding levels to provide levels of service that are acceptable to our customers.

> Using objective data, funding requirements, and the committee process… MaineDOT allocates resources and selects projects to maximize customer value from each available dollar. Asset management at MaineDOT is a continuous loop of planning, delivery, and measurement…
> *- MaineDOT's Three-Year Work Plan (2023)*

In order for MaineDOT to operate our multimodal transportation system, it is essential for the state to continuously take account of and identify opportunities to maintain our assets and essential functions. Plans that address system management are required every few years and include asset strategic plans, such as the *TAMP*. Other plans are dedicated to specific areas of a well-managed system, such as the *SHSP* in terms of safety, and the *Work Plan* for allocating funding in line with MaineDOT's vision and goals. The core Family of Plans shape performance-based planning and programming, strategy development, and future investment scenarios – including identifying opportunities to leverage special federal and other funding to enhance Maine's transportation system in meaningful and innovative ways. The outcomes of each of these plans, particularly due to their coordinated nature in this current cycle of *LRTP* development, must be consistent across each plan and the *LRTP*.

A Vibrant Economy and World-Class Quality of Life: Invest in transportation initiatives that support economic opportunity for Maine people, communities, and businesses.

A reliable, efficient transportation system is the foundation of a strong economy. All transportation-focused plans are inherently linked to economic development for Maine; however, economic-focused plans also inform those transportation plans. The *Maine Economic Development Strategy*[xxv] outlines recommendations that include "establishing an adequate and sustainable funding system for public transportation" and "promoting hubs of excellence," which mention walkable neighborhoods. The Governor's *Maine Jobs & Recovery Plan* highlights the need to "invest in transportation improvements," which pledged funding for the *Work Plan*, launching a workforce transportation pilot, expanding municipal and public EV charging, and protecting infrastructure from climate change. As described, the economic and transportation connection goes beyond freight movement and includes the placemaking Village Partnership Initiative[xxvi], ensuring that every village is a place that people want to stay instead of pass through, buoying local economies across Maine.

Environmentally Sustainable Transportation System: Invest in practical transportation solutions that mitigate impacts on the natural world and prepare for the realities of climate change.

Maine is committed to preventing and mitigating the impacts of climate change, as indicated in its plans solely dedicated to climate action, such as the *Four-Year Climate Action Plan: Maine Won't Wait* and accompanying publications. Transportation is acknowledged as a vital piece to tackling this challenge in the *Clean Transportation Roadmap*[xxvii] and in many other plans, such as the *Work Plan* and *MPO MTPs*.

Recommendations

A: Embrace the Future of Transportation in Maine
- Accelerate Maine's Transition to EVs
- Increase Fuel Efficiency and Alternative Fuels
- Reduce VMT

- *Climate Action Plan: Maine Won't Wait*

Equitable Access: Ensure that all Maine people have access to safe and reliable transportation regardless of who you are or where you are.

Ensuring that all Maine people have access to quality transportation that meets their needs is a core understanding of the department's commitment to equity. The MaineDOT Statement on Equity[xxviii] acknowledges that transportation needs vary by geography and demographics and offers a suite of programs and services to address equity in mobility. Several non-transportation plans are essential links to the goal of improved transportation accessibility. Accessibility can be thought of in many ways, including internet access to rural areas to better serve rural residents (outlined in the *Statewide Broadband Action Plan*[xxix]), efficient and safe transportation programs for older and disabled Maine people who do not drive their own vehicles (*State Plan on Aging*[xxx]), and providing health-promoting, inexpensive, and attractive active transportation options (*State Health Improvement Plan*[xxxi], *Economic Development Strategy*).

Goal 1, Title III B: Access to Services

Objective 1.1: Increase awareness of local services and programs available to older Mainers and their care partners with an emphasis on transportation[…]

- *Maine State Plan on Aging*

3.4 How Do We Meet Our Needs and Prepare for the Future?

Goals and Objectives

Our goals shape objectives, which are measurable outcomes describing how MaineDOT will attain the *LRTP* vision and goals. Objectives also shape the implementation strategies and actions presented in Section 4 of the *LRTP*. Table 3.3 lists the 15 objectives that MaineDOT has established to meet our five goals.

Table 3.3 Goals and Objectives

Goals	Objectives
	• Reduce fatalities and serious injuries for all transportation users. • Reduce the number of crashes involving vulnerable users, such as bicyclists, pedestrians, individuals with disabilities, and seniors.
	• Maintain a state of good repair for the multimodal transportation system. • Improve system performance for our customers, including Maine residents, visitors, and businesses. • Support and pilot innovative methods for multimodal system operations, management, and expansion. • Leverage funding allocations, grants, investments, and partnerships.
	• Support job growth and create economic opportunities in communities across Maine. • Broaden the transportation-related workforce. • Improve supply chain efficiency for the cost effective, clean, secure, and safe movement and storage of goods. • Expand Maine connections to the national and global economy through our seaports, airports, and rail corridors.
	• Reduce greenhouse gas emissions from the use, maintenance, operation, and construction of the transportation system. • Mitigate the transportation system's environmental footprint. • Reduce transportation disruptions due to climate change.
	• Improve access for all Maine people to employment, goods, health and social services, and recreational spaces. • Reduce disparities in accessibility to transportation services for vulnerable and disadvantaged populations.

3.5 How Do Trends and Uncertainties Impact How We Achieve Our Goals?

The *LRTP* goals provide a framework for turning needs, as summarized in this section, into opportunities:

- Opportunities to foster **safe travel for all modes** and drive towards zero deaths through engineering, enforcement, education, and emergency response, and the Safe System approach.
- Opportunities to **manage our system** through maximizing the life cycle and operations of our assets, while also using innovation and technology to be more efficient.
- Opportunities to create a **vibrant economy** where Maine is connected to the world, and our rural economies are given an opportunity to grow and prosper.
- Opportunities to be **environmentally sustainable** through lowering emissions and being resilient to climate impacts.
- Opportunities to ensure **equitable access** for all Maine people to a high quality of life.

Each trend presented in Section 2.3 creates challenges and opportunities related to the potential to reach our goals and the strategies MaineDOT implements to achieve these goals.

- **Opportunities** reflect trends that may make a goal easier to achieve.
- **Risks** reflect trends that might make it more difficult to achieve a goal, causing MaineDOT to adapt and change course on the strategies needed to achieve the goal.
- **Mixed opportunities and risks** reflect situations where the context, including place or corridor type, could impact if the trend makes a goal easier or more difficult to achieve.
- **Unknowns** reflect uncertainties in the relationships between the trend and the goal (i.e., it could be positive or negative, or there might not be a relationship at all).

Table 3.4 highlights the risks and opportunities, where impacts are mixed or unknown at this time, and a brief narrative on these relationships and impacts on strategies.

Table 3.4 Risks and Opportunities Created by Trends Compared to Goals

Trend	Safe Travel	A Well-Managed System	A Vibrant Economy	Environmentally Sustainable Transportation System	Equitable Access
Safety	Risk	Risk	Risk	Unknown	Risk
	Maine's aging population and growing demand for active transportation leads to more vulnerable transportation system users. This impacts the strategies MaineDOT deploys to achieve safety goals, while also changing how to efficiently manage operation of a system with more diverse users.				
Population	Risk	Mixed	Opportunity	Unknown	Risk
	An aging population and in-migration will bring demands for new transportation services, particularly on-demand mobility, senior transportation, and electric vehicle charging, among others. In-migration creates opportunities for economic growth and diversification, as long as new residents are well connected to economic opportunities and provided safe systems.				
Development	Mixed	Risk	Opportunity	Opportunity	Opportunity
	Continued growth in urban areas will put pressure on the operations and safety of the existing transportation system as growth in travel demand runs ahead of capacity. However, more development in mixed-use city, town, and village centers create opportunities for enhanced accessibility to destinations and jobs and can reduce energy consumption and emissions.				
Labor Market	Opportunity	Unknown	Risk	Risk	Opportunity
	An aging workforce, continued shift to a services-based economy, and more flexibility for remote work will lead to more demands for enhanced transportation and communications services and create potential skilled workforce gaps that limit economic growth. Changing commuting patterns create opportunities to improve access to jobs and reduce crashes.				
Technology	Mixed	Mixed	Opportunity	Opportunity	Mixed
	Transportation technologies create opportunities across multiple modes, including electric vehicles reducing emissions, autonomous and connected vehicles reducing traffic, and new freight technologies enabling more efficient goods movement. At the same time, these technologies could increase total vehicle miles traveled annually. The primary issue is equitable roll-out of these technologies.				
Trade	Risk	Risk	Opportunity	Mixed	Mixed
	Freight movement will continue to increase, stressing existing freight routes and creating more conflicts among different user types, leading to potential safety issues. Depending on location, growth in total goods movement could yield accessibility-related benefits, dependent on the freight mode. More total goods movement creates job opportunities and revenue for Maine.				
Climate	Risk	Risk	Risk	Risk	Risk
	The impacts of climate change will create potential risks across every transportation mode, particularly impacting accessibility, safety, and the economy and requiring enhanced approaches to manage system operations and recovery, while also providing an opportunity to attract people escaping extreme climates.				
Tourism	Risk	Mixed	Opportunity	Risk	Opportunity
	Tourism is a key driver of Maine's economy. As Maine's tourism economy is anticipated to continue to grow, more visitors to Maine will demand different services and more out-of-town visitors can create congestion and safety issues and sustainability impacts, particularly in sensitive locations.				

4. Implementation: Maine's Transportation Path Forward

To address changes and achieve our goals, we will pursue proven and new strategies

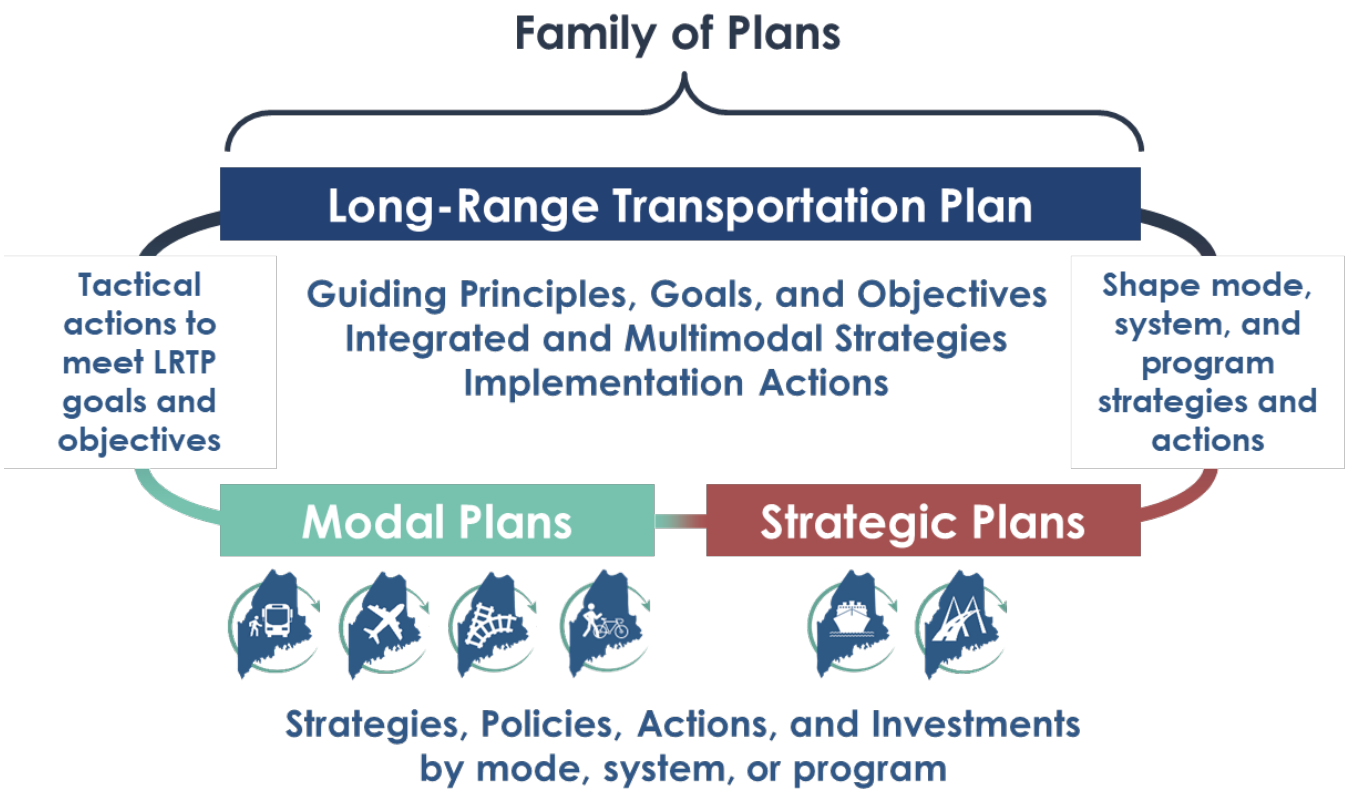
4.1 How Do We Reach Our Goal

To reach our goals, the *LRTP* recommends holistic and cross-cutting strategies that MaineDOT and our partners will implement in both the near- and long-term to achieve the vision for the transportation system. MaineDOT strives to implement the *LRTP* recommendations using a process that is fiscally realistic and anchored in policy. The *LRTP* creates the structure to facilitate implementation of the strategies and actions within the Family of Plans as well as other related strategic, system, and modal plans.

4.2 Organizing for Implementation

Implementing the Family of Plans requires an understanding of the organization and relationships between recommendations across plans and within each plan. As described in Figure 4.1, within the Family of Plans, the *LRTP* offers goals, objectives, guiding principles, and thematic strategies that shape the specific strategies and actions within MaineDOT modal and strategic plans and programs. In turn, the modal and strategic plans provide structure and tactical activities to meet the *LRTP* goals and objectives. Strategic and tactical priorities defined by the Family of Plans will emerge in MaineDOT's annual *Work Plan*.

Figure 4.1 Family of Plans – Implementation Connections



For these relationship connections to work, organizing for implementation requires definitions that shape what is a "strategy" versus what is an "action." These vary by plan type, as described in Figure 4.2. Consistent to every strategy and action are their direct connections to the *LRTP* objectives, as well as more specific objectives within the modal and strategic plans.

Figure 4.2 Figure Organization of Strategies and Actions

4.3 Strategies and Actions to Get Us There

The *LRTP* recommends 15 statewide strategies that set the priorities for MaineDOT's modal and strategic plans, policies and programs, and state and local partners. The 15 thematic strategies cut across the five goals and 15 objectives in response to the needs defined by Maine's customers and the needs assessment. Each strategy identifies examples and initiatives such as programs, policies, practices, and partnerships that will guide the implementation of the Family of Plans. Strategies are multimodal, intermodal, and interregional, connecting urban and rural communities across Maine.

Guiding Strategy Implementation in the Family of Plans

The *LRTP* takes a statewide and intermodal approach to guiding implementation of strategies, actions, and investments. The strategies are shaped by the guiding principles and respond to outcomes of the needs assessment supporting the Family of Plans.

Several additional factors shape how we implement strategies within the *LRTP*, and more broadly, the Family of Plans.

- **MaineDOT roles and responsibilities and how we work with our partners** – Some strategies are primarily owned by MaineDOT and will require state leadership and commitment to successfully implement. Other strategies require a combination of partners working together and offering resources to successfully implement. Another set of strategies are primarily led by MaineDOT partners, including the private sector, requiring MaineDOT to engage to ensure implementation meets customer needs and follows applicable state and federal regulations.

- **Transportation revenue, funding, and finance** – MaineDOT's current state and federal sources and emerging opportunities from discretionary grants and partnerships determine what we can accomplish. Increasingly, MaineDOT and our partners are looking for innovative and more sustainable future transportation funding sources to better meet changing needs.

- **Agency resources, timing, and trade-offs** – Transportation needs far outpace resources and the gap continues to widen as the cost of doing business (for example, labor, materials, and ROW) increases faster than funding. MaineDOT and our partners make daily decisions that consider many costs and benefits, and the associated trade-offs that are part of every investment decision.

Implementation of strategies will occur across four initiatives – process, program, policy, and partnership. Each initiative provides MaineDOT with a range of approaches for successful implementation of strategies.

Process initiatives are the practices, tools, and other resources within MaineDOT that institutionalize and operationalize the programmatic and policy strategies. Process includes existing and new tools, data, standards, guidebooks, and methods that can streamline decision-making and implementation, such as trade-off analysis and project prioritization.

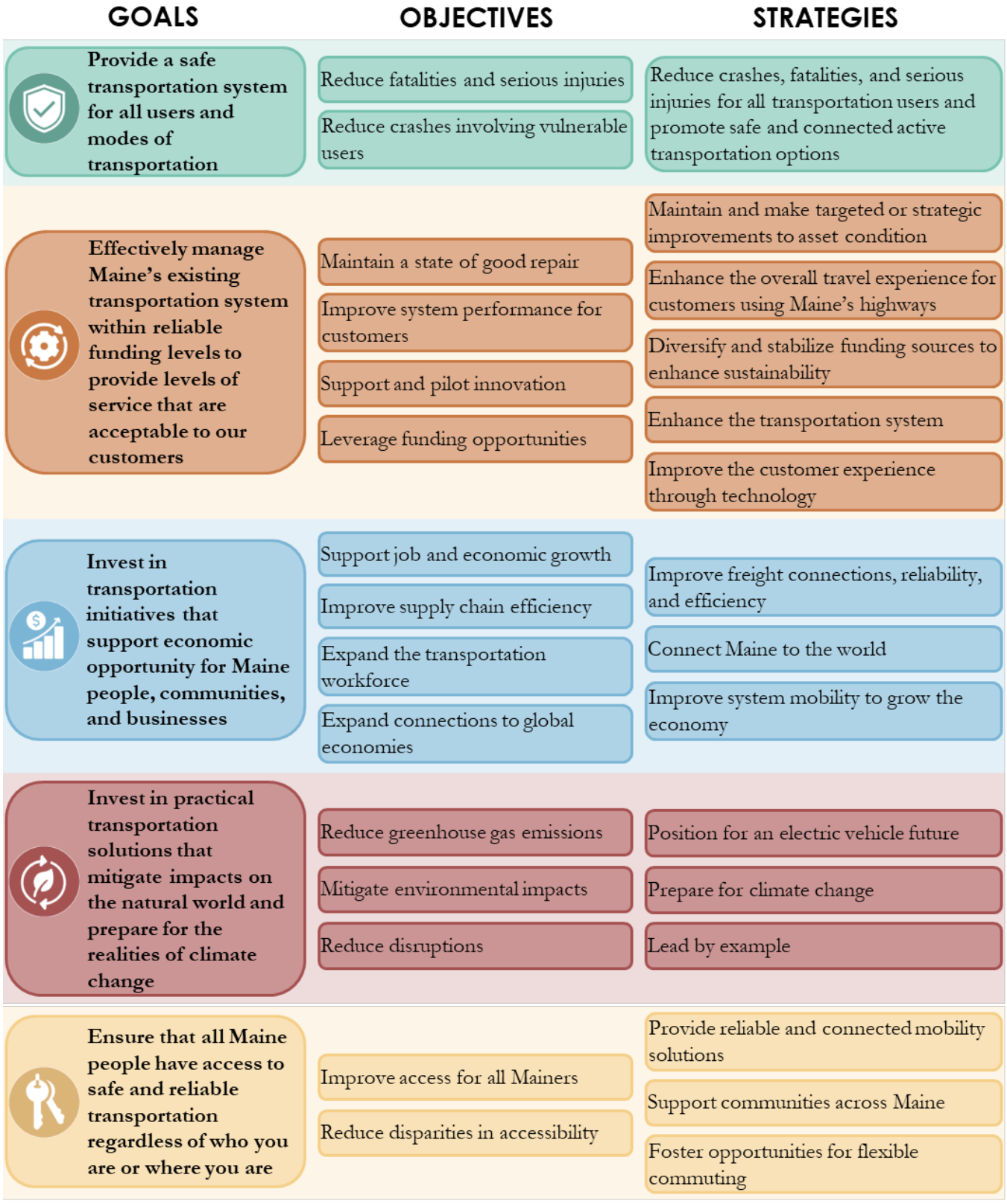
Program initiatives direct MaineDOT's future investment decisions, such as program and project prioritization for annual *Work Plans*. These initiatives include existing unique MaineDOT programs (for example, the Village Partnership Initiative), future program updates or extensions, and new potential programs.

Policy initiatives shape MaineDOT's priorities, roles, and responsibilities. Policies include existing MaineDOT guidance such as the *Complete Streets Policy*, *Local Cost-Sharing Policy*, and the *Maine Won't Wait* climate action plan, and also include updates and extensions of existing policy. MaineDOT may also develop new policies structured around evolving topics such as electric and autonomous vehicles or climate resilience.

Partnership initiatives allow MaineDOT to leverage existing relationships and forge new alliances to meet our goals. Partnerships can expand upon existing agreements and requirements between MaineDOT and our planning partners, including Maine's Tribes and Nations, MPOs, and RPOs. Partnerships also support programmatic strategies by positioning the state for new opportunities through pursuing discretionary grants and leveraging private investment.

Figure 4.3 presents the five *LRTP* goals with the supporting 15 objectives and 15 strategies.

Figure 4.3 LRTP Goals, Objectives, and Strategies Summary



Strategy Summary

Strategy Tagline	Goal	Family of Plans Connections							
		MODAL				STRATEGIC			
		Transit	Rail	Active	Aviation	Safety	Freight	Assets	Other
Reduce crashes, fatalities, and serious injuries for all transportation users and promote safe and connected active transportation options.		■	■	■		■			■
Position for an electric vehicle future.		■							■
Maintain and make targeted or strategic improvements to asset condition.		■		■			■	■	■
Enhance the overall travel experience on Maine highways.				■		■	■	■	■
Provide reliable and connected mobility options.		■	■	■	■				■
Support communities across Maine.		■	■	■		■			■
Foster opportunities for flexible commuting.		■	■	■					■
Prepare for climate change.		■	■				■	■	■
Lead by example.		■	■	■	■	■	■	■	■
Improve the customer experience through technology.		■						■	■
Diversify and stabilize funding sources to enhance sustainability.		■	■	■	■	■	■	■	■
Enhance the transportation system.		■		■		■	■	■	
Improve freight connections, reliability, and efficiency.			■		■	■	■	■	
Connect Maine to the world.		■	■		■		■		
Improve system mobility to grow the economy.		■	■				■		■

The following pages provide a summary of the *LRTP* implementation strategies in the form of strategy templates presenting the goals and objectives, an example of ongoing implementation, insight into process, program, policy, and partnership initiatives, and a summary of plan connections.

LONG-RANGE TRANSPORTATION PLAN
–Working to Move Maine–

REDUCE CRASHES, FATALITIES, AND SERIOUS INJURIES FOR ALL TRANSPORTATION USERS AND PROMOTE SAFE AND CONNECTED ACTIVE TRANSPORTATION OPTIONS.

Continue implementation of the Driving Towards Zero Deaths initiative through adopting a Safe System approach that implements countermeasures and behavioral and educational programs to minimize deaths and serious injuries and reduce crashes. Make pragmatic progress and enhance networks for active transportation to expand mobility and modal opportunities, support economic development, improve safety, increase equity, and enhance quality of life and public health for Maine residents and visitors alike.

GOALS

LEAD: Safe Travel for All

PRIMARY RELATED

OBJECTIVES

- Reduce fatalities and serious injuries.
- Reduce crashes involving vulnerable users.
- Improve system performance for our customers.
- Support and pilot innovation.
- Leverage funding opportunities.
- Support job and economic growth.
- Mitigate environmental impacts.
- Improve access for all Maine people.
- Reduce disparities in accessibility.

FAMILY OF PLANS CONNECTIONS

MODAL PLANS			
Transit	**Rail**	**Active**	Aviation

STRATEGIC PLANS			
Safety	Freight	Roads/Bridges	**Other***

*Public Transportation Agency Safety Plans, Rail Crossing Safety Plan

RECENT SUCCESSES

MaineDOT partners with the Bicycle Coalition of Maine to lead the Heads Up! Pedestrian Safety Initiative, a multi-year effort to increase pedestrian safety by raising awareness among motorists, pedestrians, municipal officials, and law enforcement.

MaineDOT has installed centerline and edge line rumble strips on roads to reduce lane departures and head-on collision crashes

IMPLEMENTATION INITIATIVES

PROCESS

Data Quality Management Plan, Maine Crash Data, 4Es of Safety (Education, Enforcement, Engineering, Emergency Services), Wildlife Safety

PROGRAM

Village Partnership Initiative, Highway Safety Improvement Program, Work Zone Safety Program, Safe Routes to School, Bicycle and electric bicycle share programs, Heads Up! Pedestrian Safety Program, MaineDOT Safety Patrol

POLICY

Complete Streets, Safe System Approach
Context Sensitive Solutions, MaineDOT Guidelines on Crosswalks

PARTNERSHIPS

Maine Bureau of Highway Safety, Maine Bureau of Motor Vehicles, Maine Turnpike Authority, Maine State Police, Maine Emergency Medical Services, local law enforcement, MPOs, RPOs Tribes and Nations, municipalities, advocacy groups, trail organizations

LONG-RANGE TRANSPORTATION PLAN
–Working to Move Maine–

POSITION FOR AN ELECTRIC VEHICLE FUTURE.

Support Maine's transition to electric vehicles through Direct Current Fast Charging (DCFC) access on designated Alternative Fuel Corridors (AFC), DCFC/Level 2 access at important statewide and unique community destinations, equitable access in key corridors and destinations in rural regions, support of e-bikes and other personal electric mobility devices, and public education about EVs.

GOALS

LEAD

Environmentally Sustainable Transportation System

PRIMARY RELATED

OBJECTIVES

Improve system performance for our customers.
Support and pilot innovation.
Leverage funding opportunities.

Reduce greenhouse gas emissions.
Mitigate environmental impacts.

Improve access for all Maine people.
Reduce disparities in accessibility.

FAMILY OF PLANS CONNECTIONS

MODAL PLANS			
Transit	Rail	Active	Aviation

STRATEGIC PLANS			
Safety	Freight	Roads/Bridges	**Other***

*Maine Won't Wait

RECENT SUCCESSES

MaineDOT is expanding publicly accessible electric vehicle charging infrastructure at our major facilities in Augusta and eventually at all of our regional offices.

MaineDOT is developing a Transit Bus Electrification Plan to assist eight transit providers with the transition to electric and/or hybrid fleet vehicles.

IMPLEMENTATION INITIATIVES

PROCESS

Maine Plan for Electric Vehicle Infrastructure Deployment strategies; funding for public EV charging stations; EV rebates, tax credits, and other incentives; public information campaigns and education, transit fleet electrification

PROGRAM

National Electric Vehicle Infrastructure Formula Program, Governor's Office Clean Transportation Initiative, Electric Vehicle Accelerator Rebate Program

POLICY

Clean Transportation Roadmap, Complete Streets, MaineDOT Offshore Wind Port Advisory Group

PARTNERSHIPS

State agencies, Efficiency Maine, transit providers, employers, developers and private partners

LONG-RANGE TRANSPORTATION PLAN
–Working to Move Maine–

MAINTAIN AND MAKE TARGETED OR STRATEGIC IMPROVEMENTS TO ASSET CONDITION.

Minimize lifecycle cost and extend lifecycles for all assets through enhancing management systems, piloting new technologies and materials, and streamlining decision-making and delivery processes.

GOALS

LEAD: A Well-Managed System

PRIMARY RELATED

OBJECTIVES

- Maintain a state of good repair.
- Support and pilot innovation.
- Reduce greenhouse gas emissions.
- Reduce disruptions.

RECENT SUCCESSES

The Hampden Bridge Bundle Project, valued at $44.7 million, is rebuilding eight bridges and rehabilitating one bridge along I-95 in Hampden. The new single-span structures will include non-corrosive materials to reduce future maintenance needs.

IMPLEMENTATION INITIATIVES

PROCESS

OneDOT business process (plan, deliver, measure) institutionalized through work phases (management cycle, process stage, activity groups, activities); Data Quality Management Plan, Risk Management Process (managed by MaineDOT Asset Management Council)

PROGRAM

Highway Corridor Priority and Customer Service Level, dTIMS (Infrastructure Asset Management Software), Asset Management Funding Strategies

POLICY

Resource Allocation Goals

PARTNERSHIPS

FHWA, FTA, Maine Turnpike Authority, transit providers (all eligible FTA funding recipients), localities

FAMILY OF PLANS CONNECTIONS

MODAL PLANS			
Transit	Rail	**Active**	Aviation

STRATEGIC PLANS			
Safety	**Freight**	**Roads/Bridges**	**Other***

* Transportation Asset Management Plan, Transit Asset Management, MaineDOT Three-Year Work Plan

LONG-RANGE TRANSPORTATION PLAN
–Working to Move Maine–

ENHANCE THE OVERALL EXPERIENCE FOR CUSTOMERS USING MAINE'S HIGHWAYS.

Maintain and enhance customer experience, quality of life and economic vibrancy through strategic investment in corridor management and operations, mobility investments, systemic safety improvements, and Complete Streets design philosophies.

GOALS

LEAD: A Well-Managed System

PRIMARY RELATED

OBJECTIVES

- Reduce fatalities and serious injuries. Reduce crashes involving vulnerable users.
- Improve system performance for our customers.
- Support job and economic growth.
- Improve access for all Maine people. Reduce disparities in accessibility.

FAMILY OF PLANS CONNECTIONS

MODAL PLANS			
Transit	Rail	**Active**	Aviation

STRATEGIC PLANS			
Safety	**Freight**	**Roads/Bridges**	**Other***

* Transportation Asset Management Plan, MaineDOT Three-Year Work Plan

RECENT SUCCESSES

MaineDOT partnered with the City of Sanford for the $34 million Downtown Sanford Village Partnership Initiative (VPI) to rehabilitate key infrastructure and enhance roads, sidewalks, and streetlights in Sanford's commercial center. Federal funds are supporting the partnership, including a $25 million Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Grant.

IMPLEMENTATION INITIATIVES

PROCESS

OneDOT business process (plan, deliver, measure) institutionalized through work phases (management cycle, process stage, activity groups, activities)

PROGRAM

Highway Corridor Priority and Customer Service Levels

POLICY

Resource Allocation Goals, Complete Streets, Local Cost Sharing Policy

PARTNERSHIPS

Maine Turnpike Authority, FHWA, National Park Service, localities

LONG-RANGE TRANSPORTATION PLAN
–Working to Move Maine–

PROVIDE RELIABLE AND CONNECTED MOBILITY SOLUTIONS.

Identify and strive to meet the needs of transit and intercity passenger services travel demand for all trip types, including commuting, long-distance travel, and tourism, including intermodal and first-last-mile connections.

GOALS

LEAD: A Well-Managed System

PRIMARY RELATED

OBJECTIVES

- Improve system performance for our customers.
- Reduce greenhouse gas emissions.
- Mitigate environmental impacts.
- Support job and economic growth.
- Improve access for all Maine people.
- Reduce disparities in accessibility.

FAMILY OF PLANS CONNECTIONS

MODAL PLANS			
Transit	**Rail**	**Active**	**Aviation**

STRATEGIC PLANS			
Safety	Freight	Roads/Bridges	**Other***

* Public Transportation Agency Safety Plans, MPO Metropolitan Transportation Plans, Maine Won't Wait

RECENT SUCCESSES

Supported by MaineDOT, the Island Explorer provides free bus services during tourism season for Acadia National Park.

Maine State Ferry Service provides access to six island communities, and the *2022-2024 Work Plan* includes three new ferries and improved ferry terminal infrastructure in Frenchboro.

IMPLEMENTATION INITIATIVES

PROCESS

Transit provider, regional, and corridor transit planning and route studies, agency specific/group Transit Asset Management Plans

PROGRAM

GO MAINE, Workforce Transportation Pilot Program, Volunteer Driver Programs, FTA formula and discretionary grant programs

POLICY

Public Transit Advisory Council, Transit Bus Electrification Plan, Locally Coordinated Plan, State Management Plan

PARTNERSHIPS

Maine Turnpike Authority, Department of Health and Human Services/MaineCare, Maine Transit Association, Moving Maine Network, transit providers, National Park Service

LONG-RANGE TRANSPORTATION PLAN
–Working to Move Maine–

SUPPORT COMMUNITIES ACROSS MAINE.

Support, partner with, and invest in Maine people through community-based initiatives and engineering solutions that include context-sensitive, accessible, multimodal, safe, and climate-ready investments that meet people where they are, serve vulnerable populations, connect rural places, enhance economic vitality and quality of life, and address shared goals.

GOALS

LEAD: Equitable Access

PRIMARY RELATED:

OBJECTIVES

- Reduce fatalities and serious injuries. Reduce crashes involving vulnerable users.
- Improve system performance for our customers.
- Support job and economic growth.
- Improve access for all Maine people. Reduce disparities in accessibility.

FAMILY OF PLANS CONNECTIONS

MODAL PLANS			
Transit	**Rail**	**Active**	Aviation

STRATEGIC PLANS			
Safety	Freight	Roads/Bridges	**Other***

* MaineDOT Three-Year Work Plan, Community Based Initiatives, Maine Won't Wait

RECENT SUCCESSES

MaineDOT and Waterville have successfully secured two recent Better Utilizing Investments to Leverage Development (BUILD) grants to revitalize downtown Waterville (2018), including improving traffic flow, increasing economic activity, creating a safer pedestrian environment, and replacing the Ticonic Bridge (2020).

IMPLEMENTATION INITIATIVES

PROCESS

MaineDOT Statement on Equity, MaineDOT Engineering practices and procedures, Maine Local Roads Center

PROGRAM

BIL Discretionary Grant Programs (such as RAISE, Reconnecting Communities, and Safe Streets and Roads for All), Village Partnership Initiative, Municipal Partnership

POLICY

Complete Streets, Local Cost Sharing Policy, Sensible Transportation Policy Act, Municipal Comprehensive Planning Rule

PARTNERSHIPS

Tribes and Nations, MPOs, RPOs, localities

LONG-RANGE TRANSPORTATION PLAN
–Working to Move Maine–

FOSTER OPPORTUNITIES FOR FLEXIBLE COMMUTING.

Continue to deliver and expand programs and partnerships offering commuting flexibility through unique services, resources, and incentives that meet diverse employer and employee needs across all regions of Maine.

GOALS

LEAD: Equitable Access

PRIMARY RELATED:

OBJECTIVES

- Improve system performance for our customers
- Support job and economic growth.
- Reduce greenhouse gas emissions. Mitigate environmental impacts.
- Improve access for all Maine people. Reduce disparities in accessibility.

FAMILY OF PLANS CONNECTIONS

MODAL PLANS			
Transit	**Rail**	**Active**	Aviation

STRATEGIC PLANS			
Safety	Freight	Roads/Bridges	**Other***

* MPO Metropolitan Transportation Plans, Maine Won't Wait, Maine Broadband Action Plan, Maine Jobs and Recovery Plan

RECENT SUCCESSES

The $5 million Workforce Transportation Pilot program will pursue and develop transportation solutions that connect current and potential workers with employers across Maine. This could include ridesharing, vanpools, and other subsidized transit options.

The GO MAINE ridesharing program engages with employers and other organizations to provide free ridesharing and other transportation options for current and future employees.

IMPLEMENTATION INITIATIVES

PROCESS

Coordination with state agency and private employer partners on opportunities for ridesharing and other commuting incentives and resources

PROGRAM

GO MAINE, Workforce Transportation Pilot Program

POLICY

MaineDOT Lead by Example strategies, flexible work schedules, telework

PARTNERSHIPS

Transit providers, Maine Department of Labor, Maine Department of Economic and Community Development, Maine Turnpike Authority, MPOs, RPOs, employers, mobility services, ConnectMaine Authority

LONG-RANGE TRANSPORTATION PLAN
–Working to Move Maine–

PREPARE FOR CLIMATE CHANGE

Assess the vulnerability of infrastructure to climate change and advance system resilience and recovery through new design standards, hardened infrastructure investments, and improved emergency operations and communications.

GOALS

LEAD

Environmentally Sustainable Transportation System

PRIMARY RELATED

OBJECTIVES

- Reduce fatalities and serious injuries.
- Maintain a state of good repair.
- Improve supply chain efficiency.
- Reduce disruptions.
- Improve access for all Maine people. Reduce disparities in accessibility.

FAMILY OF PLANS CONNECTIONS

MODAL PLANS			
Transit	**Rail**	Active	Aviation

STRATEGIC PLANS			
Safety	**Freight**	**Roads/Bridges**	**Other***

* Maine Won't Wait, Transportation Asset Management Plan MaineDOT Three-Year Work Plan, Maine Jobs and Recovery Plan

RECENT SUCCESSES

As part of Maine's Four-Year Plan for Climate Action, MaineDOT is conducting a statewide infrastructure resilience assessment, which will be used to inform project planning. MaineDOT is replacing the Station 46 Bridge on Route 1 bridge in Woolwich, raising the bridge five feet to address flooding concerns and sea level rise.

IMPLEMENTATION INITIATIVES

PROCESS

MaineDOT Climate Initiative – Infrastructure Resilience Assessment, MaineDOT statewide sea level rise model

PROGRAM

Maine Infrastructure Adaptation Fund, FHWA PROTECT program

POLICY

Complete Streets, MaineDOT Bridge Design Guide

PARTNERSHIPS

Efficiency Maine, Maine Climate Council, Maine Department of Environmental Protection, Maine Department of Inland Fisheries and Wildlife, localities

LONG-RANGE TRANSPORTATION PLAN
–Working to Move Maine–

LEAD BY EXAMPLE.

"Lead by Example" through protecting and preserving Maine's natural environment, prioritizing energy efficiency initiatives in facilities and clean energy use, using climate-friendly materials and products, purchasing zero-emission fleet vehicles, and supporting and incentivizing low and zero-emissions transit fleets.

GOALS

LEAD

Environmentally Sustainable Transportation System

PRIMARY RELATED

OBJECTIVES

Support and pilot innovation.
Leverage funding opportunities.

Reduce greenhouse gas emissions.
Mitigate environmental impacts.

FAMILY OF PLANS CONNECTIONS

MODAL PLANS			
Transit	**Rail**	**Active**	**Aviation**

STRATEGIC PLANS			
Safety	**Freight**	**Roads/Bridges**	**Other***

* Maine Won't Wait

RECENT SUCCESSES

In November 2019, Governor Mills signed an Executive Order directing state government agencies to lead by example in pursing energy efficiency, renewable energy, and sustainability measures, all of which are expected to reduce operational costs and reduce state government's carbon emissions.

In 2022, MaineDOT formed an Offshore Wind Port Advisory Group (OSWPAG) to advise it and other state officials regarding the potential development of wind port facilities.

IMPLEMENTATION INITIATIVES

PROCESS

Low and zero-carbon strategies identified in multiple recent plans, including Maine Plan for Electric Vehicle Infrastructure Deployment and Governor's Office of Policy Innovation and the Future's Lead By Example. MaineDOT's Environmental Office reviews and studies.

PROGRAM

National Electric Vehicle Infrastructure Formula Program, Carbon Reduction Program, Volkswagen Mitigation Beneficiary Plan, transit fleet electrification

POLICY

Governor's Office of Policy Innovation and the Future's Lead By Example report, Environmental Office regulations, plans, and guidance

PARTNERSHIPS

Transit providers, Maine Energy Office, Governor's Office of Policy Innovation and the Future, private sector firms, non-profit organizations, localities

LONG-RANGE TRANSPORTATION PLAN
–Working to Move Maine–

IMPROVE THE CUSTOMER EXPERIENCE THROUGH TECHNOLOGY.

Pilot, enhance, and expand transportation system devices and infrastructure including multimodal intelligent transportation systems, transit technologies like automatic vehicle location and signal priority, traffic monitoring and real time management, new materials and construction practices, broadband access, and communications with connected and autonomous vehicles.

GOALS

LEAD: A Well-Managed System

PRIMARY RELATED

OBJECTIVES

- Reduce fatalities and serious injuries.
- Reduce crashes involving vulnerable users.
- Maintain a state of good repair.
- Improve system performance for our customers.
- Support and pilot innovation.
- Leverage funding opportunities.
- Reduce disruptions.

FAMILY OF PLANS CONNECTIONS

MODAL PLANS			
Transit	Rail	Active	**Aviation**

STRATEGIC PLANS			
Safety	Freight	**Roads/Bridges**	**Other***

* MaineDOT Three-Year Work Plan, Transportation Asset Management Plan

RECENT SUCCESSES

MaineDOT is upgrading state-owned traffic signals with updated technology that can provide real-time traffic and signal data to help eliminate delays. MaineDOT received $3.5 million from FHWA's Advanced Transportation and Congestion Management Technologies Deployment program to upgrade 43 traffic signals.

MaineDOT is providing guidance to the state's transit agencies in development General Transit Feed Specification (GTFS) mapping and automated fare payment technologies.

IMPLEMENTATION INITIATIVES

PROCESS

Interstate Operations Plan, MaineDOT Transportation Management Center, MaineDOT Demonstration Project Procedures, MaineDOT Transportation Research, Unmanned Aerial System (UAS) bridge inspections, MaineDOT solar arrays

PROGRAM

BIL discretionary funding programs, Searsport Offshore Wind Port Feasibility Study

POLICY

Commission on Autonomous Vehicles (2019), Maine Plan for Electric Vehicle Infrastructure Deployment

PARTNERSHIPS

Efficiency Maine, ConnectMaine Authority, FHWA, FTA, private sector, New England 511, University of Maine

LONG-RANGE TRANSPORTATION PLAN
–Working to Move Maine–

DIVERSIFY AND STABILIZE FUNDING SOURCES TO ENHANCE SUSTAINABILITY.

Position MaineDOT and partners to advance sustainable revenue sources, maximize opportunities for federal grants, share resources across state government agencies, partner with non-profits and other advocacy organizations to build relationships, and collaborate with the private sector to finance, deliver, operate, and maintain transportation assets and systems.

GOALS

LEAD

A Well-Managed System

PRIMARY RELATED

RECENT SUCCESSES

In 2022, MaineDOT received over $126.7 million in federal funding under the BIL. This funding was from two grants: RAISE ($49.6 million) and Infrastructure for Rebuilding America (INFRA) ($77.1 million). Additionally, MaineDOT has pending applications for more than $100 million over multiple programs.

OBJECTIVES

Support and pilot innovation.
Leverage funding opportunities.

IMPLEMENTATION INITIATIVES

PROCESS

Annual *Work Plan* development process, OneDOT business process (plan, deliver, measure) institutionalized through work phases (management cycle, process stage, activity groups, activities)

PROGRAM

MaineDOT and BIL discretionary grant programs, Municipal Partnership Initiative, Business Partnership Initiative

POLICY

Local Cost-Sharing Policy, Resource Allocation Goals

PARTNERSHIPS

FHWA, FRA, FTA, MPOs, RPOs, municipalities, non-profits and advocacy groups, private sector

FAMILY OF PLANS CONNECTIONS

MODAL PLANS			
Transit	**Rail**	**Active**	**Aviation**

STRATEGIC PLANS			
Safety	**Freight**	**Roads/Bridges**	**Other***

* MaineDOT Three-Year Work Plan, MPO Transportation Improvement Plans

LONG-RANGE TRANSPORTATION PLAN
–Working to Move Maine–

ENHANCE THE TRANSPORTATION SYSTEM.

Be flexible in identifying and implementing cost-effective improvements to enhance multimodal system operations and address emerging problems through proven and practical investments.

GOALS

LEAD

A Well-Managed System

PRIMARY RELATED

OBJECTIVES

- Improve system performance for our customers.
- Support and pilot innovation.
- Leverage funding opportunities.

RECENT SUCCESSES

Proactive stormwater management in coordination with Maine Department of Environmental Protection (DEP) helps protect culverts and wildlife. This is an example of preventative improvements that make Maine's transportation system more resilient.

IMPLEMENTATION INITIATIVES

PROCESS

OneDOT business process (plan, deliver, measure) institutionalized through work phases (management cycle, process stage, activity groups, activities), MaineDOT Engineering practices and procedures, Maine Local Roads Center

PROGRAM

MaineDOT Highway Program – Bureau of Project Development, Highway Corridor Priority and Customer Service Levels

POLICY

Resource Allocation Goals, Complete Streets Policy, Local Cost Sharing Policy, Keeping Our Bridges Safe Report, Roads Report, Stormwater Best Management Practices

PARTNERSHIPS

Maine Turnpike Authority, FHWA, transit providers, localities, Maine Department of Environmental Protection

FAMILY OF PLANS CONNECTIONS

MODAL PLANS			
Transit	**Rail**	**Active**	**Aviation**

STRATEGIC PLANS			
Safety	**Freight**	**Roads/Bridges**	**Other***

* MaineDOT Three-Year Work Plan, Transportation Asset Management Plan, Transit Asset Management

LONG-RANGE TRANSPORTATION PLAN
–Working to Move Maine–

IMPROVE FREIGHT CONNECTIONS, RELIABILITY, AND EFFICIENCY.

Address freight mobility on highway, rail, or other modal corridors by improving system capacity, safety, and operations enabling efficient and reliable goods movement, including on-demand goods and services to and from Maine markets and consumers.

GOALS

LEAD: A Vibrant Economy

PRIMARY RELATED:

OBJECTIVES

- Reduce fatalities and serious injuries.
- Improve system performance for our customers.
- Support job and economic growth.
- Improve supply chain efficiency.
- Broaden the transportation workforce.
- Expand Maine connections to national and global economy.
- Improve access for all Maine people.

FAMILY OF PLANS CONNECTIONS

MODAL PLANS			
Transit	**Rail**	Active	**Aviation**

STRATEGIC PLANS			
Safety	**Freight**	**Roads/Bridges**	Other*

RECENT SUCCESSES

MaineDOT is partnering with the Maine Port Authority and the private sector to build an International Cold Storage facility at Portland International Marine Terminal on the Maine Port Authority's land. The facility will have 15 loading docks and capacity for more than 1,000 shipping containers' worth of products.

IMPLEMENTATION INITIATIVES

PROCESS

MaineDOT Office of Freight and Passenger Services review of commercial vehicle operations policies (size/weight, safety, taxation), weigh stations/weigh-in-motion data, Rail Use Advisory Council

PROGRAM

Industrial Rail Access Program, Consolidated Rail Infrastructure and Safety Improvements (CRISI) program, BIL formula funds and discretionary grants

POLICY

Maine Rail Preservation Act, Integrated Freight Strategy, Maine State Rail Plan

PARTNERSHIPS

Maine Turnpike Authority, Maine Port Authority, Maine International Trade Center, Maine Motor Transport Association, private sector including manufacturers, warehousing, distributors

LONG-RANGE TRANSPORTATION PLAN
–Working to Move Maine–

CONNECT MAINE TO THE WORLD.

Expand passenger and freight connections, communications, and infrastructure through Maine ports, airports, rail, pipelines, and highways to neighboring states and provinces and the rest of the world.

GOALS

LEAD: A Vibrant Economy

PRIMARY RELATED

RECENT SUCCESSES

Construction is underway to replace the almost 100-year-old Madawaska/ Edmundston International Bridge, which will be open to traffic in 2023.

OBJECTIVES

- Reduce fatalities and serious injuries.
- Improve system performance for our customers.
- Support and pilot innovation.
- Leverage funding opportunities. Support job and economic growth.
- Improve supply chain efficiency.
- Broaden the transportation workforce.
- Expand Maine connections to national and global economy.

IMPLEMENTATION INITIATIVES

PROCESS

Airport Master Plans, Port regulations, Port Pilotage Commission

PROGRAM

Industrial Rail Access Program, Collaborative Weather Instrumentation Program, Small Harbor Improvement Program

POLICY

Maine Rail Preservation Act, Maine Aviation Systems Plan (Phase 1), Maine Aeronautical Advisory Board

PARTNERSHIPS

Maine Port Authority, Maine Turnpike Authority, transit providers, 35 National Plan of Integrated Airport System airports and private airfields, private sector, U.S. Customs and Border Protection, Maine International Trade Center

FAMILY OF PLANS CONNECTIONS

MODAL PLANS			
Transit	**Rail**	Active	**Aviation**

STRATEGIC PLANS			
Safety	**Freight**	**Roads/Bridges**	Other*

LONG-RANGE TRANSPORTATION PLAN
–Working to Move Maine–

IMPROVE SYSTEM MOBILITY TO GROW THE ECONOMY.

Enhance the multimodal transportation system in strategic locations to foster economic development opportunities and provide convenient and reliable connections that help grow existing and new Maine businesses.

GOALS

LEAD: A Vibrant Economy

PRIMARY RELATED:

OBJECTIVES

- Maintain a state of good repair.
- Improve system performance for our customers.
- Support and pilot innovation.
- Leverage funding opportunities.
- Support job and economic growth.
- Expand Maine connections to national and global economy.
- Improve access for all Maine people.

FAMILY OF PLANS CONNECTIONS

MODAL PLANS

Transit	Rail	Active	Aviation
Transit	**Rail**	Active	**Aviation**

STRATEGIC PLANS

Safety	Freight	Roads/Bridges	Other*
Safety	**Freight**	Roads/Bridges	**Other***

* MaineDOT Three-Year Work Plan, Transportation Asset Management Plan, Transit Asset Management

RECENT SUCCESSES

MaineDOT and partners applied for a $56.8 million Consolidated Rail Infrastructure and Safety Improvement (CRISI) application to the Federal Railroad Administration (FRA) to support the proposed development of a sustainable Forest Products Campus with a wood-pellet facility and transportation corridor connecting the One North industrial site in Millinocket to Searsport, Maine.

IMPLEMENTATION INITIATIVES

PROCESS

OneDOT business process (plan, deliver, measure) institutionalized through work phases (management cycle, process stage, activity groups, activities)

PROGRAM

Highway Corridor Priority and Customer Service Levels, Village Partnership Initiative, Municipal Partnership Initiative, Business Partnership Initiative

POLICY

Resource Allocation Goals, Complete Streets Policy, Local Cost Sharing Policy, State Economic Development Strategy

PARTNERSHIPS

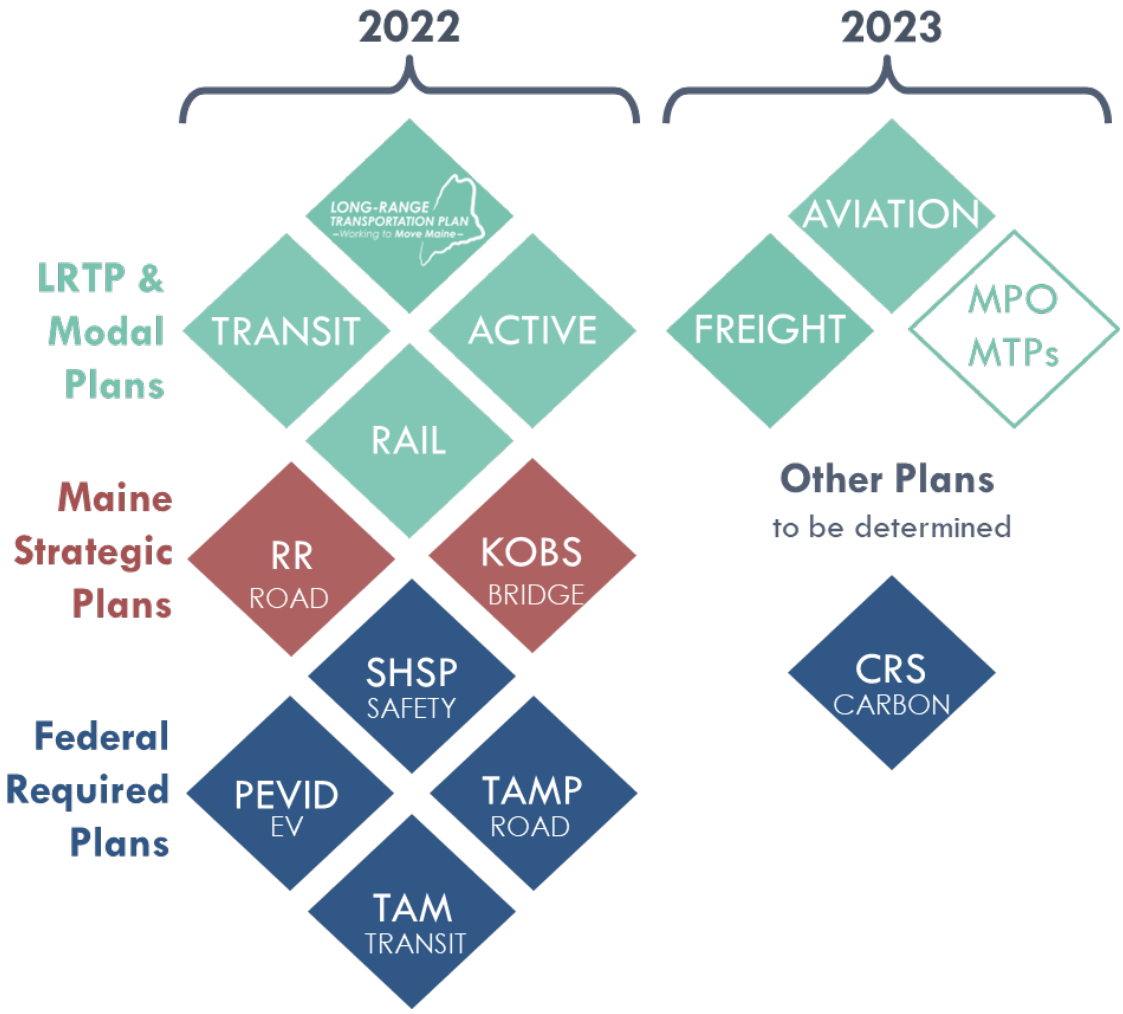
Maine Department of Economic and Community Development, Class I railroads, private trucking companies, MPOs, RPOs, transit providers, localities

Implementation Approach

How Do We Implement the Plan?

Ten different long-range, modal, strategic, and federally required statewide plans were developed during 2022 by MaineDOT and our partners. These plans, presented in Figure 4.4, set the stage for MaineDOT planning and programming activities throughout the next decade. In 2023, statewide and regional planning activities will continue with the Integrated Freight Strategy, the Statewide Aviation System Plan, each MPO *MTP* and the federally required Carbon Reduction Strategy (CRS).

Figure 4.4 MaineDOT Statewide and Regional Plans



Planning is continuous. Each of these planning processes and their outcomes create information, new practices and guidance, investment strategies, and in some cases policy that will shape development of future MaineDOT *Work Plans*. Each plan identifies a combination of strategies and actions that will shape internal MaineDOT resource allocation, priorities, and investments to operate, maintain, and improve Maine's multimodal transportation system.

What Are the LRTP Implementation Actions?

Implementation actions in the LRTP facilitate Family of Plans implementation. The implementation actions were identified based on four criteria: (1) MaineDOT and our partners should be able to start-up and execute the strategy within the next five years; (2) Delivery of the action should be within MaineDOT's purview to lead and execute; (3) Legislative action is not needed to facilitate implementation; and, (4) Start-up and implementation of the action should predominantly rely on existing resources.

Internal Implementation Actions

These are actions that MaineDOT fully owns and can implement internally through existing staff resources.

1. Annually, prior to setting resource allocation goals for each *Work Plan*, the Bureau of Planning and the Results and Information Office will meet to ensure that the resource allocation is consistent, given available resources, with the goals and strategies of the Family of Plans.

Description: Following the conclusion of the *LRTP* and the modal and strategic plans within the Family of Plans, MaineDOT will comprehensively review policies and methodologies guiding investment decisions as part of our annual *Work Plan* development process. This policy and methodology review will consider the strategies and actions identified in each plan, particularly the federally required plans such as the *TAMP*, *SHSP*, *PEVID* (NEVI), and development of the *Integrated Freight Strategy* (Freight Plan) and *Carbon Reduction Strategy* in 2023. These federally required plans are particularly relevant for funding decisions as they dictate MaineDOT's direction and enable access to federal funds provided as part of BIL and other funding sources.

More direct and transparent linkage of *Work Plan* decisions to Family of Plans strategies and actions maintains a commitment to partners to implement the Plan – Deliver – Measure process outlined in Figure 1.1.

Considerations: Implementation of this action will require improvements over multiple *Work Plan* cycles. Given the complex nature of *Work Plan* development and the number of funding programs and eligibility requirements, there are guidelines and constraints shaping the *Work Plan* approach. The recommended investment scenarios developed for Maine's highway system across the combination of the *TAMP*, *Keeping Our Bridges Safe*, and *Roads Report* will shape highway spending decisions, which represented 74 percent of investments in the *2022-2024 Work Plan*.

Timing: Ongoing recommendations from *PEVID*, *TAMP*, *KOBS*, and *RR* may directly shape *2023-2025 Work Plan* development, while other Family of Plans strategies and actions may take multiple years to operationalize within the annual *Work Plan* development process.

Roles: MaineDOT Bureau of Planning, Results and Information Office, and other relevant MaineDOT staff will coordinate on this effort.

2. MaineDOT Bureau of Planning will annually review ongoing implementation initiatives within the Family of Plans and update the Commissioner on progress.

Description: MaineDOT's Bureau of Planning staff would meet no less than annually to discuss ongoing initiatives and update the Commissioner on implementation progress across the Family of Plans. This would include progress on targeted strategies and actions recommended by each plan, ongoing plan development activities, changing priorities and assumptions, and specific programs and projects supporting plan goals and objectives.

Considerations: A pre-scheduled annual meeting with clear expectations and time commitment is most efficient.

Timing: Schedule first annual meeting for December 2023.

Roles: MaineDOT Bureau of Planning staff will coordinate on this effort.

3. Develop policy establishing how MaineDOT will amend or update Family of Plans documents to address changing conditions, legislation, and regulations to best position Maine to compete for grant opportunities and leverage partnerships.

Description: Each modal and strategic plan within the Family of Plans should remain dynamic throughout the next five years. Many of these plans are required to be updated again within the next five-year cycle, including the *TAMP*, *SHSP*, *KOBS*, and *RR*, while the *Freight Plan* and *Statewide Aviation Systems Plan* both are being developed throughout 2023. For those plans not on a required update cycle, this action should focus on establishing policies and processes to review and update plan assumptions and priorities on a regular basis.

Considerations: Keeping the Family of Plans dynamic rather than static means being proactive to ensure consistency with and support of emerging state and federal priorities, including state and federal administration direction as well as current and emerging discretionary grant programs. A dynamic stance can also accommodate other external changes like worldwide or domestic events or macroeconomic shifts impacting Maine that the plans should reference and incorporate. This dynamic approach does not require plan rewrites, but succinct fact sheets or addendums that communicate to partners and stakeholders how the plans address emerging topics.

Timing: Establish a framework for policy and process, test in 2023, and fully implement in 2024. Consider formal minor updates every two years beginning in December 2024, and full plan revisions every four years, beginning in November 2026.

Roles: MaineDOT Bureau of Planning staff will coordinate on this effort.

External Implementation Actions

These are actions that will be undertaken by MaineDOT in conjunction with external partners. While MaineDOT will initiate and coordinate, we will reply on our partners to assist in the implementation and execution of these actions.

4. Conduct ongoing public and stakeholder coordination that briefs partners on plan implementation activities and engages opportunities for partnerships (including resource sharing).

Description: Consistent with implementation actions #2 and #3, communication to MaineDOT stakeholders, including elected officials, the membership organization and advocacy community, private partners, and the general public is an important part of maintaining and expanding awareness of the Family of Plans. This could occur through a commitment to regularly provide updates through the MaineDOT website and social media channels. Beyond this, more active engagement in organization and advocacy conferences, and events to discuss the Family of Plans and ongoing activities can help build partnerships.

Considerations: Beyond keeping interested parties informed, there is also a wealth of information created by the Family of Plans process that can support activities of these groups. Making data available that may support their efforts can help to foster a collaborative and positive relationship with these groups and enable better participation and support of future MaineDOT activities and shared goals.

Timing: Ongoing opportunities to brief these groups and seek input, as Family of Plans content is finalized and continually updated in 2023 and beyond.

Roles: MaineDOT Bureau of Planning staff will coordinate with our partners on this effort.

5. Expand partnerships with Tribes and Nations, MPOs, RPOs, municipalities, and transit operators on long-range and strategic regional planning opportunities consistent with Family of Plans outcomes, goals, and objectives.

Description: MaineDOT's regional and local transportation planning and programming partners are critical to the overall success and implementation of the Family of Plans. Identifying leaders within each of these partner groups to participate in the committee (discussed in implementation action #3) will keep MaineDOT's partners engaged in the process and enable them to brief colleagues. As MaineDOT routinely updates the continuing, cooperative, and comprehensive (3-C) agreements with regional and local governments as required by 23 CFR 450 Subpart C, innovative approaches for collaboration consistent with these implementation actions and the overall Family of Plans will be detailed. This includes opportunities for information-sharing that will enable consistency between ongoing and future regional plans led by the Tribes and Nations, MPOs, RPOs, and transit operators.

Considerations: The Family of Plans creates a wealth of information and opportunity to foster improved planning led by regional and local transportation planning organizations and municipalities. Regular sharing of

data, planning tools, and other valuable digital content will help these organizations, often with limited resources, leverage MaineDOT resources, conduct planning through a manner consistent with MaineDOT perspectives, and advance their own practices.

Timing: Ongoing, particularly in 2023 as multiple MPOs embark on *Metropolitan Transportation Plan* updates.

Roles: MaineDOT Bureau of Planning staff will coordinate with our partners on this effort.

Table 4.1 summarizes the implementation actions, initiative type, anticipated timing, and level of resources required to implement.

Table 4.1 Summary of Internal and External Implementation Actions

Internal Implementation Actions	Initiative Type	Timing (years)	Resources
Annually, prior to setting resource allocation goals for each Work Plan, the Bureau of Planning and the Results and Information Office will meet to ensure that the resource allocation is consistent, given available resources, with the goals and strategies of the Family of Plans.	Program	2+	High
MaineDOT Bureau of Planning will annually review ongoing implementation initiatives within the Family of Plans and update the Commissioner on progress.	Process	1	Mid
Develop policy establishing how MaineDOT will amend or update Family of Plans documents to address changing conditions, legislation, and regulations to best position Maine to compete for grant opportunities and leverage partnerships.	Policy	2+	Mid
External Implementation Actions	**Initiative Type**	**Timing (years)**	**Resources**
Conduct ongoing public and stakeholder coordination that briefs partners on plan implementation activities and engages opportunities for partnerships (including resource sharing).	Partnerships	1	Mid
Expand partnerships with Tribes and Nations, MPOs, RPOs, and transit operators on long-range and strategic regional planning opportunities consistent with Family of Plans outcomes, goals, and objectives	Partnerships	1	Low

What Are Real-World Solutions to Meet Our Needs?

MaineDOT and our partners address customer needs through a variety of proven and innovative solutions that meet our customers where they are. These existing and proposed solutions are real examples of the strategies within the *LRTP* and the associated Family of Plans. They also create opportunities for the next generation of strategies to meet emerging and future needs. Example issues highlighted in the needs assessment and associated current solutions implemented by MaineDOT and our partners are presented in Table 4.2.

Table 4.2 Critical Transportation Issues and Current Example Maine Solutions

Issue	Solution
Commuting to Work	
Congestion and delays are a common transportation issue for urban commuters, who primarily commute by driving alone.	GO MAINE[xxxii] is a statewide travel resource program. Examples of GO MAINE's free services include matching up carpoolers and helping with trip planning, while members can earn rewards and can use an Emergency Ride Home.
Transit services often take the rider most of the distance to their final destination but not the entire way. This first/last mile can sometimes be difficult to complete due to the distance, lack of services, or other personal mobility constraints.	Bikeshare started in Portland in summer 2022, with 200 bikes across more than 30 stations. Greater Portland Metro is also proposing the start-up of on-demand transit service in Falmouth. The Transit Plan is assessing the potential for similar approaches in other areas of Maine.
Chaining trips for different purposes, such as driving home from work, picking up a child from school, and picking up groceries is easiest in a personal vehicle. If someone wants to shift to using transit, this can make chaining trips difficult.	The Eastern Maine Development Corp. and area partners will use more than $445,000 in federal funding to study transportation options that will better connect Piscataquis and Penobscot counties, including public transit options.
Riding a bike, walking, or rolling to work has increased in popularly. However, lack of safe, convenient infrastructure, or proper storage facilities at destinations make it more difficult to regularly make this commute choice.	The Harborwalk Trail is a popular 5.2-mile mostly separated path that is used by biking, walking, or rolling commuters to travel around Portland.
Accessing Services	
Often, there are limited transportation options in rural areas if you do not have access to a personal vehicle. This includes limited access to medical appointments or hospital visits, goods such as groceries, and other services.	A priority of the Maine State Office of Rural Health and Primary Care is to "reduce geographic, financial, transportation and other barriers that prevent access to health care services." MaineCare covers non-emergency transportation to medical appointments for eligible members.

Issue	Solution
Rural residents are more likely to be cut off from access to goods and services, including emergency services, by road closures due to weather and traffic crashes, among other reasons.	MaineDOT continues to make infrastructure more resilient to extreme weather. For example, MaineDOT is replacing the Station 46 Bridge on Route 1 in Woolwich, raising the bridge five feet to address flooding concerns and sea level rise.
The growing portion of older Maine people face unique transportation challenges when they are no longer able to drive. Particularly in rural areas, there are limited transportation options if they cannot drive, particularly for non-medical appointments.	Maine Department of Health and Human Services Office of Aging & Disability Services provides several programs for older adults and adults with disabilities, including Adult Day Services to provide the opportunity to engage in community-based services. Staff and volunteers at Maine's five Area Agencies on Aging provide nutritious meals at community dining sites as well as home delivered meals throughout Maine to eligible older individuals who are homebound.
Tourism and Recreation	
The vehicle, pedestrian, and marine traffic congestion (including ferries and personal watercraft) caused by tourism during peak seasons affects the quality of life of Maine's residents and the visitor experience. Overcrowding, traffic, and decline in service quality impacts residents' access to local goods, services, employment, and recreation. Additionally, the number of visitors arriving by car at key tourism destinations is greater than parking and road capacity, which may lead to illegal parking, traffic delays, and unsafe conditions for vehicles, pedestrians, and bicyclists.	In 2022, the Maine Office of Tourism launched an initiative to develop a statewide Destination Management Plan. The plan establishes a framework to monitor visitors and tourism impacts, develop management strategies, and encourage more responsible travel. The Bar Harbor Town Council commissioned a 2019 cruise tourism and traffic congestion report[xxxiii] to quantify cruise ship impacts and recommend solutions that maximize the benefits of tourism while minimizing impacts to residents. Solutions center on pedestrian and maritime safety, traffic management, seasonal parking areas, and real time parking capacity signs.
Multimodal access to small towns and rural areas, including national and state parks and trails, is limited, resulting in constrained access for visitors without vehicles. There is little to no intercity bus service for the Kennebec & Moose River Valleys, or Maine Lakes and Mountains regions.	Western Maine Transportation Services, in cooperation with towns, businesses, MaineDOT, and the Federal Transit Administration, operates the Bethel/Sunday River Mountain Explorer free shuttle and seasonal Mountain Express commuter buses and Sugarloaf Explorer free shuttle and Sugarloaf Express commuter buses.
Current limited access to charging stations, particularly fast charging options, in rural tourism destinations creates travel challenges, uncertainty, and inconvenience for EV owners.	In summer 2022 MaineDOT developed the Plan for Electric Vehicle Infrastructure Deployment, which identifies charging station location priorities and enables access to NEVI program funding.

Issue	Solution
Goods Movement	
Maine businesses, particularly those shipping heavy products long distances, benefit from access to high-quality rail networks. The infrastructure in more rural areas including both roads and rail, has some maintenance issues that decrease speeds and increase turn times. Climate-related issues include frozen crossings, frozen switches, and ice and snow on the tracks.	Maine's Industrial Rail Access Program (IRAP) is a public-private freight partnership program overseen by MaineDOT. Under this program, companies can apply for 50 percent matched state investment for a range of rail improvements: accelerated maintenance, rehabilitation, new siding improvements, ROW acquisition, or intermodal facility construction.
E-commerce has reshaped consumer demand; customers now expect goods ordered online to be delivered extremely quickly, prompting an increased need for more distribution centers.	Companies have begun adapting to this new norm by positioning inventory across more facilities. Local and micro-fulfillment centers help create more lower volume "shipping lanes."
As they seek to remain competitive at a global scale, Maine's small businesses continue to seek freight modes that offer competitive costs.	Maine's three major ports – Portland, Searsport, and Eastport – are essential to Maine's competitiveness at a global scale. MaineDOT's continued communication and engagement with the ports can help ensure consistent access to these resources.

4.4 Tracking Progress and Performance

How we meet our objectives is quantified through performance measures, which help assess how investments address transportation needs and meet MaineDOT goals. MaineDOT tracks a wealth of measures that communicate how the multimodal transportation system is performing relative to performance standards and established performance targets. Many of these performance measures are defined by federal surface transportation requirements developed and managed by FHWA and FTA, and are presented in more detail in **Appendix B**, System Performance Report. Federal surface transportation performance measures applicable to Maine fall primarily into three groups which support the *LRTP* goals and objectives.

Safety – Performance measures track fatalities and serious injuries on all public roads in Maine for persons in vehicles, bicyclists, and pedestrians. Performance measures also track the performance of urban area transit systems, tracking fatalities and injuries, as well as the occurrence of safety events, which also includes personal security.

Asset Condition – Performance measures track the condition of NHS (primarily interstate highways and U.S. Routes) pavement and bridges based on annual inspection results. Performance measures also track the age of transit vehicles (buses, shuttles, and vans) and maintenance and support vehicles relative to a useful life standard, and the condition of transit facilities including bus stops and maintenance facilities.

System Performance, Freight, and Congestion Mitigation and Air Quality – System performance measures track the reliability of travel times for person-miles traveled on interstate highways and on other U.S. highways. Freight measures track the reliability of travel times for trucks on interstate highways.

MaineDOT also tracks performance on the MaineDOT owned and maintained highway system through customer service levels[xxxiv] (CSL). There are 11 unique measures organized into three categories (safety, condition, service) tracked across each of the five-highway corridor priority (HCP) levels to build a complete customer service profile for each roadway segment.

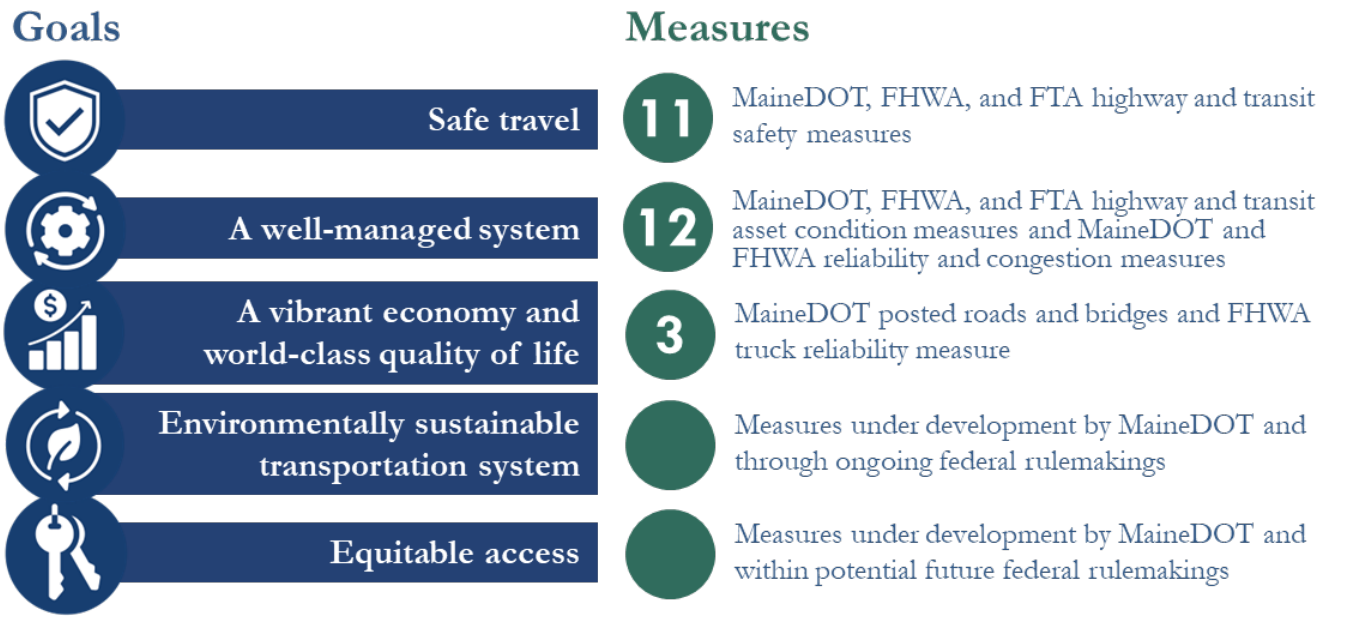
Safety – Performance measures track head-on and run-off-the road crash rates by roadway segment compared to statewide averages and condition measures such as roadway width, pavement rutting, and bridge reliability that are contributors of safety outcomes.

Condition – Performance measures track different condition elements including the pavement condition rating, roadway strength, and bridge condition.

Service – Performance measures track characteristics of the use of the highway system, including the location of posted roads and bridges and congestion (measures of travel delay) during peak travel periods (particularly the summer season).

Figure 4.5 presents existing MaineDOT performance measures including those required by FHWA and FTA. For example, MaineDOT identifies an implementation action focusing on developing new data and associated performance measures to better track needs and accomplishments within the environmentally sustainable transportation system and equitable access goals.

Figure 4.5 Existing MaineDOT Performance Measures



Endnotes and Links

[i] MaineDOT *Work Plan*: https://www.maine.gov/mdot/projects/workplan/
[ii] MaineDOT *Statewide Transportation Improvement Plan*: https://www.maine.gov/mdot/stip/
[iii] MaineDOT homepage: https://www.maine.gov/mdot/
[iv] MaineDOT *Strategic Highway Safety Plan*: https://www.maine.gov/mdot/safety/
[v] *Maine Won't Wait Climate Action Plan*: https://www.maine.gov/climateplan/the-plan
[vi] *Maine Jobs and Recovery Plan*: https://www.maine.gov/jobsplan/about-the-plan
[vii] The Bipartisan Infrastructure Law Will Deliver for Maine: https://www.transportation.gov/sites/dot.gov/files/2021-11/Bipartisan_Infrastructure_Law_Maine.pdf
[viii] Safe Streets and Roads for All: https://www.transportation.gov/grants/SS4A
[ix] Heads Up! Pedestrian Safety Initiative: https://sites.google.com/bikemaine.org/headsup
[x] MaineDOT *Complete Streets Policy*: https://www.maine.gov/mdot/completestreets/
[xi] MaineDOT Municipal Partnership Initiative: https://www.maine.gov/mdot/pga/cbi/municipal/index.shtml
[xii] State of Maine Revenue & Expenditure Projection FY 2022-2025: https://www.maine.gov/budget/home
[xiii] Current MaineDOT Projects: https://www.maine.gov/mdot/projects/
[xiv] *Maine Plan for Electric Vehicle Infrastructure Deployment*: https://www.maine.gov/mdot/climate/docs/pevid-2022.pdf
[xv] MaineDOT *Transportation Asset Management Plan (2019)*: https://www.maine.gov/mdot/publications/docs/plansreports/MaineDOT-Transportation-Asset-Management-Plan-final.pdf
[xvi] Maine Industrial Rail Access Program: https://www.maine.gov/mdot/ofps/irap/
[xvii] MaineDOT *Keeping Our Bridges Safe 2014 Report*: https://www.maine.gov/mdot/env/documents/fjwepr/ea/2019/Appendix-8-Keeping-of-Bridges-Safe-Report,-2014.pdf
[xviii] MaineDOT *Roads Report* (2016): https://www.maine.gov/mdot/docs/2016/roadsreport2016.pdf
[xix] MaineDOT Business Partnership Initiative: https://www.maine.gov/mdot/pga/cbi/business/index.shtml
[xx] MaineDOT *Local Cost-Sharing Policy*: https://www.maine.gov/mdot/completestreets/docs/MaineDOTlocalcostsharingPolicy062014.pdf
[xxi] MaineDOT *Public Involvement in Transportation Decision-Making*: https://www.maine.gov/mdot/planning/docs/2021/pip0321.pdf
[xxii] MaineDOT *Cooperative Planning Process for Non-Metropolitan Local Officials*: https://www.maine.gov/mdot/planning/docs/2022/MaineDOT%20Non-Metro%20Planning%20Process07.2022.pdf
[xxiii] Executive Order On Advancing Racial Equity and Support for Underserved Communities Through the Federal Government: https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/executive-order-advancing-racial-equity-and-support-for-underserved-communities-through-the-federal-government/
[xxiv] MaineDOT Workforce Transportation Pilot: https://www.maine.gov/mdot/grants/mjrp/workforce/
[xxv] *Maine Economic Development Strategy*: https://www.maine.gov/decd/strategic-plan
[xxvi] MaineDOT Village Partnership Initiative: https://www.maine.gov/mdot/pga/cbi/village/index.shtml
[xxvii] State of Maine *Clean Transportation Roadmap*: https://www.maine.gov/future/initiatives/climate/cleantransportation
[xxviii] MaineDOT Statement on Equity: https://www1.maine.gov/mdot/publications/docs/2022/MaineDOTEquityStatement6-5-22.pdf
[xxix] State of Maine *Broadband Action Plan* – January 2020: https://www.maine.gov/connectme/sites/maine.gov.connectme/files/inline-files/Plan_Action_2020.pdf
[xxx] *Maine State Plan on Aging 2020-2024*: https://www.maine.gov/dhhs/sites/maine.gov.dhhs/files/inline-files/Maine_State%20Plan%20on%20Aging_2020-2024.pdf
[xxxi] Maine *State Health Improvement Plan*: https://www.maine.gov/dhhs/mecdc/ship/
[xxxii] GO MAINE, statewide travel resource program: https://gomaine.org/
[xxxiii] Bar Harbor Town Council *Cruise Tourism and Traffic Congestion in Bar Harbor: Improving the Visitor & Resident Experience*: https://www.barharbormaine.gov/DocumentCenter/View/3837/Cruise-Tourism--Traffic-Congestion-in-Bar-Harbor-004-7-23-19
[xxxiv] MaineDOT Highway Asset Management Glossary – Customer Service Level: https://www.maine.gov/mdot/about/assets/glossary/index.shtml#glossary2

LONG-RANGE TRANSPORTATION PLAN
–Working to **Move Maine**–

Working to Move Maine: MaineDOT's Long-Range Transportation Plan – Federal Requirements

Prepared by

Maine Department of Transportation

date

March 2023

1.0 Federal Requirements Overview

The *Long-Range Transportation* Plan (*LRTP*) is the Maine Department of Transportation's (MaineDOT's) overarching plan to communicate the vision for the transportation system and the strategies that MaineDOT and our partners plan to deliver throughout the next 20+ years.

The *LRTP* satisfies United States Department of Transportation (USDOT) requirements as specified in the Code of Federal Regulations (CFR), 23 CFR 450.216.[i] Provisions of the United States Code (U.S.C.), including 23 U.S.C. 135, 23 U.S.C. 150, and 49 U.S.C. 5304, as amended, require MaineDOT to:

> "carry out a continuing, cooperative, and comprehensive performance-based statewide multimodal transportation planning process… that facilitates the safe and efficient management, operation, and development of surface transportation systems that will serve the mobility needs of people and freight… and that fosters economic growth and development…."[ii]

The *LRTP* was developed consistent with federal and state requirements for consultation with partners, officials, and input from Maine citizens. The following table outlines how and in which sections the *LRTP* addresses each federal requirement.

2.0 Federal Requirements Checklist

REQUIREMENTS AND PLANNING FACTORS	PLAN RESPONSE	PLAN SECTION
MaineDOT carries out a continuing, cooperative, and comprehensive statewide multimodal transportation planning process.	• Concurrent development of the Family of Plans ensured consistency between the *LRTP*, modal plans, strategic plans, and investment programs, including development of the 2023-2025 Work Plan.[iii] • Multimodal needs, trend analyses, and strategies are consistent with MaineDOT federally compliant plans and metropolitan planning organization (MPO) Metropolitan Transportation Plans. • Ongoing and continuous engagement with MaineDOT partners and stakeholders occurred throughout plan development, including MPOs, rural planning organizations (RPOs), Maine Turnpike Authority (MTA), Tribes and Nations, and the public. • Representatives from MaineDOT served on an advisory committee to ensure alignment with other modal and strategic plans and initiatives.	Sections 1.0-1.4, 2.1-2.2, 3.1

REQUIREMENTS AND PLANNING FACTORS	PLAN RESPONSE	PLAN SECTION
MaineDOT's process addresses 10 key planning factors, including economic vitality, safety, security, accessibility and mobility, system preservation, resilience and reliability, and more.	• Vision, goals, and objectives are consistent with federal planning factors, including safety, well-managed system, vibrant economy and quality of life, environmental sustainability, and equitable access. • Strategies and actions strive to increase safety, accessibility and mobility of freight and people, and connectivity, while also enhancing tourism, preservation, operations and management, sustainability, and reliability.	Sections 2.3, 3.2-3.4, 4.3
MaineDOT uses a performance-based approach to transportation decision-making.	• Connects to federal and state-required performance measures for safety, asset condition, level of service, and system performance, freight, and congestion mitigation and air quality. • Resulting strategies and actions developed through analyses and engagement leading to prioritized solutions to address system performance and gaps. • The System Performance Report (available in Appendix B) identifies applicable performance measures, standards, and targets, and how strategies and actions support MaineDOT performance goals and targets. • The timing of LRTP development enabled MaineDOT to coordinate development of required performance management reports submitted to FHWA and FTA in 2022, including the *Highway Safety Improvement Program (HSIP)* report, *Transit Asset Management (TAM) Plan*, and Full Performance Period and Baseline Performance Period Reports submitted to FHWA in December 2022.	Sections 4.3-4.4, Appendix B
MaineDOT applies asset management principles and techniques consistent with the Transportation Asset Management Plan (TAMP), Transit Asset Management Plan (TAM), and Public Transportation Agency Safety Plan (PTASP).	• Includes "A Well-Managed System" goal and strategies to effectively manage Maine's transportation system within reliable funding levels at an acceptable level of service. • Considers near- and long-term needs that align with investment and management strategies outlined in the *TAMP*, *TAM*, and *PTASP*. • Harmonizes with MaineDOT's Plan-Deliver-Measure cycle and life cycle asset management process.	Sections 3.1-3.3, 4.3

REQUIREMENTS AND PLANNING FACTORS	PLAN RESPONSE	PLAN SECTION
MaineDOT's transportation planning process is consistent with the development of applicable regional intelligent transportation systems (ITS) architectures and the coordinated public transit-human services transportation plan.	• The needs assessment considers multiple trip type needs including for rural residents and senior populations most reliant on human service transportation options. • The needs assessment considers findings from the prior *Roads Report* (2017) and analysis conducted in 2022 to support the TAMP and updated *Roads Report* (pending final release, 2023). • Multiple objectives and strategies address ITS networks within Maine, including an objective to improve system performance for customers. • Two strategies address human service transportation needs and focus on meeting objectives associated with improved access to destinations and reducing disparities in accessibility. • Note the Transit Plan (developed concurrently as part of the Family of Plans) more directly targets human service transportation needs across Maine, particularly in rural communities and for critical populations.	Sections 3.1-3.3, 4.3
MaineDOT uses their documented public involvement process to gather input from the public during plan development and review.	• MaineDOT conducted and incorporated findings from virtual public meetings, surveys, and interviews with stakeholder groups during plan development. Public input opportunities were advertised through the MaineDOT website, email distribution lists, and targeted social media, consistent with MaineDOT's documented *Public Involvement Plan*.[iv] • Posted draft *LRTP* for a 45-day public comment review period and incorporated feedback into final plan.	Sections 1.3, 3.1, Appendix C
MaineDOT engages and coordinates with nonmetropolitan local officials, MPOs, representatives from Tribes and Nations in Maine and the Secretary of the Interior, and State, Tribal, and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation during plan development and review.	• MaineDOT conducted and incorporated findings from virtual public meetings and Family of Plans surveys during plan development. Public input opportunities were advertised through the MaineDOT website, email distribution lists, and targeted social media. • MaineDOT conducted several rounds of targeted meetings with stakeholder groups during plan development, including individual meetings with MPOs, RPOs, and Tribes and Nations in Maine. These meetings included briefings on the plan development process and enabled direct feedback from the participants. • Representatives from MaineDOT served on an advisory committee to ensure alignment with other modal and strategic plans and initiatives.	Sections 1.3-1.4, 3.1, Appendix C

REQUIREMENTS AND PLANNING FACTORS	PLAN RESPONSE	PLAN SECTION
The *LRTP* has a minimum 20-year forecast period from the time of adoption.	• Assesses trends and uncertainties driving the future direction of Maine's economy, population, and transportation system over the next 20 years, including safety, population, development, labor market, technology, global trade, climate, and tourism. • Defines long-term needs over a 20 year time horizon. • Identifies strategies that MaineDOT and partners plan to deliver throughout the next 20+ years.	Sections 2.3, 3.1, 3.5, 4.1-4.3
The *LRTP* includes elements and connections between different modes of transportation and addresses intercity travel.	• Concurrent development of the Family of Plans ensured consistency between the *LRTP*, modal plans (including Rail, Active Transportation, and Transit), strategic plans, and investment programs. • Evaluates the multimodal transportation system, funding, and future trends and needs across rail, roads, transit, and active transportation. • Includes goals, strategies, and objectives to increase mobility, reliability, and connections between transportation modes and for intercity travel in support of commuting, long-distance travel, and tourism.	Sections 1.1, 2.1-2.3, 3.1, 4.3
The *LRTP* includes strategies to ensure the preservation and efficient use of the existing transportation system.	• Includes "A Well-Managed System" goal and related objectives and strategies to effectively and sustainably manage, preserve, maintain, and operate Maine's transportation system within reliable funding levels at an acceptable level of service. • Strategies include minimizing lifecycle costs while extending life cycles, piloting new technology and materials, enhancing customer experience, identifying stable funding sources, and preparing for climate change. • Development of the plan coordinated with the 2022 *Transportation Asset Management Plan (TAMP)* and ongoing development of Maine DOTs *Keeping Our Bridges Safe Report* and *Roads Report* during 2022 (with final publication expected in 2023).	Sections 3.2-3.4, 4.3

REQUIREMENTS AND PLANNING FACTORS	PLAN RESPONSE	PLAN SECTION
The *LRTP* references, summarizes, or contains applicable studies, reports, and plans that were relevant to the development of the LRTP and integrates the priorities, goals, strategies, and projects in the HSIP, SHSP, and PTASP.	• Concurrent development of the Family of Plans ensured consistency between the *LRTP*, modal plans (including *Rail*, *Active Transportation*, and *Transit*), strategic plans, and investment programs. • Aligns with and draws upon a broad range of studies, reports, and plans including the MaineDOT *Work Plan, STIP, HSIP, SHSP, TAMP, TAM, Keeping Our Bridges Safe, Roads Report*; MPO *Metropolitan Transportation Plans;* climate initiatives including *Maine Won't Wait* and *Plan for Electric Vehicle Infrastructure Deployment*; and economic plans including the *Maine Jobs and Recovery Plan.* • Connects strategies to relevant Family of Plans modal and strategic plans and investment programs, including the *HSIP, SHSP,* and *PTASP*.	Section 1.1, 2.1-2.2, 3.1-3.3, 4.3
The *LRTP* includes a security element that incorporates priorities, goals, and projects set forth in other transit safety and security planning programs.	• Vision, goals, and objectives support safety and security for both motorized and non-motorized users while ensuring resilience and reliability of the transportation system. • Strategies support security through the adoption of a Safe System Approach, strengthening Maine's economy, and improving emergency operations and communications.	Sections 3.2-3.3, 4.3
The *LRTP* includes a description of the federal performance measures and targets used in assessing the performance of the transportation system, and a system performance report.	• System Performance Report (Appendix B) covers highway and public transit safety performance; bridge, pavement, and transit asset condition performance; and system performance for reliability, freight, and emissions.	Section 4.4, Appendix B
The *LRTP* includes a discussion of potential environmental mitigation activities, developed in consultation with Federal, state, regional, local, and Tribal agencies.	• Vision, objectives, and goals support the protection and stewardship of the natural environment and mitigation of transportation impacts. • Includes several environmental-focused strategies, including greenhouse gas emissions reductions, natural environment preservation, and climate-friendly materials and design.	Sections 3.2-3.4, 4.3

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Endnotes and Links

[i] 23 CFR 450.216: https://www.ecfr.gov/current/title-23/chapter-I/subchapter-E/part-450/subpart-B/section-450.216

[ii] 23 CFR 450.200: https://www.ecfr.gov/current/title-23/chapter-I/subchapter-E/part-450/subpart-B/section-450.200

[iii] MaineDOT 2023-2025 Work Plan: https://www.maine.gov/mdot/projects/workplan/

[iv] MaineDOT Public Involvement Plan: https://www11.maine.gov/mdot/planning/docs/2021/pip0321.pdf

Working to Move Maine: MaineDOT's Long-Range Transportation Plan – System Performance Report

Prepared by

Maine Department of Transportation

date

March 2023

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Executive Summary

The *Long-Range Transportation Plan* (*LRTP*) is the Maine Department of Transportation's (MaineDOT's) overarching plan to communicate the vision for the transportation system and the strategies that MaineDOT and our partners plan to deliver throughout the next 20+ years.

This policy document shapes investments that appear in MaineDOT's *Work Plan*, which includes the work in the federal *Statewide Transportation Improvement Program (STIP)*. Decisions on these investments today and into the future support the LRTP goals, meet MaineDOT responsibilities, and address immediate needs while also seizing opportunities to manage the impacts of trends and potential disruptions.

The *LRTP* is the **foundation of a cycle of planning** to address needs and prioritize resources to ensure a safe, well-maintained, and reliable system, **delivering projects and programs** to keep the system efficient for all users, and **monitoring system performance** to ensure we are serving our customers and meeting our goals. The process to monitor system performance is governed in part by performance measures established by FHWA and FTA.

A fundamental requirement within statewide long-range plans is the integration of the planning process with transportation performance management, defined and developed as part of rulemakings associated with the two prior federal surface transportation authorization bills, MAP-21 and the FAST Act. This system performance report fully addresses those requirements, including a description of *the federal performance measures and targets used in assessing the performance of the transportation system, and a system performance report*.[i]

System Performance Report

The MaineDOT's *Long-Range Transportation Plan System Performance Report* documents the performance measures and the statewide performance targets MaineDOT established for the surface transportation federal performance areas:

- Highway safety on all public roads, and public transportation safety
- Condition of pavement and bridges on Maine's Interstates and non-Interstate National Highway System (NHS), and condition of public transportation assets
- Reliability of passenger vehicle and truck travel on the Interstate and non-Interstate NHS

For each federal performance area, this report reviews baseline and recent performance, performance targets, and progress made toward achieving the targets. In connection with the *LRTP*, each performance measure is linked to both a *LRTP* goal and a list of related *LRTP* strategies and the rationale behind that connection.

Maine DOT and Maine's four MPOs signed cooperative agreements in 2018 regarding the coordination of establishing both FHWA and FTA performance measures and targets, which formalized ongoing performance management processes. Statewide performance trends and targets are also available within the Statewide Transportation Improvement Program (STIP)[ii], while targets for individual MPOs may be found in their respective Transportation Improvement Program documents.

Performance Summary

Overall, based on performance trends through calendar year 2021, Maine is making progress relative to most of its performance targets. A summary of each section is below:

Highway and public transit safety performance:

- **Highway safety** performance trends have shown consistent improvement since 2017 and met all targets through 2021.
- **Public transit safety** trends were reviewed, and targets were established in 2021 within the Public Transit Agency Safety Plan (PTASP).

Bridge, pavement, and public transportation asset condition performance:

- **Bridge condition** on the NHS declined between 2017 and 2021, with the percentage in good condition steadily decreasing and the percentage in poor condition increasing. Bridge performance in 2021 did not meet the 2021 target for bridges in either good or poor condition.
- **Pavement condition** on the Interstate system had mixed results between 2017 and 2021, as MaineDOT continued to refine and improve its asset management practices. On the Interstate system, pavement in good condition did not meet the 2021 target and was below the 2017 baseline condition. On the non-Interstate NHS, the overall results were positive, with the percentage of pavement in good condition increasing and the pavement in poor condition initially increasing and then going back to slightly lower than 2017 performance.
- **Public transit asset condition** performance trends were overwhelmingly positive, with applicable transit providers in Maine only missing two targets for each category of percent of vehicles in a "state of good repair".

Reliability, freight, and congestion mitigation and air quality performance:

- **Travel time reliability** for passenger miles traveled on the NHS and truck travel time reliability on Interstates both exceeded 2021 performance targets and have maintained high levels of performance since 2017. Based on current standards, Maine is not required to assess the congestion mitigation and air quality measures.

1.0 System Performance Report Overview

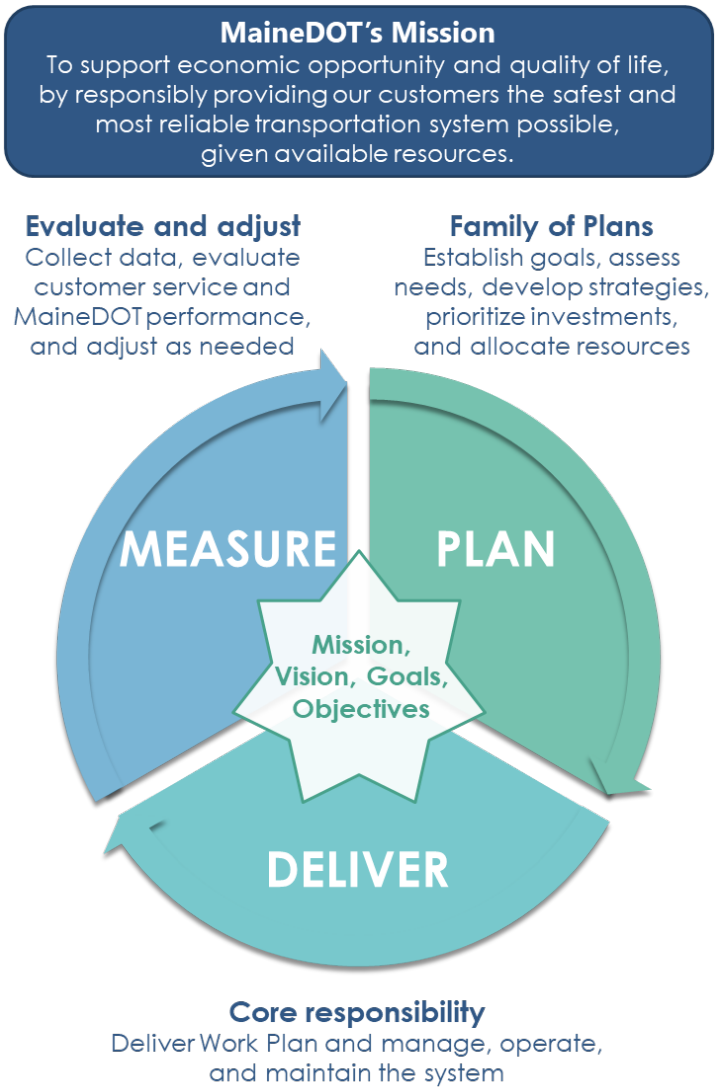
The *Long-Range Transportation* Plan (*LRTP*) is the Maine Department of Transportation's (MaineDOT's) overarching plan to communicate the vision for the transportation system and the strategies that MaineDOT and our partners plan to deliver throughout the next 20+ years. The *LRTP* helps MaineDOT, and our partners look forward, anticipating how continued changes in Maine's population, economy, and climate, as well as broader changes in transportation technologies and the movements of people and goods, will impact our transportation investment decisions.

1.1 MaineDOT's Performance Based Planning and Programming Process

Maine's *LRTP* is a policy document that lays out the framework to manage Maine's transportation system in all modes, support economic opportunity and quality of life, and build reliability and trust throughout the coming decades. The *LRTP* satisfies United States Department of Transportation (USDOT) requirements as specified in the Code of Federal Regulations (CFR), 23 CFR 450.216. The *LRTP* was developed consistent with federal and state requirements for consultation with partners, officials, and input from Maine citizens. Information on meeting federal requirements is in **Appendix A**.

As highlighted in Figure 1, the LRTP is a critical component of MaineDOT's performance-based planning and programming process. The *LRTP*, as well as the broader *Family of Plans*, shape investments that appear in MaineDOT's *Work Plan*[iii], which includes the work in the federal *Statewide Transportation Improvement Program*[iv] *(STIP)*. Decisions on these investments today and into the future support the *LRTP* goals, meet MaineDOT responsibilities, and address immediate needs while also seizing opportunities to manage the impacts of trends and potential disruptions.

Figure 1 MaineDOT's Performance Based Planning and Programming Process



MaineDOT's Response to Federal Requirements

The USDOT, in consultation with states, MPOs, and other stakeholders, established performance measures relevant to the national goals through a series of federal rulemakings. States, MPOs, and providers of public transportation must set performance targets for each measure, and then monitor performance and periodically report to USDOT on progress achieved toward meeting the targets.

Definitions

Performance measure: an expression based on a quantifiable indicator of performance that is used to establish targets and to assess progress toward meeting established targets.

Target: a quantifiable level of performance, expressed as a value for a measure, to be achieved within a time period.

System Performance Report Content

The MaineDOT's *Long-Range Transportation Plan System Performance Report* documents the performance measures and the statewide performance targets MaineDOT established for the following federal performance areas:

- Highway safety on all public roads
- Public transportation safety
- Condition of pavement and bridges on Maine's Interstates and non-Interstate NHS
- Condition of public transportation assets
- Reliability of passenger vehicle and truck travel on the Interstate and non-Interstate NHS
- Emission reductions in air quality nonattainment and maintenance areas

For each federal performance area, this report reviews baseline and recent performance, performance targets, and progress made toward achieving the targets. In connection with the *LRTP*, each performance measure is linked to both a *LRTP* goal at the start and finishes with a list of related *LRTP* strategies and the rationale behind that connection. The LRTP goals, objectives, and strategies are presented in **Figure 2**.

Figure 2 LRTP Goals, Objectives, and Strategies

GOALS	OBJECTIVES	STRATEGIES
Provide a safe transportation system for all users and modes of transportation	Reduce fatalities and serious injuries	Reduce crashes, fatalities, and serious injuries for all transportation users and promote safe and connected active transportation options
	Reduce crashes involving vulnerable users	
Effectively manage Maine's existing transportation system within reliable funding levels to provide levels of service that are acceptable to our customers	Maintain a state of good repair	Maintain and make targeted or strategic improvements to asset condition
	Improve system performance for customers	Enhance the overall travel experience for customers using Maine's highways
	Support and pilot innovation	Diversify and stabilize funding sources to enhance sustainability
	Leverage funding opportunities	Enhance the transportation system
		Improve the customer experience through technology
Invest in transportation initiatives that support economic opportunity for Maine people, communities, and businesses	Support job and economic growth	Improve freight connections, reliability, and efficiency
	Improve supply chain efficiency	Connect Maine to the world
	Expand the transportation workforce	Improve system mobility to grow the economy
	Expand connections to global economies	
Invest in practical transportation solutions that mitigate impacts on the natural world and prepare for the realities of climate change	Reduce greenhouse gas emissions	Position for an electric vehicle future
	Mitigate environmental impacts	Prepare for climate change
	Reduce disruptions	Lead by example
Ensure that all Maine people have access to safe and reliable transportation regardless of who you are or where you are	Improve access for all Mainers	Provide reliable and connected mobility solutions
	Reduce disparities in accessibility	Support communities across Maine
		Foster opportunities for flexible commuting

2.0 Highway and Public Transit Safety Performance

One of MaineDOT's transportation goals, as presented in the *LRTP*, is safe travel for all. This goal speaks to the high value placed on ensuring a safe transportation system for all users and modes of transportation. This section, per federal requirements, focuses on highway and public transit safety performance measures.

2.1 Highway Safety

Overview

FHWA established five highway safety performance measures to carry out the *Highway Safety Improvement Program*[v] (*HSIP*). The safety performance measures are:

1. Number of fatalities
2. Rate of fatalities per 100 million vehicle miles traveled
3. Number of serious injuries
4. Rate of serious injuries per 100 million vehicle miles traveled
5. Number of combined non-motorized fatalities and non-motorized serious injuries.

MaineDOT's *Strategic Highway Safety Plan*[vi] (*SHSP*) is updated every five years, most recently in 2022 (publication pending as of March 2023), which brings together safety stakeholders from across the state to strategically address Maine's safety concerns.

Performance Trends

Maine's statewide safety performance for 2017 through 2021 is presented in Table 1, along with safety targets for calendar year 2023. Performance is expressed as an annual five-year rolling average, which is the average of five individual, consecutive annual points of data. A five-year rolling average provides a smoothing effect for variations in safety data from year to year and helps to better evaluate performance over time.

Table 1 Highway Safety Performance and Targets

Performance Measure *(five-year average)*	2017	2018	2019	2020	2021	2021 Target	2022 Target	2023 Target
Fatalities	289.0	281.4	279.0	158.0	156.8	263.7	160.0	160.0
Fatality Rate	1.494	1.450	1.438	1.096	1.070	1.457	1.120	1.120
Serious Injuries	1,270.0	1,171.8	1,081.4	691.0	684.4	1,002.4	715.0	710.0
Serious Injury Rate	6.562	6.040	5.570	4.774	4.690	5.023	4.900	4.800
Non-Motorized Fatalities and Serious Injuries	94.8	97.0	97.2	81.8	80.0	86.2	87.0	85.0

As shown in **Table 1**, the five-year rolling average for all five highway safety measures decreased, showing consistent improvements in every safety measure between 2017 and 2021. Additionally, 2021 statewide performance met the 2021 statewide targets in each of the five highway safety measures.

All five highway safety data points improved from 2019 to 2020 due to COVID-19 pandemic stay-at-home orders leading to less vehicles on the road. However, the decreasing trends continued in 2021 even when travel behavior returned to near pre-pandemic levels.

Each year, FHWA completes an assessment of progress toward achieving prior year safety targets. FHWA determines that a state made significant progress toward its safety targets when at least four of the five targets were met, or the actual outcome was better than the baseline performance. Based on FHWA's review, Maine demonstrated significant progress toward achieving its safety targets in 2021.

2022 safety performance outcomes and 2024 targets are being reviewed as part of the annual process to submit targets within the *Highway Safety Plan*[vii] (*HSP*) and the *HSIP*. The *HSP* is submitted to the National Highway Traffic Safety Administration (NHTSA) by MaineDOT by June 30th each year. The *HSIP* is submitted to FHWA by August 31, 2023. These reports identify strategies and countermeasures to address safety challenges on Maine roads and also establish 2024 targets for the five FHWA required measures as well as a suite of 11 NHTSA required measures.

FHWA provides more information on Maine's safety trends and targets[viii] and HSIP reports[ix].

LRTP Strategies and Rationale

Supporting LRTP Strategy	Rationale for Helping Maine Advance Toward Goals and Targets
Reduce crashes, fatalities, and serious injuries for all transportation users and promote safe and connected active transportation options.	Future systemic and behavioral program investments consistent with this strategy will directly target safety factors in Maine contributing the fatal and serious injury crashes.
Enhance the overall experience for customers using Maine's highways.	A fundamental aspect of enhancing customers' experience on Maine's highways is to reduce risk of crashes that lead to injuries and fatalities through the 4Es – education, enhancement, emergency services, and engineering.
Support communities across Maine.	Investment in highway safety is part of supporting Maine communities by keeping all users (including residents and visitors) safe across the transportation system, particularly vulnerable populations.
Improve the customer experience through technology.	Intelligent transportation systems (ITS), which includes incident and traffic management, as well as other technologies, can improve emergency management and crash response and recovery times.
Diversify and stabilize funding sources to enhance sustainability.	Several federal funding sources, including new discretionary grants through the Safe Streets and Roads for All program, are available to improve highway safety at a statewide, regional, or local level.
Enhance the transportation system.	A primary goal in to enhancing the transportation system through innovative designs or traffic management improvements is first to always make the system safer for all users.
Improve freight connections, reliability, and efficiency.	Highway safety is essential to reliable and efficient freight movement, both for the safety and security of drivers and other road users and reduction of traffic delays.

2.2 Public Transit Safety

Overview

FTA's *Public Transportation Agency Safety Plan (PTSAP)* rule[x] requires certain operators of public transportation systems that receive federal financial assistance to develop and implement a *PTASP* based on a safety management systems approach. Development and implementation of *PTASPs* is anticipated to help ensure that public transportation systems are safe nationwide. Transit providers subject to the rule set targets in the *PTASP* annually based on the following safety performance measures established by FTA:

1. Total reportable fatalities and rate of reportable fatalities per 100,000 total annual vehicle revenue miles (VRM) by mode.
2. Total reportable injuries and rate of reportable injuries per 100,000 annual VRM by mode.
3. Total reportable safety events and rate of reportable events per 100,000 annual VRM by mode.
4. System reliability - Mean distance (VRM) between major mechanical failures by mode.

Providers initially were required to certify a *PTASP* and targets by July 20, 2020. However, on April 22, 2020, FTA extended the deadline to December 31, 2020, to provide regulatory flexibility due to the extraordinary operational challenges presented by the COVID-19 public health emergency. On December 11, 2020, FTA extended the *PTASP* deadline for a second time to July 20, 2021.

Performance Trends

Under the *PTASP* rule, a state will draft and certify a *PTASP* on behalf of any small transit provider (fewer than 101 vehicles in peak revenue service and does not operate rail) unless that provider develops its own plan. Four providers in Maine, within each of Maine's four urbanized areas, participated in the group PTASP - Lewiston Auburn Transit Committee (LATC), Biddeford-Saco-Old Orchard Beach Transit Committee (BSOOB Transit), Regional Transportation Program, Inc., (RTP) and York County Community Action Program (YCCAC). The performance targets for these four providers, based on five-year average data from the 2014-2018 National Transit Database reporting years, are provided in **Table 2**.

Table 2 MaineDOT Group PTASP Targets

Mode of Transit Service	Annual Fatalities	Fatality Rate	Annual Injuries	Injury Rate	Annual Safety Events	Safety Event Rate	System Reliability
Fixed or flex route bus (MB)	0.00	0.00	1.20	0.19	1.40	0.22	82,941
Demand response (DR)	0.00	0.00	0.20	0.02	0.20	0.02	20,873

LRTP Strategies

Supporting LRTP Strategy	Rationale for Helping Maine Advance Toward Goals and Targets
Reduce crashes, fatalities, and serious injuries for all transportation users and promote safe and connected active transportation options.	The safety of public transit users is a top priority. This is achieved through actions that prevent all crashes, particularly those leading to fatalities and injuries.
Enhance the overall experience for customers using Maine's highways.	Customer and driver safety is a priority for all transit vehicles operating on Maine highways.
Support communities across Maine.	Ensuring the safety of transit users in Maine, particularly due to the large customer base of vulnerable populations, is a key priority for supporting communities across Maine.
Prepare for climate change.	Ensuring public transit assets are resilient to climate change impacts will prevent safety incidents.
Improve the customer experience through technology.	Improved transit technology, such as signal priority and more advanced safety features on vehicles, make public transit both more efficient and safer.
Diversify and stabilize funding sources to enhance sustainability.	There are many opportunities to receive public transit funding, most of which will promote safer travel, at the federal, state, and regional level.
Enhance the transportation system.	Upgrading transit services and assets promotes safer transit trips, such as transitioning to new vehicles or providing more training for drivers.

3.0 Bridge, Pavement, and Transit Asset Condition Performance

The federal pavement, bridge, and transit asset condition performance measures are closely aligned with the *LRTP* goal of a well-managed system. Pavement and bridges in good condition do not require major investment, while those in poor condition will need substantial reconstruction or replacement. The transit asset management performance measures track the condition of transit vehicles, equipment, and facilities.

3.1 Bridge Condition

Overview

FHWA established two performance measures to assess bridge condition for the National Highway Performance Program:

1. Percent of NHS bridges by deck area classified as in good condition

2. Percent of NHS bridges by deck area classified as in poor condition

The Moving Ahead for Progress in the 21st Century (MAP-21) Act in 2012 required State Departments of Transportation to develop a *Transportation Asset Management Plan*[xi] (*TAMP*). The Infrastructure Investment and Jobs Act (IIJA) (Public Law 117-58, also known as the "Bipartisan Infrastructure Law") passed in 2021, added requirements around extreme weather and resilience as part of the life-cycle planning and risk management analyses within the *TAMP*. The *TAMP* evaluates and reports out Maine's NHS bridge conditions every four years. Additionally, MaineDOT's *Keeping our Bridges Safe Report*[xii] and annual *Work Plan*[xiii] report on bridge conditions and planned projects. In 2022, there were 3,819 highway bridges and minor bridges in Maine, 2,800 of which owned and maintained by MaineDOT. Over 61 percent of MaineDOT's bridges are more than 50 years old. However, this *System Performance Report* and the *TAMP* only evaluate bridges that are a part of the Maine NHS. In 2022, there were 311 interstate bridges and 219 non-interstate bridges as a part of the NHS. This means only about 19 percent of MaineDOT's bridges are tracked through the required Federal measures.

Maine collects and reports bridge condition data to FHWA each year through the National Bridge Inventory (NBI). This data is used to establish two-year and four-year targets and to track performance and progress toward the targets. Maine's current two-year and four-year targets represent bridge condition at the end of 2021.

To determine the percent of bridges in good or in poor condition, the sum of total deck area of good or poor NHS bridges is divided by the total deck area of bridges carrying the NHS. Deck area is computed using structure length and either deck width or approach roadway width. Good condition suggests that no major investment is needed. Bridges in poor condition are safe to drive on; however, they are nearing a point where substantial reconstruction or replacement is needed.

Table 3 presents statewide bridge performance for the 2017 baseline year and for 2018 through 2021 (the first performance period). In December 2022, MaineDOT submitted required reports to FHWA summarizing progress for 2018-2021 (the Full Performance Period Report) and targets for the next performance period, 2022-2025 (the Baseline Performance Period Report). **Table 3** shows the 2021, 2023, and 2025 statewide targets established by MaineDOT.

Performance Trends

Table 3 Bridge Condition Performance and Targets

Performance Measures	2017 (Baseline)	2018	2019	2020	2021	2021 Target	2023 Target	2025 Target
NBI Bridges on the NHS - Good Condition	29.4%	28.5%	27.2%	26.2%	25.3%	**30.0%**	**26.2%**	**27.5%**
NBI Bridges on the NHS - Poor Condition	5.4%	3.5%	4.1%	6.5%	7.1%	**4.0%**	**7.1%**	**5.5%**

As shown in **Table 3**, bridge conditions on the NHS generally declined between 2017 and 2021, with the percentage in good condition steadily decreasing and the percentage in poor condition increasing, apart from a decrease between 2017 and 2018. Bridge performance in 2021 did not meet the 2021 target for bridges in either good or poor condition. The 2023 and 2025 targets are overall lower than the 2021 targets, reflecting the current performance trend and the anticipated impacts of planned investments and asset management strategies noted in the Work plan and the TAMP.

As noted in the *TAMP*, one of the issues with this percentage-based performance measure is that there are several large bridges on the NHS in Maine that have a notable impact on statewide performance. This illustrates a sensitivity risk as large bridges can swing the percentage considerably. The *TAMP* also notes that in 2022, 47 percent of the poor deck area is currently under construction and another 44 percent is funded for construction and currently in design.

LRTP Strategies

Supporting LRTP Strategy	Rationale for Helping Maine Advance Toward Goals and Targets
Reduce crashes, fatalities, and serious injuries for all transportation users and promote safe and connected active transportation options.	Poor bridge conditions can become a hazard to users by increasing the potential for crashes. Improved bridges are more reliable during severe weather events.
Maintain and make targeted or strategic improvements to asset condition.	Bridge maintenance, rehabilitation, and replacements are critical functions of MaineDOTs overall responsibility to maintain its assets.
Enhance the overall experience for customers using Maine's highways.	Poor bridge conditions can be detrimental to customer experience, with the potential to contribute to hazardous driving conditions.
Prepare for climate change.	Increased extreme weather events and rising water levels will cause more wear to bridges, leading to more maintenance. Bridge rehabilitation and replacement projects should include design solutions to better prepare for and mitigate climate change impacts.
Improve the customer experience through technology.	New materials and construction practices can result in more sustainable and cost-effective improvements to bridge condition.
Enhance the transportation system.	Bridges in good condition are a key element to a high-quality transportation system.
Improve freight connections, reliability, and efficiency.	Open bridges in good condition are necessary for efficient and reliable freight movement, maintaining key connections particularly to rural or isolated communities.
Connect Maine to the world.	Bridges in good condition ensure that critical passenger and freight connections to neighboring states and provinces remain open and efficient.

3.2 Pavement Condition

Overview

FHWA established four performance measures to assess pavement condition for the National Highway Performance Program:

1. Percent of Interstate pavements in good condition

2. Percent of Interstate pavements in poor condition

3. Percent of non-Interstate National Highway System (NHS) pavements in good condition

4. Percent of non-Interstate NHS pavements in poor condition

The pavement condition measures represent the percentage of lane-miles on the Interstate or non-Interstate NHS that are in good, fair, and poor condition based on an assessment of roughness and cracking, rutting, faulting, or serviceability. In addition to reporting bridge conditions, the *TAMP* evaluates and reports Maine's NHS pavement conditions on a recurring four-year basis and the annual *Work Plan* outlines the planned projects for the next three calendar years, including pavement resurfacing.

Maine's NHS is made up of highway owned by both MaineDOT and Maine Turnpike Authority. In total, the Maine NHS is 1,693 centerline miles in length comprised of 43 percent interstate, each direction of interstate counted separately. MaineDOT is the owner of 87 percent of the system. MaineDOT owns 1,017 lane miles of interstate and 1,991 lane miles of non-Interstate NHS.

Maine collects and reports pavement condition data to FHWA each year through the Highway Performance Monitoring System (HPMS). This data is used to establish two-year and four-year targets and to track performance and progress toward the targets. Maine's current two-year and four-year targets represent expected pavement condition at the end of 2021 as presented in **Table 4**.

Performance Trends

Table 4 Pavement Condition Performance and Targets

Performance Measures	2017 (Baseline)	2018	2019	2020	2021	2021 Target	2023 Target	2025 Target
Interstate Pavement - Good Condition	36.3%	9.4%	26.1%	20.1%	31.1%	**40.0%**	**28.0%**	**32.0%**
Interstate Pavement - Poor Condition	1.2%	0.6%	0.9%	0.9%	0.2%	**1.5%**	**1.5%**	**1.5%**
Non-Interstate NHS Pavement - Good Condition	31.2%		38.2%	42.8%	42.9%	**34.0%**	**40.0%**	**40.0%**
Non-Interstate NHS Pavement - Poor Condition	5.5%		7.1%	5.4%	5.2%	**5.0%**	**6.2%**	**7.5%**

As shown in **Table 4**, pavement condition on the Interstate system had mixed results between 2017 and 2021, as MaineDOT continued to refine and improve its asset management practices.

On the Interstate system, Interstate pavement in good condition did not meet the 2021 target and was below the 2017 baseline condition. Interstate pavement in poor condition steadily declined through 2021, reaching a low point of 0.2 percent (a good indicator of MaineDOT and MTA commitment to proactively addressing poor pavement on the Interstate system).

On the non-Interstate NHS, the overall results were positive, with the percentage of pavement in good condition increasing and the pavement in poor condition initially increasing and then going back to slightly lower than 2017 performance. While the non-Interstate NHS pavement in good condition exceeded the 2021 target, the non-Interstate NHS pavement in poor condition is just above the 2021 target by 0.2 percent. Non-Interstate NHS pavement conditions were not available for 2018.

LRTP Strategies

Supporting LRTP Strategy	Rationale for Helping Maine Advance Toward Goals and Targets
Reduce crashes, fatalities, and serious injuries for all transportation users and promote safe and connected active transportation options.	Poorly rated pavement can create dangerous driving conditions that lead to increased chances of a crash occurring.
Maintain and make targeted or strategic improvements to asset condition.	A main focus on maintaining transportation asset conditions is pavement maintenance.

Supporting LRTP Strategy	Rationale for Helping Maine Advance Toward Goals and Targets
Enhance the overall experience for customers using Maine's highways.	Poor pavement conditions can be detrimental to customer experience on highways, with the potential to be hazardous and damage vehicles.
Prepare for climate change.	Increased extreme weather events will cause more wear to pavement, leading to more maintenance required.
Enhance the transportation system.	Good pavement condition is key element to a high-quality transportation system.

3.3 Transit Asset Condition

Overview

FTA requires that public transportation providers that receive federal transit funding develop and implement *Transit Asset Management (TAM)* plans[xiv] to maintain transit assets in a state of good repair (SGR). FTA created *TAM* performance measures for four asset categories:

1. Rolling Stock: percent of revenue vehicles exceeding useful life benchmark (ULB)
2. Equipment: percent of non-revenue service vehicles exceeding ULB
3. Facilities: percent of facilities rated under 3.0 on FTA's Transit Economic Requirements (TERM) scale
4. Infrastructure: percent of track segments under performance restrictions

Useful life benchmark (ULB) is defined as the expected lifecycle of a capital asset, or the acceptable period of use in service, for a particular transit provider's operating environment.

FTA defines two tiers of public transportation providers for *TAM* purposes and categorizes providers based on size parameters. Tier I providers are those that operate rail service or more than 100 vehicles in all fixed route modes, or more than 100 vehicles in one non-fixed route mode. Tier II providers are those that are a subrecipient of FTA 5311 funds, or an American Indian Tribe, or have 100 or less vehicles across all fixed route modes or have 100 vehicles or less in one nob-fixed route mode.

A Tier I provider must establish its own *TAM Plan* and transit asset targets. A Tier II provider has the option to establish its own *TAM Plan* and targets, or to participate in a *Group TAM Plan* with other Tier II providers. A plan sponsor, typically a state DOT, develops a group plan for Tier II providers.

Published in 2018 and revised in 2022, MaineDOT developed a *TAM Group Plan for Rural Transit Providers*[xxi] on behalf of the participating 13 Tier II providers in the State**.** *The Group Plan* guides MaineDOT and the participating providers in operating, maintaining, upgrading, and replacing public transportation capital assets effectively through the lifecycle of the assets in order to provide safe and reliable public transportation services. The *Group Plan* functions as a decision support tool to assist MaineDOT and transit providers to plan more strategically and efficiently in the use of all available transit funds.

The Group Plan includes performance targets for each applicable asset class as well as a list of the participating providers. Group Plan targets are updated annually. **Table 5** presents the 2022 *Group TAM Plan* targets for Maine's Tier II providers and 2021 performance and number of vehicles for each asset category. Additionally, 2018 performance is included where available.

Two other plans in MaineDOT's Family of Plans, the *Maine State Rail Plan* and *Maine State Transit Plan*, consider the management of public transit assets, such as passenger rail and local transit systems.

Performance Trends

Table 5 Maine TAM Plan Targets and Performance

Asset	Actual Performance SGR % (2018)	Actual Performance 2021 Vehicles	Actual Performance SGR % (2021)	2022 Vehicle Targets	2022 SGR % Targets
Rolling Stock – Percent in State of Good Repair					
Van	59%	114	69%	114	80%
LDB	87%	109	95%	111	95%
SMDB	85%	78	72%	76	72%
MHDB	100%	30	100%	30	100%
SHDB	100%	2	100%	6	100%
FERRY MSFS	0.94	7	85%	7	85%
FERRY IAHBS	100%	2	100%	2	100%
Equipment – Percent in State of Good Repair					
Service Auto	100%	1	0%	1	0%
Service Truck		4	75%	4	75%
Service - Rescue Boats		6	100%	6	100%

Asset	Actual Performance SGR % (2018)	Actual Performance 2021 Vehicles	Actual Performance SGR % (2021)	2022 Vehicle Targets	2022 SGR % Targets
Facilities – Percent in State of Good Repair					
Admin & Maintenance Facility	100%	3	100%	**4**	**100%**
Admin Office/Sales Office	100%	1	100%	**1**	**100%**
Pier	40%	7	63%	**7**	**75%**
Terminal	86%	7	86%	**7**	**86%**
Parking Lot	100%	1	100%	**1**	**100%**
Bridge	80%	10	80%	**10**	**80%**
General Purpose Maintenance Facility/Depo		1	100%	**1**	**100%**

As shown in **Table 5**, 2022 SGR percentage targets for most of the asset categories were met in 2021, while two targets (vans and piers) were not met. The same goes for vehicle targets, with only light-duty bus (LDB), standard heavy-duty bus (SHDB), and combined administration and maintenance facilities under target. The 2022 targets reflect expected asset condition based on available funding and maintenance during the current year. Maine will update the *Group TAM Plan* at least once every four years and will continue to establish annual performance targets.

More information on transit asset data and other transit performance data[xvi] are available through the FTA.

LRTP Strategies

Supporting LRTP Strategy	Rationale for Helping Maine Advance Toward Goals and Targets
Reduce crashes, fatalities, and serious injuries for all transportation users and promote safe and connected active transportation options.	Poor transit asset conditions can be hazardous, leading to increased chances of crashes or injuries.
Maintain and make targeted or strategic improvements to asset condition.	Transit assets must be maintained and improved overtime.
Provide reliable and connected mobility solutions.	In order for transit to provide reliable transportation access to users, assets need to be in good condition.
Support communities across Maine.	Providing quality transit supports communities across Maine by making services, job opportunities, healthcare and more accessible.

Supporting LRTP Strategy	Rationale for Helping Maine Advance Toward Goals and Targets
Foster opportunities for flexible commuting.	A variety of quality transit options allows commuters to choose the mode that meets their needs best.
Prepare for climate change.	Transit assets will experience more wear and maintenance needs as more extreme weather events occur due to climate change.
Improve the customer experience through technology.	Transit assets conditions can be improved by technologies in materials and construction for facilities and engineering and repairs for vehicles and equipment.
Diversify and stabilize funding sources to enhance sustainability.	Funding can be leveraged for transit asset maintenance and management, including for upgrading fleets and facilities to lower emissions.
Enhance the transportation system.	A transit program with assets in good condition is an integral part of a quality transportation system.

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4.0 System Performance – Reliability, Freight, and Emissions

The highway system performance measures track the reliability of passenger and freight travel, as well as highway congestion and emissions in areas that are nonattainment or maintenance areas for national air quality standards. These performance measures relate to all of the goals in the *LRTP*, but most specifically **equitable access**, **a vibrant economy and world-class quality of life**, and **environmentally sustainable transportation system**.

4.1 Travel Time Reliability

Overview

FHWA established two measures to assess performance of the National Highway System:

1. Percent of person-miles on the Interstate system that are reliable

2. Percent of person-miles on the non-Interstate NHS that are reliable

The first two performance measures assess the reliability of travel time on the Interstate and non-Interstate NHS. Reliability is a measurement of how much travel times on a given route differ from day to day. Travel is reliable when the time it takes to travel along a corridor or system is usually consistent from day to day for similar time periods, whereas unreliable travel is when trips more frequently experience unusually long travel times, usually due to non-recurring bottlenecks, crashes and other incidents, or weather. In Maine, a road is considered reliable if 80 percent of all vehicle travel times are less than one-and-a-half times greater than the average travel time on that road. These two measures are expressed in person-miles, which considers the number of people traveling in vehicles on these roads. A higher percentage for these measures means better performance.

Maine's FHWA State Highway Reliability Report[xvii] provides more information on the State's reliability performance trends and targets.

Performance Trends

Table 6 Travel Time Reliability Performance and Targets

Performance Measures	2017 (Baseline)	2018	2019	2020	2021	2021 Target	2023 Target	2025 Target
% Person Miles Traveled in Reliable Conditions - Interstate	100.0%	100.0%	100.0%	100.0%	100.0%	**95.0%**	**95.0%**	**95.0%**
% Person Miles Traveled in Reliable Conditions - Non-Interstate NHS	91.3%	91.5%	91.5%	94.9%	93.1%	**90.0%**	**90.0%**	**90.0%**

As shown in **Table 6**, the percent of person-miles traveled (PMT) in reliable conditions has remained stable and high throughout the performance period across the entire Interstate and non-Interstate NHS in Maine. Maine continues to exceed reliability goals on the NHS, including 100 percent reliable Interstate PMT since 2017, and 93.1 percent reliable non-Interstate PMT. The State experienced a slight decline in the statewide percent of PMT on non-Interstate NHS that are reliable, decreasing from 94.9 percent reliable in 2020 to 93.1 percent reliable in 2021. **Table 7** presents the MPO reliability trends. For the non-Interstate NHS measure, both ATRC and PACTS did not attain the 2021 statewide target.

Table 7 MPO Travel Time Reliability Performance and Targets

Performance Measures	2017 (Baseline)	2018	2019	2020	2021	2021 Target	2023 Target	2025 Target
% Person Miles Traveled in Reliable Conditions - Interstate								
ATRC	100.0%	100.0%	100.0%	100.0%	100.0%	**95.0%**	**Pending** (under review by MPOs through June 2023)	
BACTS	100.0%	100.0%	99.5%	100.0%	100.0%	**95.0%**		
KACTS	100.0%	100.0%	100.0%	100.0%	100.0%	**95.0%**		
PACTS	100.0%	100.0%	100.0%	100.0%	99.9%	**95.0%**		
% Person Miles Traveled in Reliable Conditions - Non-Interstate NHS								
ATRC	94.9%	93.5%	91.6%	92.7%	86.9%	**90.0%**	**Pending** (under review by MPOs through June 2023)	
BACTS	92.0%	85.5%	91.1%	91.2%	90.0%	**90.0%**		
KACTS	86.9%	87.6%	96.1%	98.4%	95.0%	**90.0%**		
PACTS	77.6%	76.4%	82.4%	88.2%	82.5%	**90.0%**		

LRTP Strategies

Supporting LRTP Strategy	Rationale for Helping Maine Advance Toward Goals and Targets
Reduce crashes, fatalities, and serious injuries for all transportation users and promote safe and connected active transportation options.	Traffic incidents cause traffic delays and reduce NHS reliability.
Maintain and make targeted or strategic improvements to asset condition.	Work zones for asset maintenance and capacity overall reduce reliability on the NHS. However, if strategically managed, they can increase longer term reliability.
Enhance the overall experience for customers using Maine's highways.	A key aspect to a good experience for customers on the NHS is reliability.
Provide reliable and connected mobility solutions.	Improvements to multimodal systems, particularly transit systems, can help shift single-occupancy vehicle trips and reduce vehicles on the road, therefore improving NHS reliability.
Improve the customer experience through technology.	Technology can increase reliability on the NHS, including through traffic monitoring and management.
Enhance the transportation system.	Increasing reliability on the NHS is a key goal to making improvements to enhance the NHS

4.2 Freight Movement

Overview

FHWA established one measure to assess performance of the freight movement on the Interstate system:

1. Truck Travel Time Reliability Index (TTTR)

The freight movement performance measure assesses reliability for trucks traveling on the Interstate system. A TTTR index is generated based on the ratio of actual truck travel times to normal travel times. A lower TTTR value means better performance, i.e., more reliable truck travel.

Performance Trends

Table 8 Freight Movement Performance and Targets

Performance Measures	2017 (Baseline)	2018	2019	2020	2021	2021 Target	2023 Target	2025 Target
Truck Travel Time Reliability Index (Interstates)	1.23	1.24	1.27	1.20	1.24	**1.50**	**1.40**	**1.40**

Truck travel on the Maine Interstate system is also generally reliable as presented in **Table 8**. Since 2017, the TTTR index increased slightly and decreased slightly. Given the recovery in traffic in 2021 after decreased volumes in 2020 due to the COVID-19 pandemic, it is not surprising that there was a small increase from 1.20 in 2020 to 1.24 in 2021. However, TTTR stayed under the 2021, 2023 and 2025 targets since 2017. **Table 9** presents the MPO truck travel time reliability trends.

Table 9 MPO Truck Travel Time Reliability Performance and Targets

Performance Measures	2017 (Baseline)	2018	2019	2020	2021	2021 Target	2023 Target	2025 Target
Truck Travel Time Reliability Index (Interstates)								
ATRC	1.22	1.20	1.23	1.21	1.20	**1.50**	**Pending** (under review by MPOs through June 2023)	
BACTS	1.26	1.29	1.31	1.28	1.32	**1.50**		
KACTS	1.47	1.30	1.50	1.26	1.41	**1.50**		
PACTS	1.30	1.28	1.31	1.19	1.25	**1.50**		

MaineDOT's Office of Freight and Passenger Services (OFPS) last published their *Integrated Freight Strategy*[xviii] in 2017 and is updating this plan, as a part of the Family of Plans, in 2023.

LRTP Strategies

Supporting LRTP Strategy	Rationale for Helping Maine Advance Toward Goals and Targets
Reduce crashes, fatalities, and serious injuries for all transportation users and promote safe and connected active transportation options.	Traffic incidents cause traffic delays and reduce Interstate reliability.
Maintain and make targeted or strategic improvements to asset condition.	Work zones for Interstate asset maintenance and capacity overall reduce truck travel time reliability. However, if strategically managed, they can increase longer term reliability.

Supporting LRTP Strategy	Rationale for Helping Maine Advance Toward Goals and Targets
Enhance the overall experience for customers using Maine's highways.	Strategic investments in Maine's Interstates increases truck travel efficiency, allowing for more products to move quicker, enhancing Maine's economic vitality.
Improve the customer experience through technology.	Technology can increase reliability on truck routes, including through traffic and weather monitoring and management.
Enhance the transportation system.	Making improvements to enhance operations on Interstate highways and bridges will increase truck travel time reliability.
Improve freight connections, reliability, and efficiency.	Truck travel time reliability is a key part of freight reliability and efficiency.
Connect Maine to the world.	Expanding freight connections requires efficient, reliable infrastructure.
Improve system mobility to grow the economy.	Economic development is fostered when reliable freight connections are made.

4.3 Congestion Mitigation and Air Quality

Overview

FHWA established three measures to assess performance of the Congestion Mitigation and Air Quality Improvement (CMAQ) Program:

1. Annual hours of peak hour excessive delay per capita (PHED)
2. Percent of non-single occupant vehicle travel (non-SOV)
3. Cumulative two-year and four-year reduction of on-road mobile source emissions for CMAQ funded projects (CMAQ Emission Reduction)

The CMAQ Emission Reduction measure assesses performance of the CMAQ Program through measurement of total cumulative reductions of on-road mobile source PM2.5 and PM10 emissions resulting from CMAQ funded projects in applicable regions in Maine managed under the Clean Air Act national ambient air quality standards.

The PHED measure quantifies the hours of delay resulting from excessive traffic congestion on the NHS during peak travel times, on a per capita basis. The non-SOV travel measure quantifies the percent of travel that occurs by any mode other than driving alone in a motorized vehicle. Currently, these two measures apply

only in areas that have a population of more than one million people and are nonattainment or maintenance with National air quality standards. These measures do not currently apply in Maine.

LRTP Strategies

Congestion Mitigation and Air Quality performance measures are currently not applicable in Maine (consistent with definitions and applicability made available by FHWA here[xix]), therefore, this report does not present performance trends and targets. However, Maine DOT is committed to actions to reduce transportation's impact on Maine's natural environment and contribution to climate change, through goals, objectives, and strategies identified in the *LRTP*.

LRTP Strategies

Supporting LRTP Strategy	Rationale for Helping Maine Advance Toward Overall Environmental and Climate Change Goals
Position for an electric vehicle future.	MaineDOT will support Maine's transition to electric vehicles through Direct Current Fast Charging (DCFC) access on designated Alternative Fuel Corridors (AFC), DCFC/Level 2 access at important statewide and unique community destinations, equitable access in key corridors and destinations in rural regions, support of e-bikes and other personal electric mobility devices, and public education about EVs.
Prepare for climate change.	By assessing the vulnerability of infrastructure to climate change and advancing system resilience and recovery through new design standards, hardened infrastructure investments, and improved emergency operations and communications, Maine's transportation system will be better prepared to adapt and recover.
Lead by example.	MaineDOT will "Lead by Example" through protecting and preserving Maine's natural environment, prioritizing energy efficiency initiatives in facilities and clean energy use, using climate-friendly materials and products, purchasing zero-emission fleet vehicles, and supporting and incentivizing low and zero-emissions transit fleets. These actions leverage federal funding programs like CMAQ, and new programs included in the Bipartisan Infrastructure Law like PROTECT, NEVI, and Carbon Reduction, to advance these strategies.

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Endnotes and Links

[i] Code of Federal Regulations: https://www.ecfr.gov/current/title-23/chapter-I/subchapter-E/part-450#p-450.216(f)
[ii] MaineDOT *Statewide Transportation Improvement Plan*: https://www.maine.gov/mdot/stip/
[iii] MaineDOT *Work Plan*: https://www.maine.gov/mdot/projects/workplan/
[iv] MaineDOT *Statewide Transportation Improvement Plan*: https://www.maine.gov/mdot/stip/
[v] *Maine Highway Safety Improvement Plan:* https://www.nhtsa.gov/sites/nhtsa.gov/files/2021-10/ME_FY22_HSP%20FINAL%20V2%20%28002%29.pdf
[vi] Maine *Strategic Highway Safety Plan:* https://www.maine.gov/mdot/safety/docs/Strategic-Highway-Safety-Plan_2017.pdf
[vii] *Maine Highway Safety Plan:* https://www.nhtsa.gov/sites/nhtsa.gov/files/documents/me_fy21_hsp_.pdf
[viii] Maine State Highway Safety Report (2021), FHWA: https://www.fhwa.dot.gov/tpm/reporting/state/safety.cfm?state=Maine
[ix] Highway Safety Improvement Program (HSIP), FHWA: https://safety.fhwa.dot.gov/hsip/reports/
[x] Public Transportation Agency Safety Plans, FTA: https://www.transit.dot.gov/PTASP
[xi] MaineDOT *Transportation Asset Management Plan*: https://www.maine.gov/mdot/publications/docs/plansreports/MaineDOT-Transportation-Asset-Management-Plan-final.pdf
[xii] MaineDOT *Keeping Our Bridges Safe Report*: https://www.maine.gov/mdot/env/documents/fjwepr/ea/2019/Appendix-8-Keeping-of-Bridges-Safe-Report,-2014.pdf
[xiii] MaineDOT *Work Plan*: https://www.maine.gov/mdot/projects/workplan/docs/2023/WORK PLAN FINAL 2023_2024_2025-3.pdf
[xiv] Transit Asset Management (TAM) plans, FTA: https://www.transit.dot.gov/TAM/TAMPlans
[xv] MaineDOT *Tier II Transit Asset Management Plan*: https://www.maine.gov/mdot/transit/docs/tam/2022/1-ME TAM Plan 2018 (Revised October 2022) - Final.pdf
[xvi] National Transit Database, FTA: https://www.transit.dot.gov/ntd
[xvii] Maine's State Highway Reliability Report, FHWA: https://www.fhwa.dot.gov/tpm/reporting/state/reliability.cfm?state=Maine
[xviii] MaineDOT *Integrated Freight Strategy*: https://www.maine.gov/mdot/ofps/docs/MaineDOT-FreightStrategy-Updt20171114.pdf
[xix] TPM CMAQ Applicability Tables, FHWA: https://www.fhwa.dot.gov/environment/air_quality/cmaq/measures/cmaq_applicability/index.cfm

Working to Move Maine: MaineDOT's Long-Range Transportation Plan – Family of Plans Engagement Summary

Prepared by

Maine Department of Transportation

date

March 2023

1.0 Federal Requirements Overview

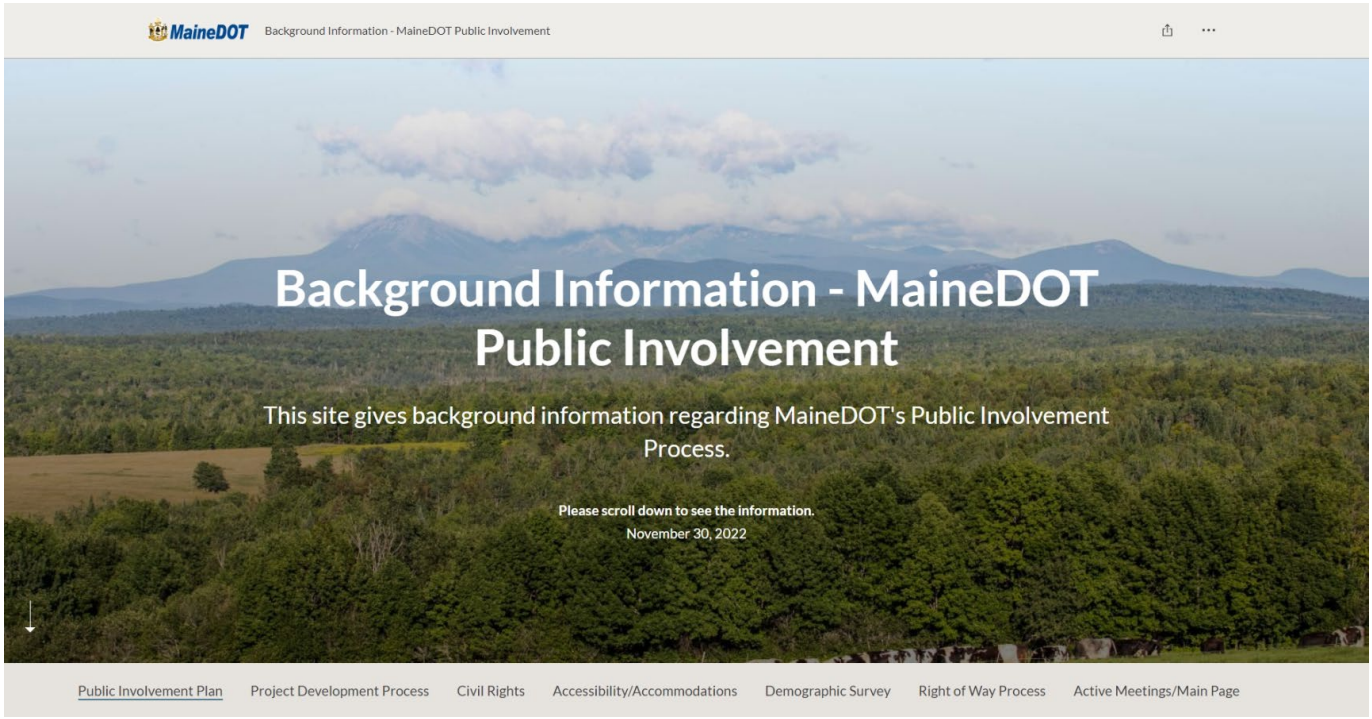
The *Long-Range Transportation* Plan (*LRTP*) is the Maine Department of Transportation's (MaineDOT's) overarching plan to communicate the vision for the transportation system and the strategies that MaineDOT and our partners plan to deliver throughout the next 20+ years.

The *LRTP* satisfies United States Department of Transportation (USDOT) requirements as specified in the Code of Federal Regulations (CFR), 23 CFR 450.216.[i] Provisions of the United States Code (U.S.C.), including 23 U.S.C. 135, 23 U.S.C. 150, and 49 U.S.C. 5304, as amended, require MaineDOT to:

> "carry out a continuing, cooperative, and comprehensive performance-based statewide multimodal transportation planning process… that facilitates the safe and efficient management, operation, and development of surface transportation systems that will serve the mobility needs of people and freight… and that fosters economic growth and development…."[ii]

The *LRTP* was developed consistent with federal and state requirements for consultation with partners, officials, and input from Maine citizens. The following information summarizes the full scope of meetings and other engagement activities conducted by MaineDOT in support of the *LRTP*, *Rail Plan*, *Transit Plan*, and *Active Transportation Plan* during 2022.

The overall outreach approach was conducted consistent with MaineDOTs Public Involvement Process. More information on the Public Involvement Process is available here.[iii]



2.0 Family of Plans Public Meetings

Four virtual public meetings were held during spring 2022 to introduce Maine citizens to the Family of Plans, share information and planning outcomes, and seek input and answer questions. 476 total persons engaged with MaineDOT representatives across these four virtual public meetings.

- March 15, 2022
  - 155 participants
- April 6, 2022
  - 133 participants
- May 4, 2022
  - 143 participants
- June 7, 2022
  - 45 participants

MaineDOT developed an online portal for the public to engage with the Family of Plans, including viewing presentations from each public meeting, and provide online comments. Over 400 (est. 418) total comments were received and reviewed by MaineDOT staff. A full printout of all public comments on the Family of Plans received through the online MaineDOT Public Involvement Management Application (PIMA) website can be downloaded here: https://uploads.mainedotpima.com/b2ac8285-1ba2-4a0e-8d6a-e50f4b688024.docx

3.0 Long-Range Transportation Plan

- **Stakeholder meetings** – MaineDOT held in-person and virtual meetings throughout the *LRTP* development process with key planning partners including Maine's four Metropolitan Planning Organizations (MPOs), representatives from Rural Planning Organizations (RPOs), representatives from Tribes and Nations, and with state agency and organization partners.
  - January 19, 2022: Portland Area Comprehensive Transportation System (PACTS)
  - January 20, 2022: Bangor Area Comprehensive Transportation System (BACTS)
  - January 21, 2022: Androscoggin Valley Council of Governments (ATRC)
  - January 21, 2022: Regional Planning Organizations (RPOs)
  - January 25, 2022: Kittery Area Comprehensive Transportation System (KACTS)

- January 25, 2022: Mi'kmaq Nation
- January 31, 2022: Houlton Band of Maliseet Indians
- February 3, 2022: Passamaquoddy Tribe at Motahkomikuk
- February 7, 2022: Penobscot Nation
- February 18, 2022: Maine Turnpike Authority
- February 28, 2022: Natural Resources Council of Maine
- June 6, 2022: Metropolitan Planning Organizations (MPOs)
- June 23, 2022: Tribes and Nations
- June 24, 2022: RPOs
- November 17, 2022: Policy Action 2023 Working Groups
- December 19, 2022: MPOs & RPOs
- December 24, 2023: Tribes and Nations

- **LRTP Survey** – To supplement interaction with the *LRTP* planning process through the Family of Plans Public Meetings, Maine DOT released a public survey seeking input on goals and objectives, needs, and solutions. The survey was open May 4-31, 2022 and received 397 responses, with key findings summarized in the *LRTP* report. Attachment A to this Appendix C provides a summary of the LRTP Survey results.

  Additional comments on draft *LRTP* were also received by email (outside of PIMA). This included direct feedback from:

  - Greater Portland Council of Governments (GPCOG)/PACTS
  - Southern Maine Planning and Development Commission (SMPDC)
  - Conservation Law Foundation

4.0 Active Transportation Plan

- Stakeholder meetings: MaineDOT held 16 total in-person and virtual meetings throughout the *Active Transportation Plan* development process with key planning partners, organizations, and advocacy groups.
  - March 21, 2022: Environmental groups
    - Sierra Club of Maine
    - Maine Bureau of Parks and Lands
    - Center for an Ecology-Based Economy

- Maine Conservation Voters
- Natural Resources Council of Maine
- Maine Environmental Education Association
- AMC
- Nature Conservancy of Maine

» March 21, 2022: Smart-growth organizations

- Town of Cape Elizabeth
- Maine Municipal Association
- Maine Association of Planners
- Build Maine

» March 21, 2022: Staff and board members from the Bicycle Coalition of Maine (BCM)

» March 30, 2022: Trail advocates

- Down East Sunrise Trail Coalition
- Eastern Trail Alliance
- Casco Bay Trail Alliance
- East Coast Greenway
- Maine Trail Coalition
- Maine Office of Tourism
- Maine Bureau of Parks and Lands
- New England Mountain Bike Association

» April 20, 2022: Metropolitan and Regional Planning Organizations (MPOs and RPOs)

- Sunrise County Economic Council
- Northern Maine Development Commission
- Southern Maine Planning and Development Commission (SMPDC)
- Androscoggin Valley Council of Governments/ATRC
- BACTS
- Greater Portland Council of Governments/PACTS

» April 26, 2022: Age-friendly and disability-rights advocates

- Seniors Plus
- University of Maine
- Disability Rights Maine
- Eastern Area Agency on Aging
- Statewide Independent Living Council
- Maine Developmental Disabilities Council
- Office of Aging and Disability Services, Maine DHHS
- Moving Maine Network

  - Spectrum Generations
  - Aging and Disability Resource Center
  - Maine Center for Independent Living
  - AARP Maine

- May 2, 2022: Tribes and Nations
  - Houlton Band of Maliseet Indians
  - Mi'kmaq Nation
  - Passamaquoddy Tribe at Motahkomikuk
  - Penobscot Nation
- May 16, 2022: Organizations supporting people experiencing homelessness
  - Community Housing of Maine
  - Milestone Recovery
- May 18, 2022: Public health and safety organizations
  - Maine Public Health Association
  - Saco Police Department
- Maine Department of Education
  - Maine Health
  - Healthy Oxford Hills & Oxford County Health Collaborative
  - Cape Elizabeth Police Department
- May 25, 2022: Maine Statewide Independent Living Council (SILC)
- May 25, 2022: Pedestrian or bicycle advisory committees
  - York
  - Augusta
  - Saco
  - Bath
  - Portland
  - Yarmouth
  - Lewiston
  - Auburn
  - Waterville
  - Kittery
  - Westbrook
  - Sanford
  - Brunswick
- June 13, 2022: Maine Justice Foundation

» January 9, 2023: feedback on draft plan

- Appalachian Mountain Club
- Bicycle Coalition of Maine
- Casco Bay Trail Alliance
- City of Saco
- Cycle Sanford
- Down East Sunrise Trail
- East Coast Greenway Alliance
- Houlton Band of Maliseet Indians
- Maine Office of Tourism
- Maine State Legislature
- Northern Maine Development Commission
- Portland Velo Club
- SMPDC

» January 13, 2023: feedback on draft plan

- AARP Maine
- BACTS
- Bicycle Coalition of Maine
- Casco Bay Trail Alliance
- Disability Rights Maine
- GPCOG
- Maine Department of Education
- Maine Office of Tourism
- Natural Resources Council of Maine
- New England Mountain Bike Association
- SMPDC

» January 19, 2023: feedback on draft plan

- Bicycle Coalition of Maine
- Casco Bay Trail Alliance
- Dennysville Snowmobile and ATV Club
- Down East Sunrise Trail
- East Coast Greenway Alliance
- Eastern Trail Alliance/Eastern Trail Management District
- Merrymeeting Trail
- Mountain Division Alliance

» January 25, 2023: presentation on the draft plan to the Portland Downtown Multimodal Transportation Committee (at their request)

- **Active Transportation Plan Survey** - To supplement interaction with the *Active Transportation Plan* planning process through the Family of Plans Public Meetings, Maine DOT released a public survey seeking input on goals and objectives, needs, and solutions. The survey was open April 1-May 16, 2022 and received 1,667 responses, with key findings summarized in the *Active Transportation Plan* report.

  Additional comments on draft *Active Transportation Plan* were also received by email (outside of PIMA). This included direct feedback from:

  - East Coast Greenway Alliance
  - GPCOG/PACTS
  - SMPDC
  - Natural Resources Council of Maine
  - Several members of the public

5.0 Transit Plan

- **Stakeholder meetings:** MaineDOT held 10 total in-person and virtual meetings throughout the *Transit Plan* development process with key planning partners, organizations, and advocacy groups.
  - DHHS – December 6, 2021
  - GO MAINE – December 7, 2021
  - Moving Maine Network – December 12, 2021
  - Maine Council on Aging/Volunteer Networks – December 15, 2021
  - Public Transit Advisory Council – August 15, 2022
  - Interagency Working Group on Transit, January 12, 2023
  - Maine Transit Association, January 18, 2023
  - Moving Maine Network, January 18, 2023
  - In-Person Stakeholder Meeting, January 27, 2023
  - Public Transit Advisory Council, January 25, 2023

- **Steering Committee:** MaineDOT convened a Transit Plan Steering Committee providing direction and insight to the planning process.
  - Meetings
    - March 28, 2022
    - June 2, 2022

    - August 3, 2022
    - January 25, 2023
  - Members
    - Sandy Buchanan, Western Maine Transportation Services
    - Josh Caldwell, Natural Resources Council of Maine
    - Andrew Clark, PACTS
    - Sara Devlin, BACTS
    - Samantha Dina, Maine DOL
    - Dave Dionne, Aroostook Regional Transportation System
    - Chad Heid, Biddeford Saco Old Orcharch Beach Transit
    - Jess Maurer, Maine Council on Aging
    - Greg Payne, GOPIF
    - Keenan Weischedel, Disability Rights Maine
    - Rep. Lynne Williams

- **Transit Plan Survey** - To supplement interaction with the *Transit Plan* planning process through the Family of Plans Public Meetings, Maine DOT released a public survey seeking input on goals and objectives, needs, and solutions. The survey was open April 2-30, 2022 and received 627 responses, with key findings summarized in the *Transit Plan* report.

- Additional comments on draft *Transit Plan* were also received by email (outside of PIMA). This included direct feedback from:
  - Biddeford Saco Old Orchard Beach Transit
  - GPCOG/PACTS
  - ITN America
  - Maine Department of Labor
  - Moving Maine Network
  - Natural Resources Council of Maine
  - Southern Maine Planning and Development Commission
  - Western Maine Transportation Services
  - Other members of the public

6.0 Rail Plan

- **Rail Plan Public Meetings** – In addition to the Family of Plans public meetings, the MaineDOT Rail Plan team held two *Rail Plan* focused public meetings.
  - March 23, 2022
  - January 26, 2023

- **Rail Advisory Council** – MaineDOT convened a Rail Advisory Council providing direction and insight to the planning process. The Rail Advisory Council met three times during the duration of *Rail Plan* development.
  - Members
    - MaineDOT
    - Northern New England Passenger Rail Authority
    - Maine International Trade Center
    - Northern Maine Development Commission
    - Eastern Maine Development Corporation
    - Lewiston-Auburn Economic Growth Council (now Chamber of Commerce)
    - U.S. FHWA
    - U.S. FTA
    - Amtrak
    - Canadian Pacific
    - CSX
    - NBM Railways
    - Lewiston-Auburn RR Holding Company
    - Massachusetts Bay Transportation Authority (MBTA)
    - St. Lawrence & Atlantic
    - Pan Am Railways (now CSX)
    - Turner Island Railroad
    - BACTS
    - PACTS
    - KACTS
    - ATRC
    - Operation Lifesaver
    - Maine Department of Agriculture, Conservation and Forestry
    - Maine Department of Environmental Protection
    - Maine Department of Economic and Community Development
    - Maine Port Authority

- Maine Better Transportation Association
- Maine Forest Products Council
- Maine Motor Transport Association
- Maine Professional Loggers
- New England Association of Rail Shippers
- Maine Tourism Association

- **Stakeholder Interviews**: MaineDOT held 22 interviews with key rail interest groups, organizations, employers, planning partners, and industry professionals.
  - TrainRiders Northeast
  - Independent rail advocate
  - Maine Rail Group
  - Maine Rail Transit Coalition
  - Maine Trails Coalition
  - Rail Users Network
  - Massachusetts DOT
  - New Hampshire DOT
  - New Brunswick Department of Transportation and Infrastructure
  - Port of St. John, New Brunswick
  - Canadian Pacific
  - Pan Am Railways (now CSX)
  - Finger Lakes Railway (Midcoast Rail)
  - NBM Railways (New Brunswick Southern, Eastern Maine Railway, Maine Northern Railway)
  - St. Lawrence and Atlantic Railroad
  - McCain Goods
  - Irving Woodlands
  - Pleasant River Lumber
  - Louisiana Pacific
  - Hancock Lumer
  - Dead River (propane)
  - Poland Springs/BlueTriton Brands

- **Other stakeholder meetings:** MaineDOT held an additional meetings with Rail Plan stakeholders to review the Draft Rail Plan on January 24, 2023.

- **Online mapping tool:** MaineDOT developed an online mapping tool and invited the Rail Advisory Council. interviewed stakeholders, and the following organizations to share information.

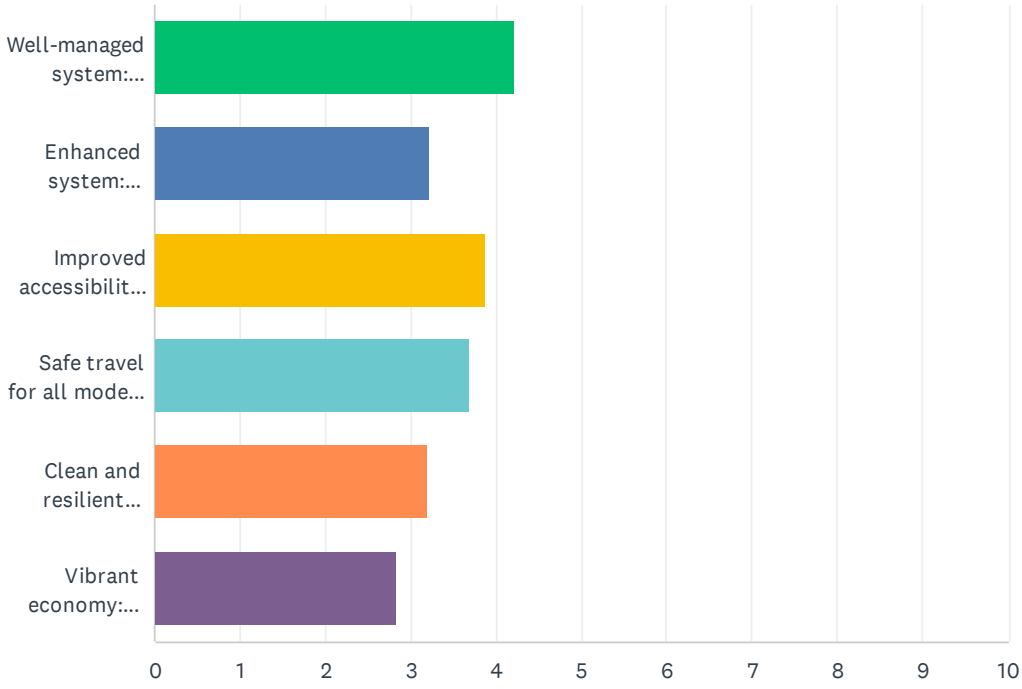
  - AIM Recycling Group
  - Gold Star Feed
  - Perma Treat Corporation
  - All States Materials Group
  - Greenwood Masonry
  - Presque Isle Industrial Council
  - American Steel & Aluminum
  - Hubbard Construction Company
  - ReEnergy Holdings
  - Bob Drake Consulting
  - Huhtamaki
  - Resource Systems Engineering, Inc.
  - Casco Bay Transportation
  - Legacy Properties Sotheby's
  - International Realty
  - Sargent Corporation
  - Cellblock FCS
  - Madden Sustainable Forestry
  - Seed Pro Inc.
  - Clarks Scrap Metals
  - Maine Energy
  - TNT Road Company, Inc.
  - Eurovia Atlantic Coast LLC
  - Maine Potato Growers, Inc.

- Town of Windham
- Fabian Oil
- Maine Woods Biomass Exports
- Turners Island LLC
- GAC Chemical Corporation
- ND Paper
- Twin Rivers Paper Company
- Columbia Forest Products
- NEPW Logistics
- Woodland Pulp, LLC

Attachment A. LRTP Survey Summary

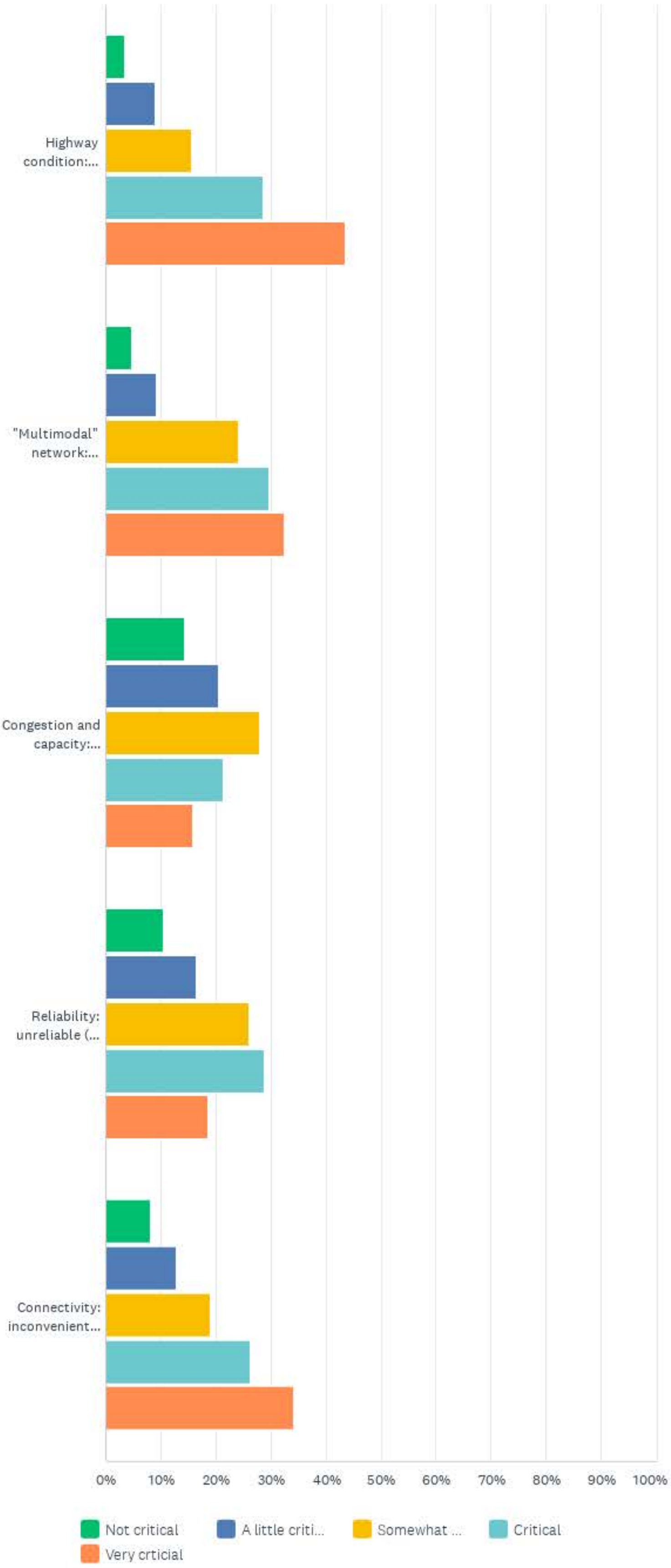
Q1 Rank the goals for Maine's transportation system in your preferred order. Please rank them from top (highest priority) to bottom (lowest priority).

Answered: 395 Skipped: 2



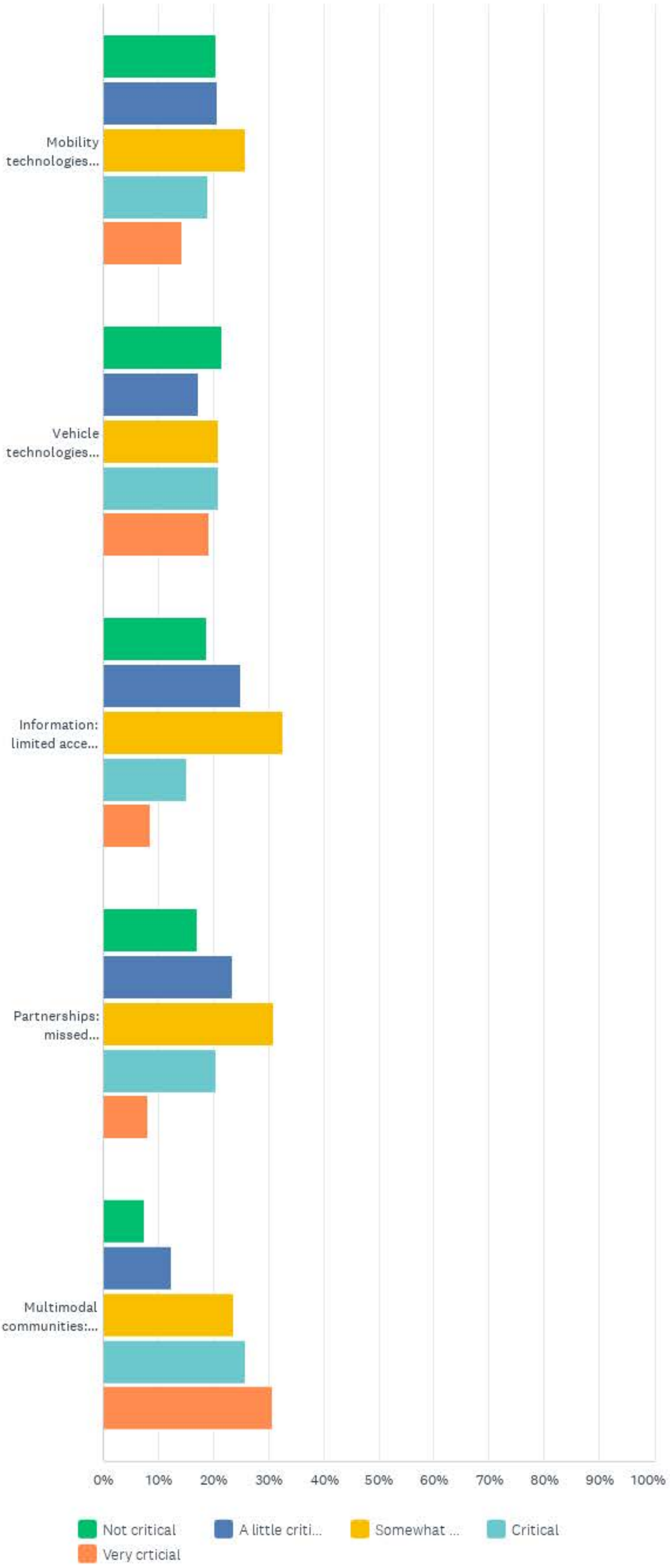
	1	2	3	4	5	6	TOTAL	SCORE
Well-managed system: Efficiently, safely, and reliably move people and goods through the transportation system.	29.52% 116	21.12% 83	15.52% 61	15.78% 62	11.96% 47	6.11% 24	393	4.22
Enhanced system: Identify new funding opportunities and technologies that will help enhance transportation system operations and services.	10.28% 40	15.17% 59	16.71% 65	18.51% 72	21.34% 83	17.99% 70	389	3.21
Improved accessibility: Ensure all Maine residents and visitors have access to safe and reliable transportation options that get them where they need to go.	17.60% 69	18.88% 74	27.04% 106	15.56% 61	12.24% 48	8.67% 34	392	3.88
Safe travel for all modes: Provide a safe transportation system for all users and all modes of transportation, including personal, commercial, and emergency vehicles; buses; trains; ferries; planes; bicycles; and walking.	16.15% 63	18.46% 72	18.72% 73	21.28% 83	15.64% 61	9.74% 38	390	3.69
Clean and resilient transportation system: Reduce transportation’s environmental impacts and prepare for the impacts of a changing climate.	14.54% 57	14.80% 58	12.24% 48	14.80% 58	20.92% 82	22.70% 89	392	3.19
Vibrant economy: Support our transportation workforce, access to downtowns and villages, and movement of freight to strengthen Maine’s economy.	11.96% 47	11.96% 47	10.18% 40	13.99% 55	18.07% 71	33.84% 133	393	2.84

Q2 For the goal of a "well-managed system," tell us how critical these transportation needs are to you and your community. Please rank them from 1 (not critical) to 5 (very critical).



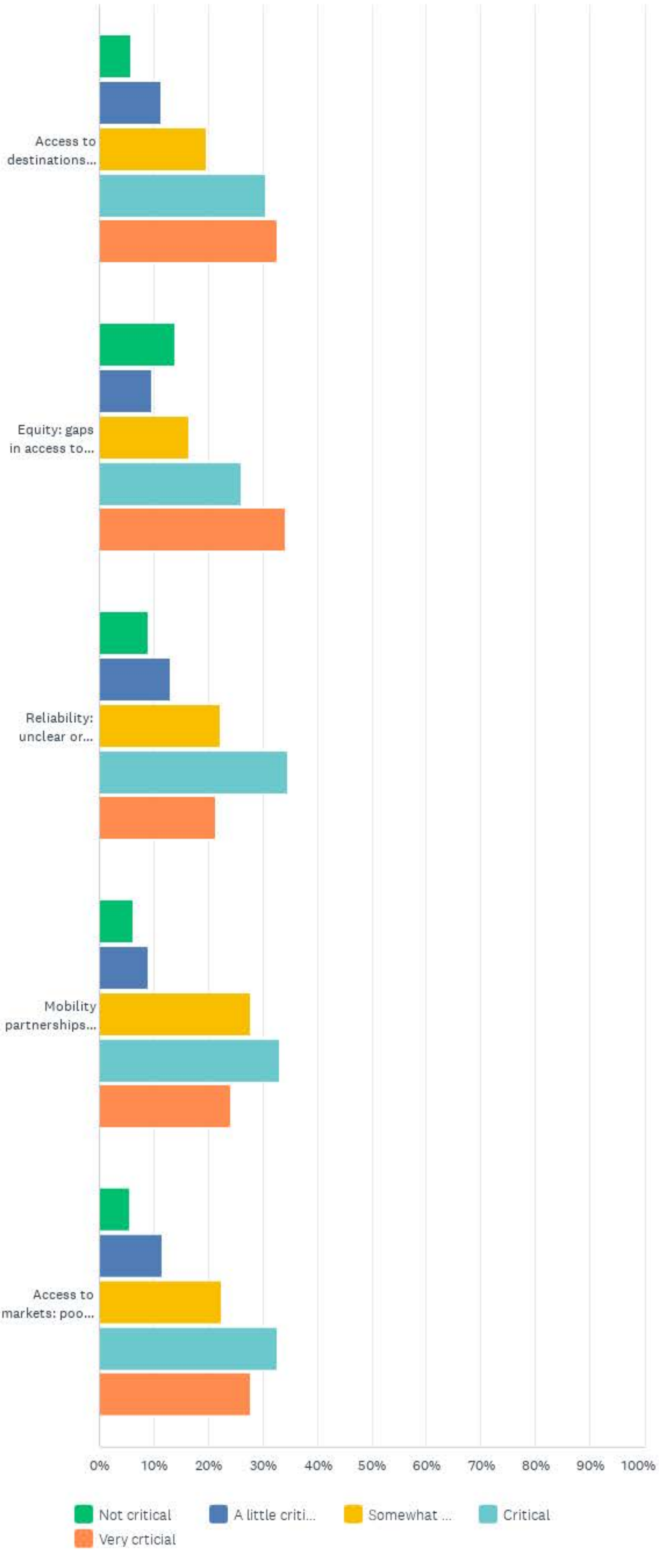
	NOT CRITICAL	A LITTLE CRITICAL	SOMEWHAT CRITICAL	CRITICAL	VERY CRTICIAL	TOTAL	WEIGHTED AVERAGE
Highway condition: unsafe, unpassable, or poor condition bridges and roadways.	3.37% 11	8.90% 29	15.64% 51	28.53% 93	43.56% 142	326	4.00
"Multimodal" network: maintenance issues on public transportation systems, railways, seaports, airports, bicycle, and pedestrian infrastructure.	4.63% 15	9.26% 30	24.07% 78	29.63% 96	32.41% 105	324	3.76
Congestion and capacity: traffic delays, bottlenecks, and safety issues on our highways.	14.29% 46	20.50% 66	27.95% 90	21.43% 69	15.84% 51	322	3.04
Reliability: unreliable (or unpredictable) travel times for all modes, including cars, trucks, buses, trains, ferries, planes, bicycles, and walking.	10.49% 34	16.36% 53	25.93% 84	28.70% 93	18.52% 60	324	3.28
Connectivity: inconvenient connections between different transportation modes, including cars, trucks, buses, trains, ferries, planes, bicycles, and walking.	8.05% 26	12.69% 41	18.89% 61	26.32% 85	34.06% 110	323	3.66

Q3 For the goal of an "enhanced system," please rank how critical these transportation needs are to you and your community.



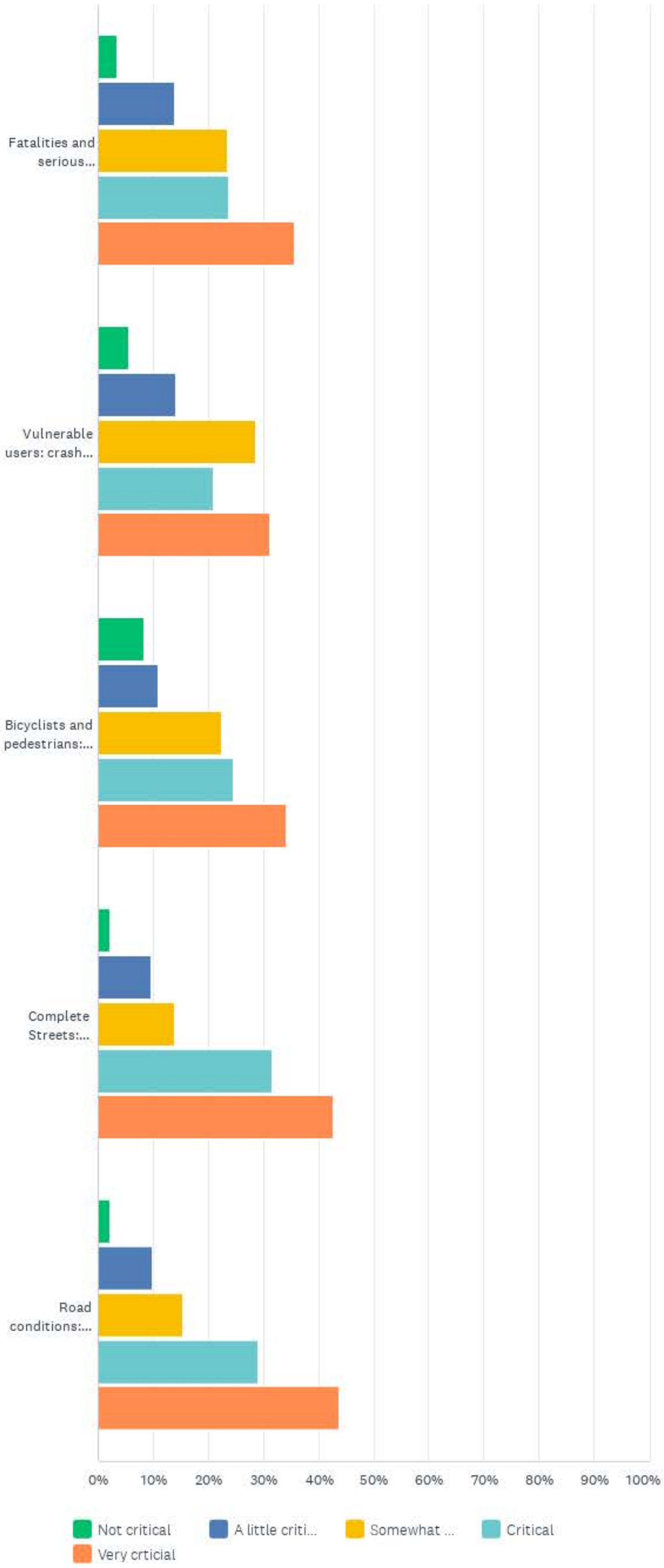
	NOT CRITICAL	A LITTLE CRITICAL	SOMEWHAT CRITICAL	CRITICAL	VERY CRTICIAL	TOTAL	WEIGHTED AVERAGE
Mobility technologies: limited or unequal access to services like ridesharing (such as Uber), bike-sharing, or on-demand, door-to-door public transportation.	20.43% 66	20.74% 67	25.70% 83	18.89% 61	14.24% 46	323	2.86
Vehicle technologies: limited or unequal access to electric vehicle charging, especially in rural areas.	21.60% 70	17.28% 56	20.99% 68	20.99% 68	19.14% 62	324	2.99
Information: limited access to real-time travel information on traffic, crashes, construction, and weather.	18.77% 61	24.92% 81	32.62% 106	15.08% 49	8.62% 28	325	2.70
Partnerships: missed opportunities for partnerships, including with the private sector, to enhance transportation operations.	17.03% 55	23.53% 76	30.96% 100	20.43% 66	8.05% 26	323	2.79
Multimodal communities: constraints to connected, safe, and accessible multimodal (personal vehicles, public transportation, bicycling, walking) transportation in Maine communities.	7.45% 24	12.42% 40	23.60% 76	25.78% 83	30.75% 99	322	3.60

Q4 For the goal of "improved accessibility," please rank how critical these transportation needs are to you and your community.



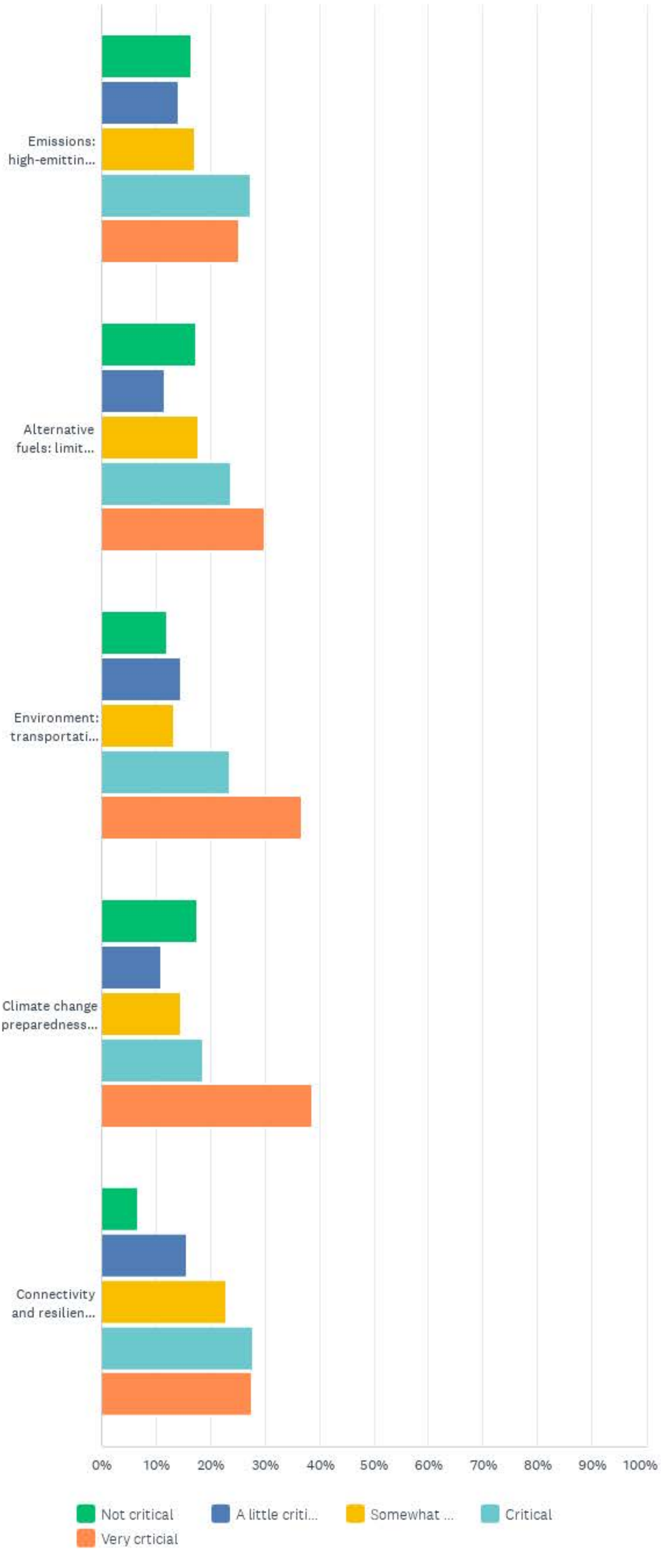
	NOT CRITICAL	A LITTLE CRITICAL	SOMEWHAT CRITICAL	CRITICAL	VERY CRTICIAL	TOTAL	WEIGHTED AVERAGE
Access to destinations: gaps in convenient and safe access to jobs, retail, healthcare, and public spaces.	5.85% 19	11.38% 37	19.69% 64	30.46% 99	32.62% 106	325	3.73
Equity: gaps in access to jobs and services for disadvantaged populations.	13.93% 45	9.60% 31	16.41% 53	26.01% 84	34.06% 110	323	3.57
Reliability: unclear or unreliable schedules for critical transportation services.	8.95% 29	12.96% 42	22.22% 72	34.57% 112	21.30% 69	324	3.46
Mobility partnerships: gaps in access to transportation services for seniors or people with disabilities.	6.17% 20	8.95% 29	27.78% 90	33.02% 107	24.07% 78	324	3.60
Access to markets: poor transportation connections between resources, industries, workers, and markets.	5.61% 18	11.53% 37	22.43% 72	32.71% 105	27.73% 89	321	3.65

Q5 For the goal of "safe travel for all modes," please rank how critical these transportation needs are to you and your community.



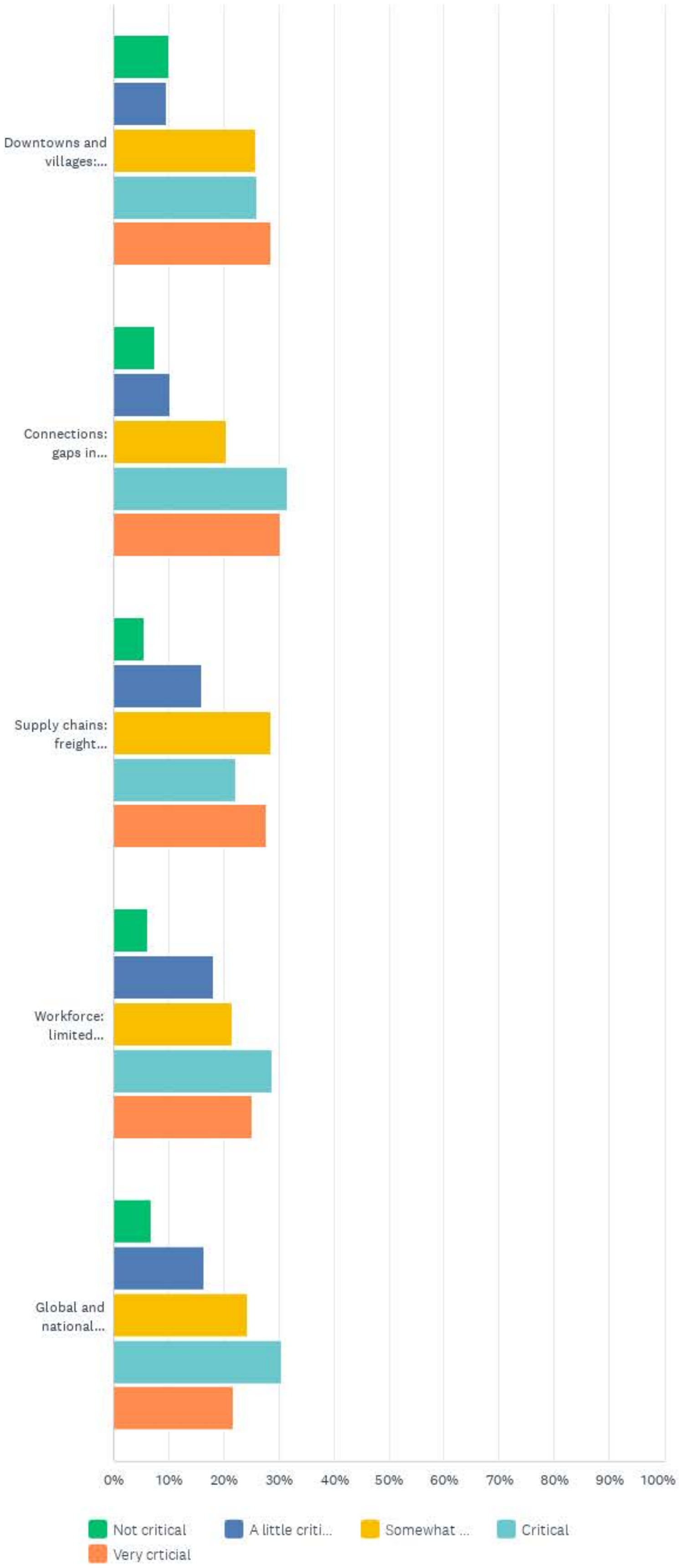
	NOT CRITICAL	A LITTLE CRITICAL	SOMEWHAT CRITICAL	CRITICAL	VERY CRTICIAL	TOTAL	WEIGHTED AVERAGE
Fatalities and serious injuries: fatal and serious injury crashes or incidents for all users of the transportation system.	3.38% 11	13.85% 45	23.38% 76	23.69% 77	35.69% 116	325	3.74
Vulnerable users: crashes involving vulnerable users, such as individuals with disabilities, seniors, and children.	5.59% 18	13.98% 45	28.57% 92	20.81% 67	31.06% 100	322	3.58
Bicyclists and pedestrians: crashes involving bicyclists and pedestrians.	8.36% 27	10.84% 35	22.29% 72	24.46% 79	34.06% 110	323	3.65
Complete Streets: uncomfortable or unsafe roadways for all users within all community contexts.	2.17% 7	9.60% 31	13.93% 45	31.58% 102	42.72% 138	323	4.03
Road conditions: difficult driving conditions or dangerous roadsides.	2.15% 7	9.85% 32	15.38% 50	28.92% 94	43.69% 142	325	4.02

Q6 For the goal of "clean and resilient transportation system," please rank how critical these transportation needs are to you and your community.



	NOT CRITICAL	A LITTLE CRITICAL	SOMEWHAT CRITICAL	CRITICAL	VERY CRTICIAL	TOTAL	WEIGHTED AVERAGE
Emissions: high-emitting trucks and other heavy-duty vehicles.	16.46% 53	13.98% 45	17.08% 55	27.33% 88	25.16% 81	322	3.31
Alternative fuels: limited access to electric vehicle charging stations and concerns about long-distance travel with electric vehicles.	17.28% 56	11.42% 37	17.59% 57	23.77% 77	29.94% 97	324	3.38
Environment: transportation system impacts to sensitive habitats and air and water quality.	12.04% 39	14.51% 47	13.27% 43	23.46% 76	36.73% 119	324	3.58
Climate change preparedness: concern about increasing risks from flooding, storms, sea level rise, and other disruptions to the transportation system.	17.39% 56	10.87% 35	14.60% 47	18.63% 60	38.51% 124	322	3.50
Connectivity and resilience: concern about the ability of transportation systems to quickly recover from disasters	6.54% 21	15.58% 50	22.74% 73	27.73% 89	27.41% 88	321	3.54

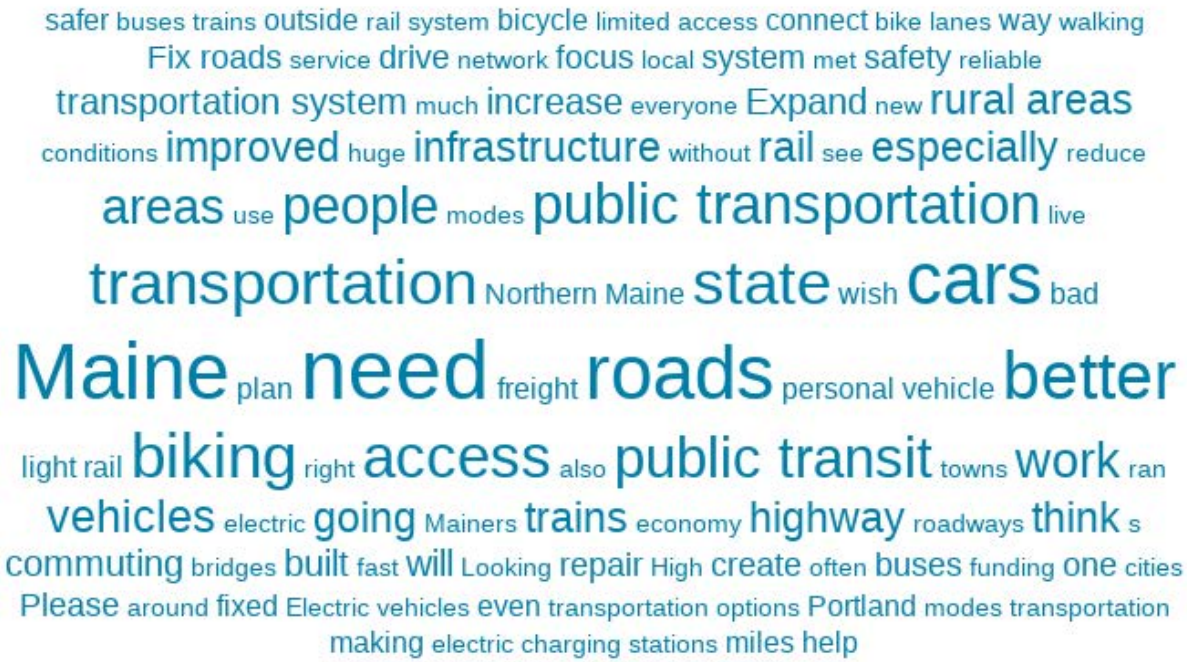
Q7 For the goal of "vibrant economy," please rank how critical these transportation needs are to you and your community.



	NOT CRITICAL	A LITTLE CRITICAL	SOMEWHAT CRITICAL	CRITICAL	VERY CRTICIAL	TOTAL	WEIGHTED AVERAGE
Downtowns and villages: limited access to villages and downtowns for cars, trucks, public transportation, bicycles, and pedestrians.	9.94% 32	9.63% 31	25.78% 83	26.09% 84	28.57% 92	322	3.54
Connections: gaps in transportation access to education, workforce development, and job opportunities.	7.48% 24	10.28% 33	20.56% 66	31.46% 101	30.22% 97	321	3.67
Supply chains: freight movement bottlenecks limiting the efficient movement and storage of goods.	5.61% 18	15.89% 51	28.66% 92	22.12% 71	27.73% 89	321	3.50
Workforce: limited opportunities for education and training for the transportation-related workforce.	6.27% 20	18.18% 58	21.63% 69	28.84% 92	25.08% 80	319	3.48
Global and national economy: limited freight capacity on Maine's highways, seaports, airports, and railways.	6.85% 22	16.51% 53	24.30% 78	30.53% 98	21.81% 70	321	3.44

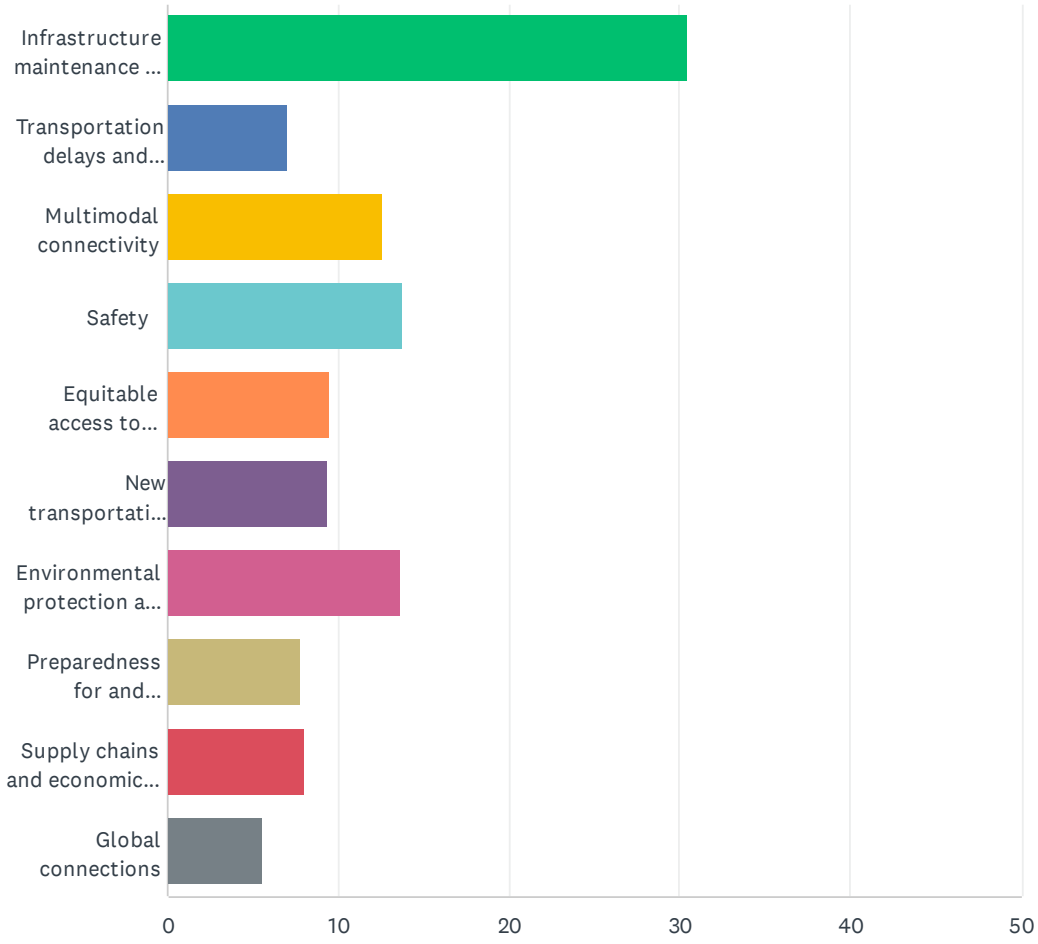
Q8 Do you have any comments on these needs? Or do you have any needs that you would like us to consider that were not listed?

Answered: 127 Skipped: 270



Q9 Tell us how you would distribute 100 cents (representing MaineDOT's full budget) across the categories provided? You do not have to add funds to every category. The total for all categories must add up to 100.

Answered: 265 Skipped: 132



ANSWER CHOICES	AVERAGE NUMBER	TOTAL NUMBER	RESPONSES
Infrastructure maintenance and improvements	31	7,815	256
Transportation delays and reliability	7	1,335	191
Multimodal connectivity	13	2,784	222
Safety	14	3,211	234
Equitable access to opportunities	10	2,001	210
New transportation technologies	9	1,987	213
Environmental protection and climate change	14	3,026	221
Preparedness for and resilience to disasters	8	1,675	216
Supply chains and economic position	8	1,654	206
Global connections	6	1,012	182
Total Respondents: 265			

Q10 Do you have any other comments about how you would like MaineDOT to prioritize its investments?

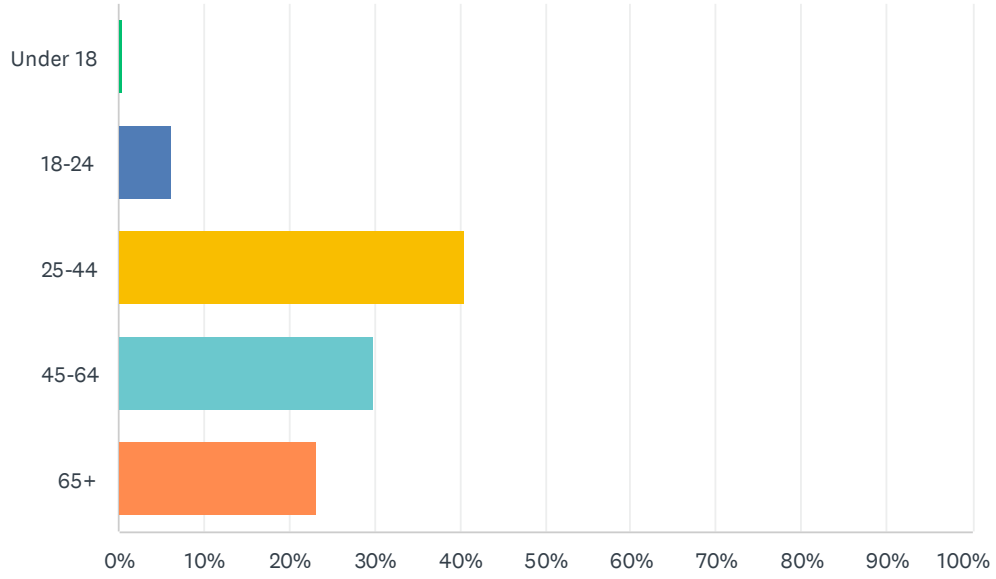
Answered: 87 Skipped: 310

Q11 What is your home ZIP code?

Answered: 267 Skipped: 130

Q12 What is your age?

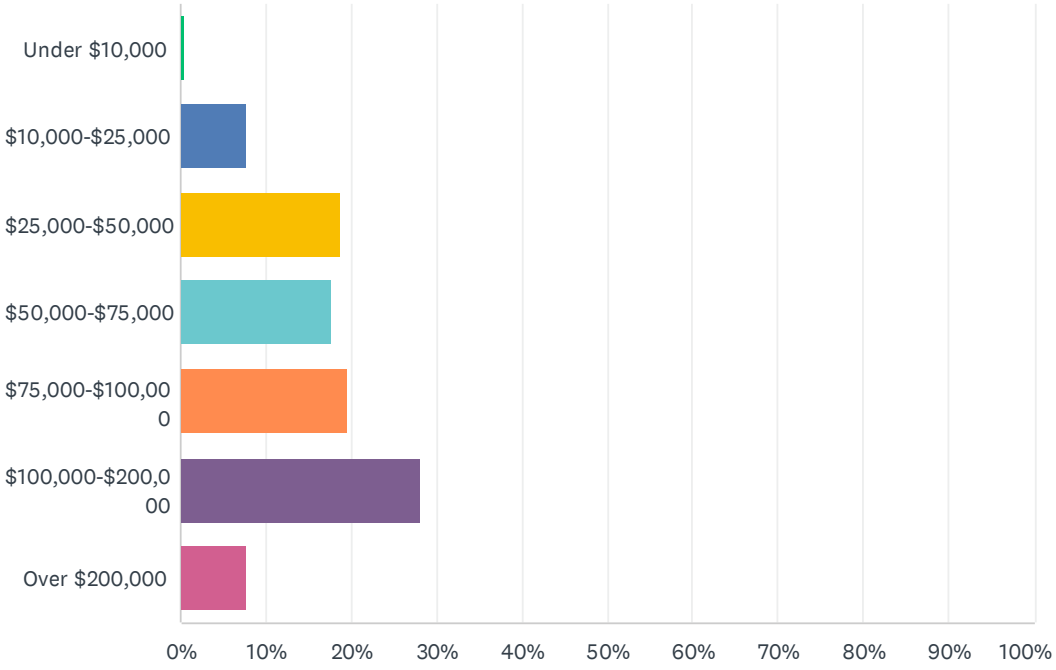
Answered: 272 Skipped: 125



ANSWER CHOICES	RESPONSES	
Under 18	0.37%	1
18-24	6.25%	17
25-44	40.44%	110
45-64	29.78%	81
65+	23.16%	63
TOTAL		272

Q13 What is your annual household income?

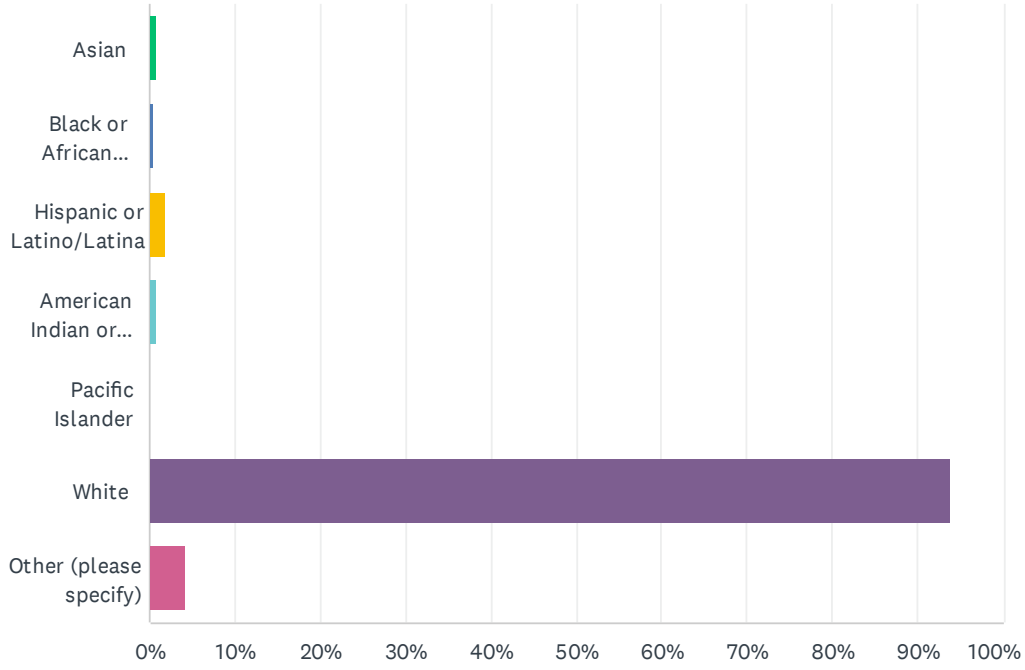
Answered: 260 Skipped: 137



ANSWER CHOICES	RESPONSES	
Under $10,000	0.38%	1
$10,000-$25,000	7.69%	20
$25,000-$50,000	18.85%	49
$50,000-$75,000	17.69%	46
$75,000-$100,000	19.62%	51
$100,000-$200,000	28.08%	73
Over $200,000	7.69%	20
TOTAL		260

Q14 What is your racial/ethnic identity? Check all that apply

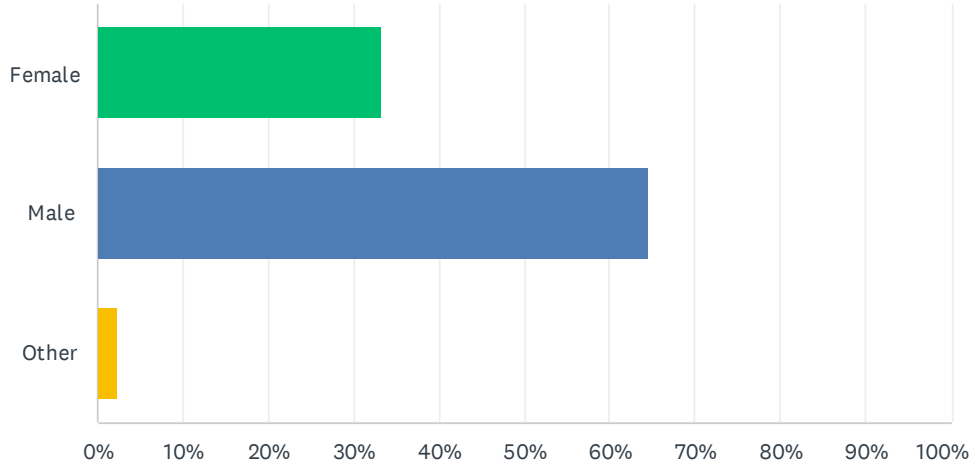
Answered: 257 Skipped: 140



ANSWER CHOICES	RESPONSES	
Asian	0.78%	2
Black or African American	0.39%	1
Hispanic or Latino/Latina	1.95%	5
American Indian or Alaska Native	0.78%	2
Pacific Islander	0.00%	0
White	93.77%	241
Other (please specify)	4.28%	11
Total Respondents: 257		

Q15 What is your sex?

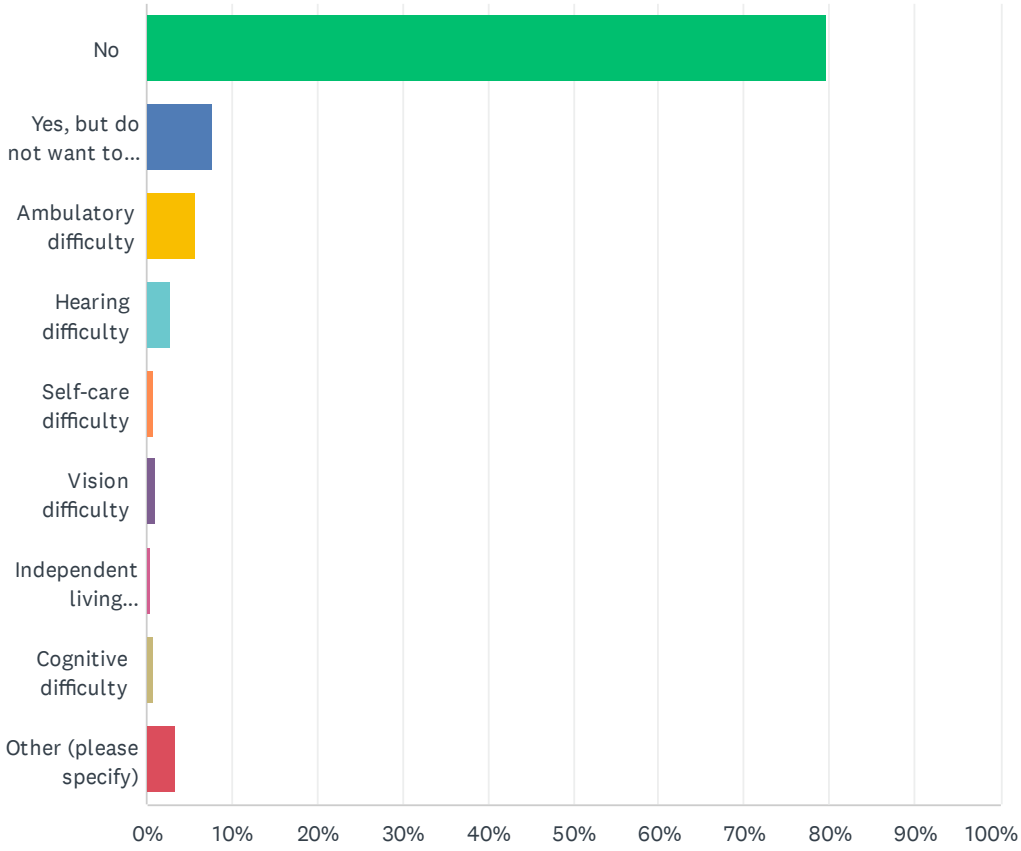
Answered: 262 Skipped: 135



ANSWER CHOICES	RESPONSES	
Female	33.21%	87
Male	64.50%	169
Other	2.29%	6
TOTAL		262

Q16 Do you have a disability? Please check any that apply.

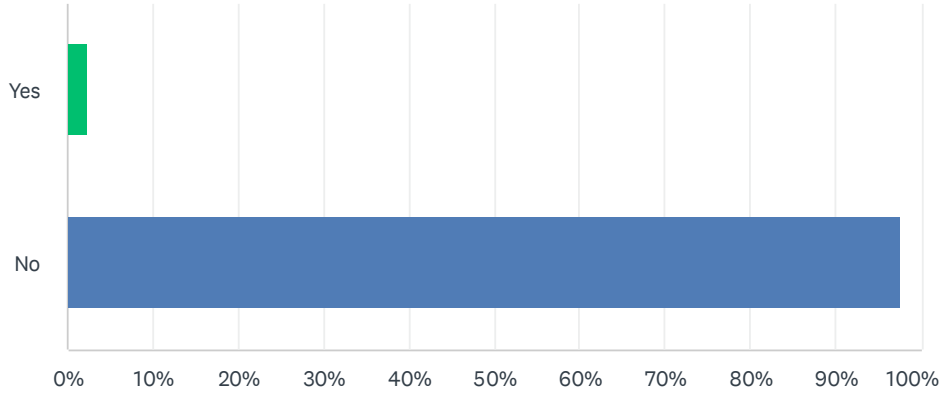
Answered: 262 Skipped: 135



ANSWER CHOICES	RESPONSES	
No	79.77%	209
Yes, but do not want to describe	7.63%	20
Ambulatory difficulty	5.73%	15
Hearing difficulty	2.67%	7
Self-care difficulty	0.76%	2
Vision difficulty	1.15%	3
Independent living difficulty	0.38%	1
Cognitive difficulty	0.76%	2
Other (please specify)	3.44%	9
Total Respondents: 262		

Q17 Are you an individual in recovery?

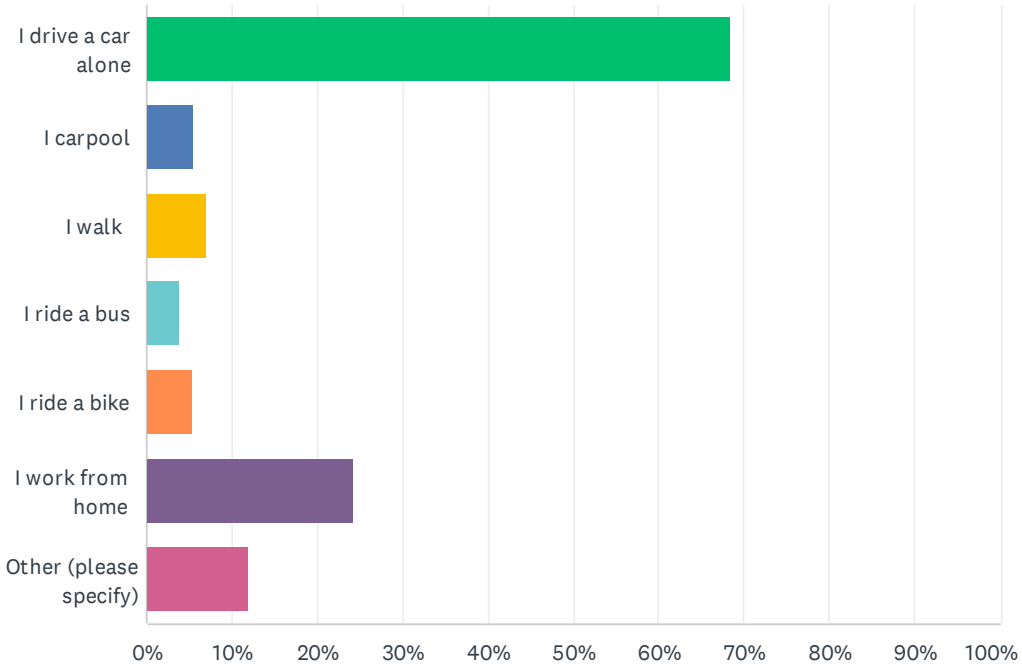
Answered: 265 Skipped: 132



ANSWER CHOICES	RESPONSES	
Yes	2.26%	6
No	97.74%	259
TOTAL		265

Q18 What transportation mode do you use most often to commute to work? Select up to 2.

Answered: 267 Skipped: 130



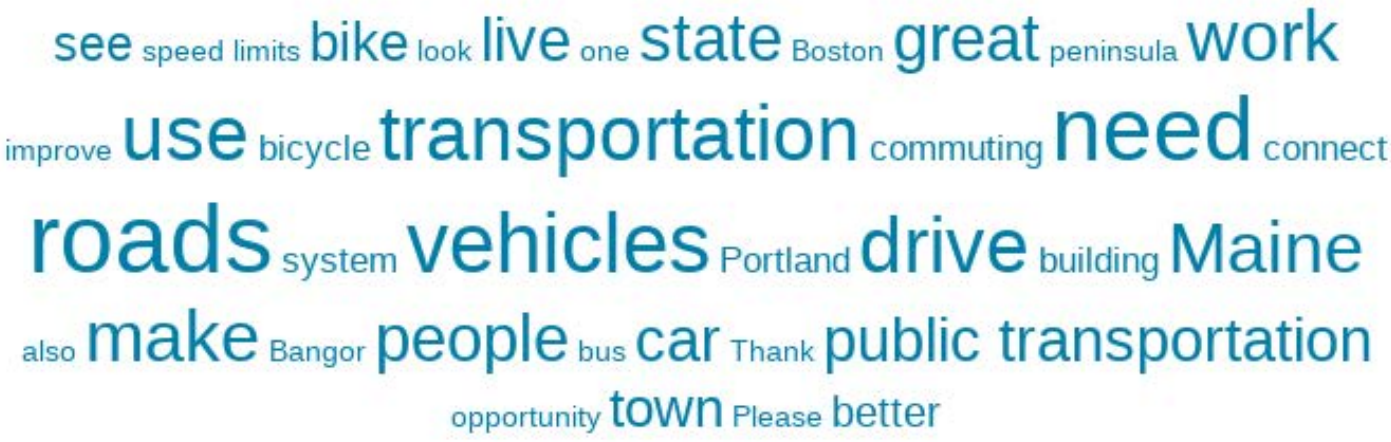
ANSWER CHOICES	RESPONSES	
I drive a car alone	68.54%	183
I carpool	5.62%	15
I walk	7.12%	19
I ride a bus	3.75%	10
I ride a bike	5.24%	14
I work from home	24.34%	65
Other (please specify)	11.99%	32
Total Respondents: 267		

Q19 On an average day, how many trips do you make outside your home?

Answered: 261 Skipped: 136

Q20 Please share any additional comments.

Answered: 78 Skipped: 319



Endnotes and Links

[i] 23 CFR 450.216: https://www.ecfr.gov/current/title-23/chapter-I/subchapter-E/part-450/subpart-B/section-450.216

[ii] 23 CFR 450.200: https://www.ecfr.gov/current/title-23/chapter-I/subchapter-E/part-450/subpart-B/section-450.200

[iii] MaineDOT Public Involvement Process: https://storymaps.arcgis.com/stories/8f175ebd865c4dd9ba55bcc15cfe3b3d

Working to Move Maine: MaineDOT's Long-Range Transportation Plan – Sources and References

Prepared by

Maine Department of Transportation

date

March 2023

1.0 Federal Requirements Overview

The *Long-Range Transportation* Plan (*LRTP*) is the Maine Department of Transportation's (MaineDOT's) overarching plan to communicate the vision for the transportation system and the strategies that MaineDOT and our partners plan to deliver throughout the next 20+ years.

The *LRTP* satisfies United States Department of Transportation (USDOT) requirements as specified in the Code of Federal Regulations (CFR), 23 CFR 450.216.[i] Provisions of the United States Code (U.S.C.), including 23 U.S.C. 135, 23 U.S.C. 150, and 49 U.S.C. 5304, as amended, require MaineDOT to:

> "carry out a continuing, cooperative, and comprehensive performance-based statewide multimodal transportation planning process… that facilitates the safe and efficient management, operation, and development of surface transportation systems that will serve the mobility needs of people and freight… and that fosters economic growth and development…."[ii]

The *LRTP* was developed consistent with federal and state requirements for consultation with partners, officials, and input from Maine citizens. The following information provides references to data and information utilized as part of the *LRTP* planning process.

2.0 Sources and References

2.1 Section 2: Infographics

Data and references for information, outside of MaineDOT sources, included in the LRTP Report Section 2 infographics are listed below.

- Our Transportation System – Travel Infographic
  - » American Community Survey, 2019 5-Year Estimates.
  - » Maine Office of Tourism 2019 Annual Report, 2020. https://motpartners.com/wp-content/uploads/2020/06/2019-MOT-Annual-Visitors-Research.pdf
  - » Freight Analysis Framework (FAF) 5.2, 2017.

- Our Transportation System – Ports and Airports Infographic
  - » Maine State Aviation System Plan: Phase I – Final Technical Report, 2021. https://www.maine.gov/mdot/aviation/docs/2021/MaineSASP%20Ph%20I%20-Final%20Technical%20Report-%20October%202021.pdf.
  - » MaineDOT Port Authority data, 2019 and 2021.

- How is Maine Changing – Safety Infographic
  - » Center for Disease Control, 2021. https://www.cdc.gov/transportationsafety/older_adult_drivers/index.html
- How is Maine Changing – Population Infographic
  - » Maine Population Outlook to 2028, 2021. https://www.maine.gov/dafs/economist/sites/maine.gov.dafs.economist/files/inline-files/Maine%20Population%20Outlook%20to%202028.pdf
- How is Maine Changing – Development Infographic
  - » State of Maine Broadband Action Plan, 2020.
- How is Maine Changing – Labor Infographic
  - » Maine Population Outlook to 2028, 2021. https://www.maine.gov/dafs/economist/sites/maine.gov.dafs.economist/files/inline-files/Maine%20Population%20Outlook%20to%202028.pdf
  - » Maine Workforce Outlook 2018 to 2028. https://www.maine.gov/labor/cwri/publications/pdf/2028OutlookPresentation.pdf
  - » Maine Workforce Outlook 2018 to 2028. https://www.maine.gov/labor/cwri/publications/pdf/2028OutlookPresentation.pdf
- How is Maine Changing – Technology Infographic
  - » Collins, King Announce More Than $2.8 Million for Electric Vehicle Infrastructure, 2022. https://www.collins.senate.gov/newsroom/collins-king-announce-more-than-28-million-for-electric-vehicle-infrastructure
  - » U.S. Department of Energy, Alternative Fuels Data Center. https://afdc.energy.gov/states/me
  - » Goldman Sachs, Electric Vehicles: What's Next VII: Confronting Greenflation. https://www.goldmansachs.com/insights/pages/gs-research/electric-vehicles-whats-next-vii-confronting-greenflation/report.pdf
  - » Electreck, Here's how US electric vehicle sales by maker and EV model through Q3 2022 compare. https://electrek.co/2022/10/18/us-electric-vehicle-sales-by-maker-and-ev-model-through-q3-2022/
- How is Maine Changing – Trade Infographic
  - » Overpromised and underdelivered': Why Amazon still hasn't gotten its drone delivery program off the ground. https://fortune.com/2022/04/11/amazon-prime-air-drone-delivery-program-not-off-ground/

- How is Maine Changing – Climate Infographic
  - » Maine Won't Wait. https://www.maine.gov/climateplan/the-plan
- How is Maine Changing – Tourism Infographic
  - » BEA, 2020. https://apps.bea.gov/data/special-topics/orsa/summary-sheets/ORSA%20-%20Maine.pdf
  - » Press Herald, 2022. https://www.pressherald.com/2022/03/02/maine-shifting-focus-to-making-tourism-sustainable/
  - » Press Herald, 2022. https://www.pressherald.com/2022/03/02/maine-shifting-focus-to-making-tourism-sustainable/
  - » Maine Won't Wait, 2020. https://www.maine.gov/future/sites/maine.gov.future/files/inline-files/MaineWontWait_December2020.pdf

2.2 Section 3: Needs Assessment

Data and references for information, outside of MaineDOT sources, included in the LRTP Report Section 3 Needs Assessment are listed below.

- Our Customer Needs – Tourism and Recreation
  - » Maine Office of Tourism, 2021 Economic Impact and Visitor Tracking Report.
    - https://motpartners.com/research/domestic-visitation/
    - https://www.nps.gov/aboutus/visitation-numbers.htm
- Our Customer Needs – Goods Movement
  - » Integrated Freight Strategy. https://www.maine.gov/mdot/ofps/docs/MaineDOT-FreightStrategy-Updt20171114.pdf
  - » Portland Press Herald, 2022. https://www.pressherald.com/2022/04/02/westward-ho-maine-potatoes-travel-far-after-western-drought

2.3 Section 4: Strategies

Data and references for information included in the LRTP Report Section 4 Strategies and Actions are listed below.

- » HCP and CSLs. https://www.maine.gov/mdot/about/assets/hwy/
- » Highway Safety Improvement Program (HSIP), 2021. https://highways.dot.gov/sites/fhwa.dot.gov/files/2021_ME_HSIP_Report.pdf

» Lead by Example. https://www.maine.gov/future/lead-by-example

» Locally Coordinated Plan. https://www.maine.gov/mdot/transit/publications/lcp/

» Maine crash data. https://www.maine.gov/mdot/safety/crash-data/

» Maine Local Roads Center. https://www11.maine.gov/mdot/mlrc/

» Maine State Aviation System Plan Phase 1. https://www.maine.gov/mdot/aviation/docs/2021/MaineSASP%20Ph%20I%20-Final%20Technical%20Report-%20October%202021.pdf

» Maine stormwater management best practices. https://www.maine.gov/dep/land/stormwater/stormwaterbmps/

» Maine Strategic Planning for Economic Development. https://www.maine.gov/decd/strategic-plan

» MaineDOT and BIL discretionary grants. https://www.maine.gov/mdot/grants/

» MaineDOT Bridge Design Guide. https://www.maine.gov/mdot/bdg/

» MaineDOT Commission on Autonomous Vehicles. https://www.maine.gov/mdot/autonomous-vehicles/

» MaineDOT Demonstration projects procedures. https://www.maine.gov/mdot/engineering/docs/policies/2021/Procedure%20for%20Implementing%20Demonstration%20Project%20and%20Non-project%20Related%20Roadway%20Changes.pdf

» MaineDOT engineering practices and procedures. https://www.maine.gov/mdot/engineering/practices-procedures/

» MaineDOT guidelines on crosswalks. https://www.maine.gov/mdot/engineering/docs/practices/2021/MaineDOT%20Guidelines%20on%20Crosswalks%20_%20Rev%20July%2021.pdf

» MaineDOT installing solar arrays. https://www.maine.gov/tools/whatsnew/index.php?topic=DOT_Press_Releases&id=8670912&v=article2015&fbclid=IwAR3-K6LxLoX9B-bCjQkK8KZl88ukE2Zj3D17JM3WeTjRgP9ONzD19btdW5I

» MaineDOT safety patrol. https://www.maine.gov/mdot/safety-patrol/

» MaineDOT Transportation Research. https://www.maine.gov/mdot/research/

» MaineDOT's Climate Initiative infrastructure resilience assessment. https://www.maine.gov/mdot/climate/assessment/

» Municipal Comprehensive Planning Rule. http://www.maine.gov/sos/cec/rules/07/105/105c208.doc

» New England 511. https://newengland511.org/

» Rail Preservation Act. https://www.mainelegislature.org/legis/statutes/23/title23ch615sec0.html
» Safe System Approach. https://highways.dot.gov/safety/zero-deaths
» Sensible Transportation Policy Act. http://www.maine.gov/sos/cec/rules/17/229/229c103.doc
» Small Harbor Improvement Program. https://www.maine.gov/mdot/pga/ship/
» State Management Plan. https://www.maine.gov/mdot/transit/docs/2021/SMP_2021.pdf
» Volkswagen Beneficiary Mitigation Plan. https://www.maine.gov/mdot/vw/bmp/
» Wildlife safety. https://www.maine.gov/mdot/safety/wildlife
» Work Zone safety. https://www.maine.gov/mdot/safety/workzone/

Endnotes and Links

[i] 23 CFR 450.216: https://www.ecfr.gov/current/title-23/chapter-I/subchapter-E/part-450/subpart-B/section-450.216

[ii] 23 CFR 450.200: https://www.ecfr.gov/current/title-23/chapter-I/subchapter-E/part-450/subpart-B/section-450.200