

CONNECT



A Long-Range Transportation Plan for Greater Portland, Maine

DECEMBER 2022

Adopted by the PACTS Policy Board on 12/15/22.

ACKNOWLEDGMENTS

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The Portland Area Comprehensive Transportation System (FACTS) is a federal metropolitan planning organization that coordinates transportation planning and investment decisions with the state, municipalities, and public transportation partners. It directs the spending of more than \$34 million in transportation funding each year.

In 2020, FACTS became part of the Greater Portland Council of Governments (GPCOG) as approved by the former FACTS Policy Committee and GPCOG General Assembly. FACTS has retained its responsibilities as the region's metropolitan planning organization while GPCOG provides staff support and implements FACTS policies and projects.

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**Planning Greater Portland's
Transportation Future**

Congress Street in Portland.
Photo Corey Templeton

01

Connect 2045

CONTEXT

WHAT IS A LONG-RANGE TRANSPORTATION PLAN
& HOW IS IT DEVELOPED?



FOR THOSE not immersed in it, the world of transportation planning can be a complicated and inaccessible field. This chapter puts everything in context, providing a high-level summary to questions like: “What is a long-range transportation plan?” “What function does it serve?” And, “How was it developed?” We document — in a straightforward way — how we created *Connect 2045* over the last 18-months, everything that went into it (from public opinion, to data, to state/federal requirements, to recent planning efforts), and how we intend to use it over the next five years. Ultimately, *Connect 2045* is both a shared vision for what we want our transportation system to look like 20-years from now, as well as an action plan for how to get there.

What is PACTS?

The Portland Area Comprehensive Transportation System (PACTS) is the metropolitan planning organization (MPO) for the Greater Portland region. In this role, PACTS coordinates transportation planning and investment decisions with the state, municipalities, and public transportation partners, and directs the spending of more than \$34 million in transportation funding each year.

Primary Responsibilities

All metropolitan planning organizations must produce, and periodically update, the following work products:

- **Long-Range Transportation Plan**
This plan establishes a regional vision for transportation decisions and investments and has a time horizon of 20 years.
- **Transportation Improvement Program**
This is a four-year fiscally constrained list of projects to be completed with federal funds in the region.
- **Unified Planning Work Program**
Updated every two years, the unified planning work program describes transportation studies and other planning tasks the metropolitan planning organization intends to undertake in the region.

The transportation improvement program, the unified planning work program, and many other policies and decisions are informed by the vision and direction of the long-range transportation plan.

Organizational Structure

PACTS is governed by a Policy Board comprised of a diverse mix of local, state, and federal officials, public transportation providers, and other regional representatives.

The Role of an MPO

Metropolitan Planning Organizations (MPOs) are required by the U.S. Department of Transportation in metropolitan regions with populations over 50,000 in order to qualify for federal highway and transit funds.

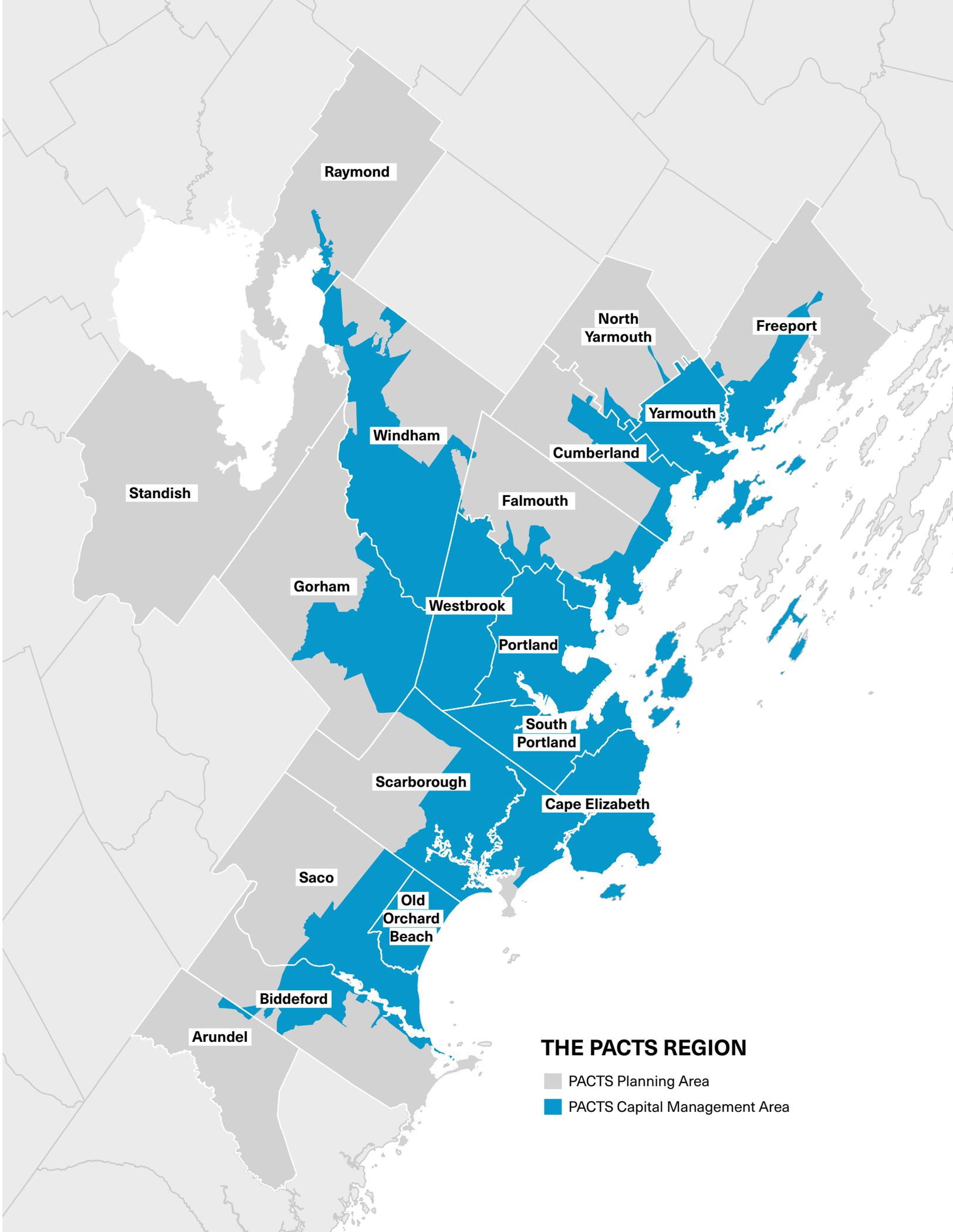
MPOs provide ongoing regional coordination of transportation investment decisions and develop solutions to regional transportation challenges. Among other responsibilities, MPOs maintain a regional transportation vision, conduct transportation studies, allocate federal funds, and engage the public in planning processes.

The Policy Board is the primary decision-making body of PACTS and endorses all policies, projects, and programs, including the long-range transportation plan. The Policy Board is supported by the Executive Board (a subset of the Policy Board) and the Regional Transportation Advisory Committee.

In 2020, PACTS became part of the Greater Portland Council of Governments (GPCOG) as approved by the former PACTS Policy Committee and GPCOG General Assembly. PACTS has retained its responsibilities as the region's metropolitan planning organization while GPCOG provides staff support and implements PACTS policies and projects.

The PACTS Region

The PACTS region includes 18 municipalities in Cumberland and York Counties (see map on next page). The "planning area" determines eligible locations for transportation planning studies, projects, and programs. The "capital management area" is a subset of the planning area. It is the federally designated urbanized area (adjusted based on local and state input) that determines eligible locations for capital investments (e.g., design, engineering, and construction projects).



Raymond

North
Yarmouth

Freeport

Yarmouth

Windham

Cumberland

Standish

Falmouth

Gorham

Westbrook

Portland

South
Portland

Scarborough

Cape Elizabeth

Saco

Old
Orchard
Beach

Biddeford

Arundel

THE PACTS REGION

- PACTS Planning Area
- PACTS Capital Management Area

What is a Long-Range Transportation Plan?

FEDERAL LAW requires that all urbanized areas with populations over 50,000 in the United States develop a long-range transportation plan in order to maintain eligibility for federal programs. The long-range transportation plan serves two major functions. First, it establishes the collective vision and goals of the region. Second, it guides decision-making and prioritizes investments.

Among other requirements, long-range transportation plans must focus on all modes of travel (including transit, freight, bicycles, and pedestrians), consider a time horizon of 20 years, include performance measures to track progress towards the plan's goals, and be updated every five years. The plans are updated to account for shifts in national policy as well as local community issues and concerns, growth and development patterns, travel behavior, technological advances, and fluctuations in available funding.

Connect 2045 is the long-range transportation plan for Greater Portland. It is a shared, regional vision that guides decision-making and outlines how we intend to invest in the transportation system over the next 20 years. The plan establishes goals and objectives for the region and sets a bold, strategic direction for how we can improve our network of roadways, transit services, and walking and biking facilities to meet our present and future needs.

In keeping with requirements, PACTS will continue to update our long-range transportation plan every five years. The next update to *Connect 2045* will occur in 2025 and consider a planning horizon out to 2050.

Connect 2045 sets a bold, strategic direction for how we can improve our network of roadways, transit services, and walking and biking facilities to meet our present and future needs.

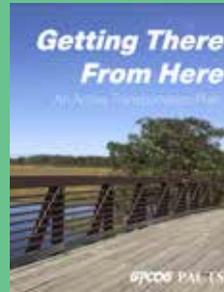
Complementary PACTS Plans and Studies

LONG RANGE MULTIMODAL PLANNING



Destination 2040 is the previous Long-Range Transportation Plan for the PACTS region adopted in 2016. Among other policies, the plan introduced the priority centers and corridors approach to strategically target investments to regionally significant places.

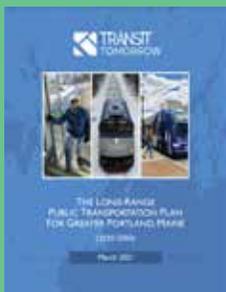
ACTIVE TRANSPORTATION



Getting There From Here is the region's active transportation plan. Updated in 2018, the plan is guided by the principles of safety, equity, health, economic vibrancy, connectivity, and resiliency. *Getting There From Here* envisions a complete network of accessible trails, paths, ways,

and modes, serving all people and places, promoting healthy lifestyles and a vibrant economy.

PUBLIC TRANSPORTATION



Transit Tomorrow is an ambitious 30-year strategic plan for enhancing public transportation in the Greater Portland region. Adopted in 2021, the plan is centered around the primary goals of making transit easier, creating frequent connections throughout the region,

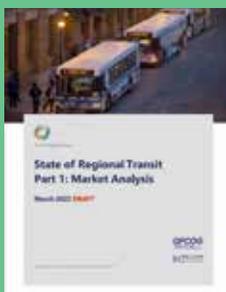
embracing rapid transit, and creating transit-friendly places that support more development intensity in urban areas already served by transit.

PUBLIC INVOLVEMENT



Public Involvement Plan
A federally-required document, the *Public Involvement Plan* outlines PACTS goals, strategies, and procedures for involving the public (particularly underrepresented communities and key stakeholders) in the transportation planning process. Updated in 2019, the plan

is guided by the belief that broad and robust public involvement will result in transportation investments that better address the needs of those that use the system.



Transit Together
Currently underway, *Transit Together* is an initiative to identify opportunities for increased coordination and integration among the region's seven public transit providers. The planning effort is the result of a recommendation in *Transit Tomorrow* to make the transit system more seamless to ride and more efficient to operate.

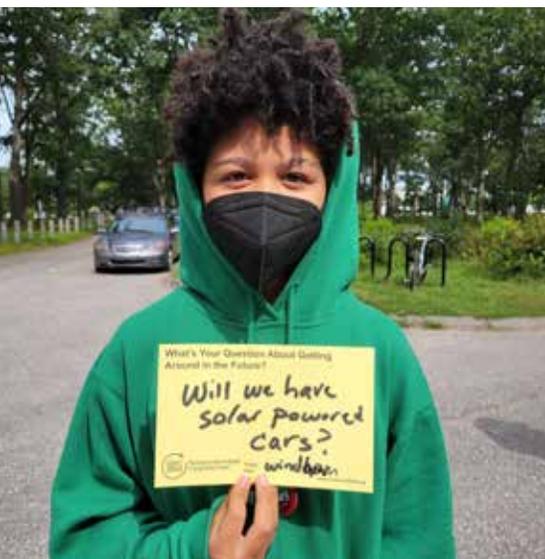


Inclusive Transportation Planning Toolkit

Developed in 2019, the toolkit is used by GPCOG/PACTS staff, our consultants, and member municipalities and transit agencies for guidance on inclusive transportation planning. The toolkit helps ensure that PACTS planning and decision-making involves people who experience barriers to transportation.



Rapid Transit Study
Currently underway, this study stems from a recommendation in *Transit Tomorrow* to improve rapid transit in the region. The study is evaluating rapid transit options (such as bus rapid transit or light rail) and potential corridors connecting Gorham, Westbrook, and Portland.



Happy participants of all ages hold up their question about the future of our region's transportation system.

Photos: GPCOG

How is the Plan Developed?

DEVELOPING A SHARED VISION for a diverse region of over 290,000 people requires extensive outreach and collaboration. We went to great lengths to engage as many people and stakeholder groups as possible, while maintaining a continuous dialogue with our municipal members, transit agencies, boards and committees, and the *Connect 2045* Project Advisory Committee.

We began our work in the summer of 2021. The project team launched the website www.connect2045.org, issued a 30-day public notice, and convened the *Connect 2045* Project Advisory Committee. The Committee met quarterly and included local, state, and federal stakeholders from a wide range of interests.

After the initial launch period, the plan's development was organized into three phases: First, understanding where we are now (what is the current state of our transportation system?); second, identifying where we want to go (what is our shared vision for the future?); and third, figuring out how we get there (what are the policies, actions, and projects that will help us achieve our vision?).

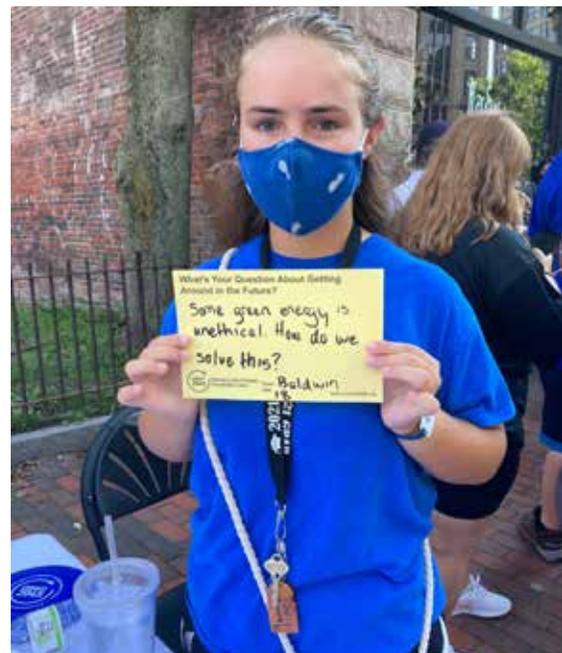
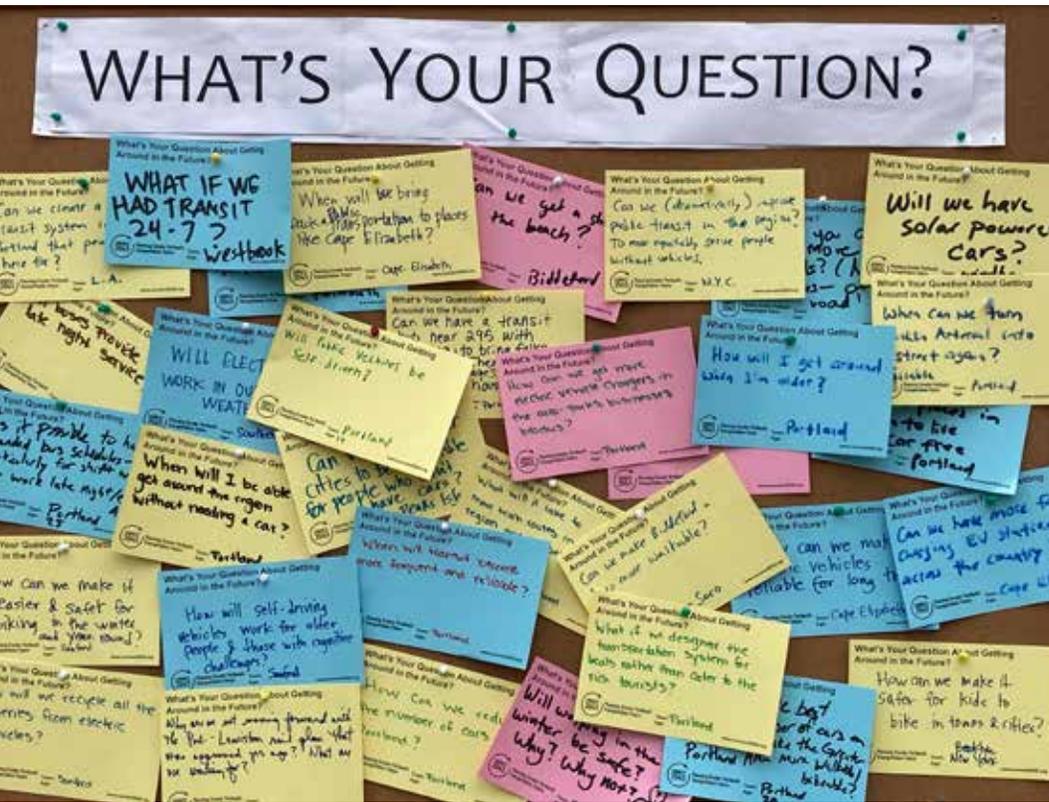
Phase 1: Where Are We Now?

In the first phase, we evaluated regional demographics and the current state of the transportation system. This effort, combined with input from the Project Advisory Committee and other key stakeholders, forms the backbone of the plan's needs assessment (Chapter 2).

Phase 2: Where Are We Going?

In the fall of 2021, we hit the streets and conducted an extensive two-part public engagement campaign to develop a shared vision for the future. First, we launched a "Question Campaign" modeled after the highly successful public engagement method of the Go Boston Transportation Plan.

People who live in, work, or visit the region were asked, "What's your question about getting around Greater Portland in the future?" Listening to people's questions served as a way to understand the breadth of relevant issues, what people's diverse experiences are, and what individuals value most. Anyone can have a question, even if they do not see themselves as

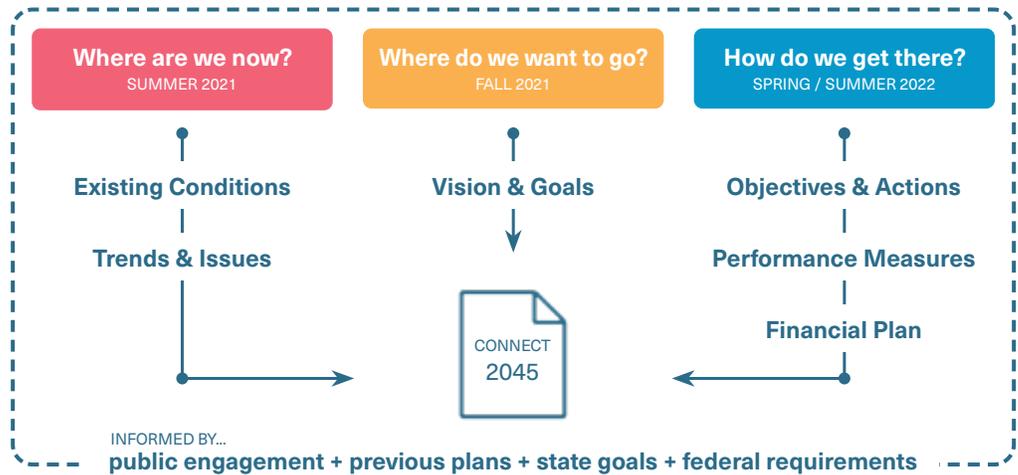


Photos from the Question Campaign

The *Connect 2045* team collected hundreds of questions from people all around the region to help develop the plan's vision. **Top left:** A bulletin board with dozens of submitted questions for others to see. **Top right:** a person holds up their question about frequent transit service to Lewiston. **Bottom left:** The *Connect 2045* team set up in downtown Biddeford to collect questions. **Bottom right:** a person holds up their question about the ethics of green energy. Photos: GPCOG

**See Appendix A for more information on Connect 2045's public engagement process.*

Connect 2045 was developed in three major phases. First, understanding where we are now; second, developing a vision for where we want to go; and third, identifying the policies, actions, and projects needed to get there. In every phase of its development, the plan was informed by public engagement, previous plans, state goals, and federal requirements.



“experts” on transportation planning. Crafting opportunities for people to donate their questions online and in person across the region provided an easy, low-barrier way for hundreds of people to participate.

After collecting more than 500 questions from the public, we analyzed and sorted the questions based on the major themes that emerged. Six themes were selected as the best way to organize the questions: equitable access, livability, safety, mobility choices, environment, and stewardship.

In lieu of an in-person workshop, a virtual “Visioning Lab” was then created to collect people’s specific ideas for how we can do better in each category. The “Visioning Lab” resembled a cork board where people could add sticky notes with their ideas and “like” or comment on other people’s ideas.

The Question Campaign and Visioning Lab were the primary inputs for developing *Connect 2045’s* vision and goals.

Phase 3: How Do We Get There?

The final step was identifying the policies and projects for how we get there. To do this, staff met individually with municipalities, transit agencies, and other key stakeholders to discuss

specific improvement ideas. A public survey launched in the summer of 2022 received more than 1,000 responses. The feedback from the stakeholder meetings, the survey, and a public workshop held in May 2022 directly informed *Connect 2045’s* objectives, actions, and performance measures.

Per federal regulations, PACTS is required to estimate future funding and include a list of transportation projects that are within the predicted financial resources of the region over the next 20 years. Staff issued a “Call for Projects” in the summer of 2022 and received more than 60 proposed projects. Staff and 10 volunteers evaluated the projects, using *Connect 2045’s* six major goals as well as state and federal policies as guidelines. The projects are included in the financial chapter of the plan in either the fiscally constrained, or aspirational, project lists.

Draft Plan

With the backbone of the planning process complete, staff prepared a draft plan, issued a 30-day public notice for comments, considered the comments received, and refined the plan accordingly (see [Appendix E](#)). The plan was then presented to the Regional Transportation Advisory Committee and Policy Board and adopted in December 2022.

State Goals & Policies

IN ADDITION TO considering what we heard from the public, and incorporating key elements of recent planning efforts, *Connect 2045* is strongly guided by a selection of relevant statewide goals and policies. Primarily, the ambitious greenhouse gas reduction goals in *Maine Won't Wait*, as well as the principles of providing safe and accessible streets for all users that are outlined in MaineDOT's Complete Streets Policy.

Maine Won't Wait

In 2020, Maine unveiled the four-year Climate Action Plan, *Maine Won't Wait*, which aims to decrease greenhouse gas emissions in the state by 45% by 2030 and 80% by 2050, and achieve carbon neutrality by 2045.

The plan pays special attention to addressing transportation, which is responsible for 54% of Maine's annual greenhouse gas emissions. To meet the state's emission reduction goals by 2030 and 2050, we must pursue "aggressive transition strategies and innovative solutions within this sector." The three primary strategies identified in *Maine Won't Wait* are:

1. Accelerate Maine's transition to electric vehicles;
2. Increase fuel efficiency and alternative fuels; and
3. Reduce vehicle miles traveled.

Since its release, the state is actively funding the plan's climate and energy priorities and monitoring progress towards its goals.

Complete Streets

Approved in 2014, the MaineDOT's Complete Streets Policy outlines how the agency and its project partners will consider the needs of all users when planning and developing projects.

The policy recognizes that pedestrian and bicycle infrastructure such as sidewalks, bike lanes, separated facilities, and Americans with Disabilities Act (ADA) accessible transit stops and routes are crucial elements of the transportation system.

Transportation

is responsible for

54%

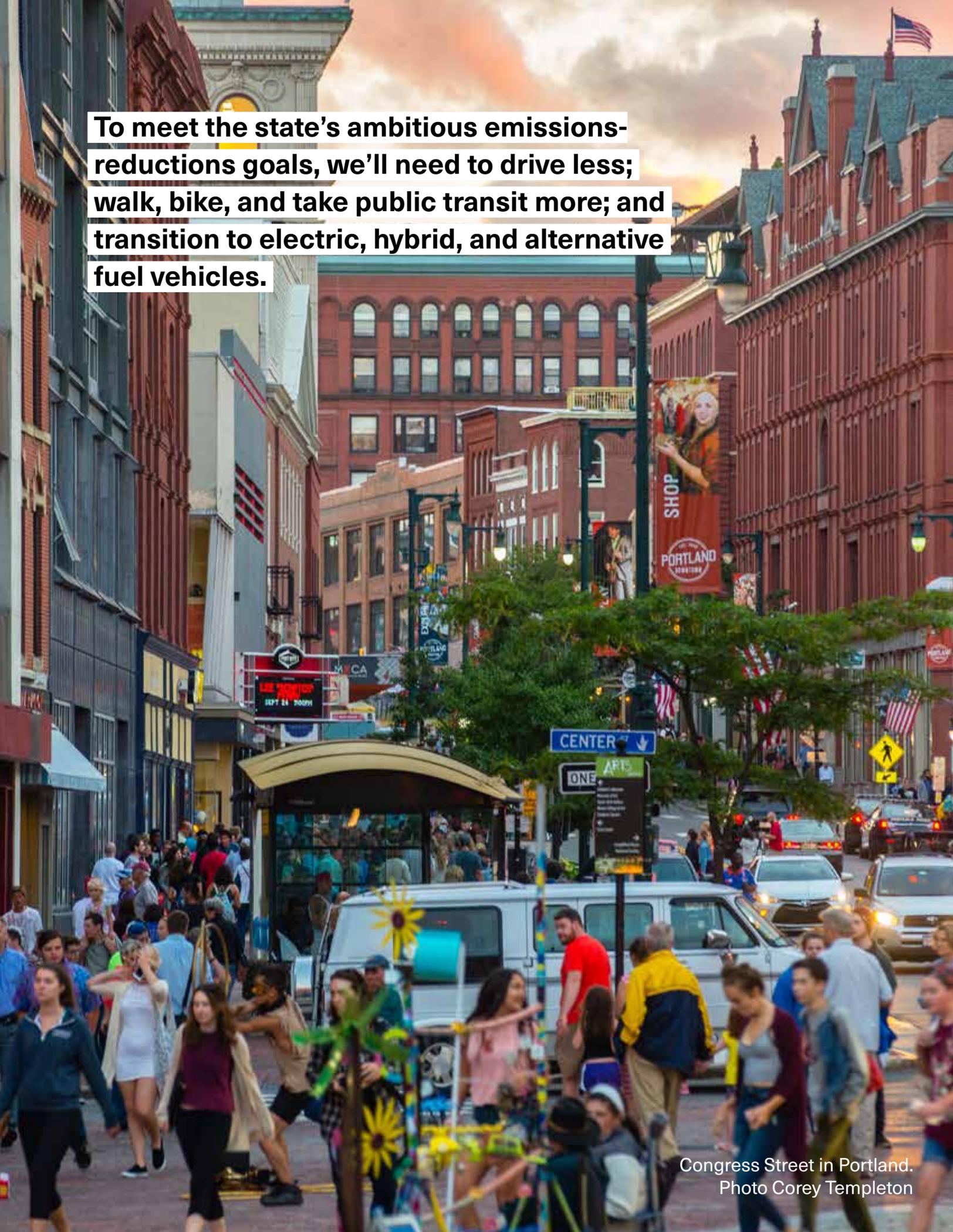
of Maine's annual greenhouse gas emissions.



Maine Won't Wait, *A Four-Year Climate Action Plan*

In June 2019, Governor Mills signed LD 1679 into law, to create the Maine Climate Council. The Council (an assembly of scientists, industry leaders, bipartisan local and state officials, and engaged citizens) was charged with developing the four-year Climate Action Plan to put Maine on the path to decrease greenhouse gas emissions by 45% by 2030, 80% by 2050, and achieve carbon neutrality by 2045.

To meet the state's ambitious emissions-reductions goals, we'll need to drive less; walk, bike, and take public transit more; and transition to electric, hybrid, and alternative fuel vehicles.



Congress Street in Portland.
Photo Corey Templeton

Federal Requirements

CONNECT 2045 is a federally-required document. To maintain regional eligibility for federal programs, the plan must meet certain requirements — in particular, the 10 FAST Act planning factors reauthorized by the Infrastructure Investment and Jobs Act (IIJA).

Infrastructure Investment and Jobs Act

The IIJA is the current five-year surface transportation reauthorization bill. Among other requirements, the Jobs Act and its predecessor, the FAST Act, identify 10 transportation planning factors (shown to the right) that must be applied to all projects and programs of metropolitan planning organizations (including the long-range transportation plan). While the vision, policies, and projects included in Connect 2045 reflect local and regional priorities, they do so within the context of the 10 planning factors outlined in the FAST Act. To ensure this requirement was met, the planning factors were incorporated into every phase of the plan's development.

Federal Planning Emphasis Areas

In 2021, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) jointly issued a Planning Emphasis Areas memo encouraging metropolitan planning organizations to focus on the following:

- **Tackling the Climate Crisis:** Ensure transportation plans and infrastructure investments support national greenhouse gas emission reduction and climate change resilience goals.
- **Equity and Justice40:** Advance racial equity and support disadvantaged communities through strategies that support increased safety and access in transportation for those groups. In the whole-of-government, 40 percent of federal investments should flow to disadvantaged communities.
- **Complete Streets:** Evaluate streets for safety, comfort, and access for all users, particularly those outside vehicles such as pedestrians, bicyclists, and transit-users.

10 FAST Act Planning Factors

The Fixing America's Surface Transportation (FAST) Act includes 10 planning factors that must be applied to all projects and programs of metropolitan planning organizations. These are:

1. Support the **economic vitality** of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.
2. Increase the **safety** of the transportation system for motorized and nonmotorized users.
3. Increase the **security** of the transportation system for motorized and nonmotorized users.
4. Increase **accessibility** and **mobility** of people and freight.
5. Protect and enhance the **environment**, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns.
6. Enhance the **integration** and **connectivity** of the transportation system, across and between modes, for people and freight.
7. Promote efficient **system management** and operation.
8. Emphasize the **preservation** of the existing transportation system.
9. Improve the **resiliency** and **reliability** of the transportation system and reduce or mitigate stormwater impacts of surface transportation.
10. Enhance **travel** and **tourism**.

02

Connect 2045

WHERE ARE WE NOW?

PART 1: OUR TRANSPORTATION SYSTEM

PART 2: TRENDS & ISSUES



EVERY PLAN presents a snapshot in time and reflects the moment it is in. The first step in the process, therefore, is to have a full understanding of where we have been and where we are now. To ask questions like: “In what areas does our transportation system excel?” And, “In what ways can it serve us better?”

We also need to anticipate where we are headed. “How is the region growing and changing?” And, “What are the trends and issues likely to impact the transportation system in the future?”

This chapter is split into two sections. Part 1 summarizes the state of the system across the Greater Portland region as it exists today. Part 2 discusses the trends and issues that are likely to impact the transportation system in the years ahead.

PART 1:

OUR TRANSPORTATION SYSTEM

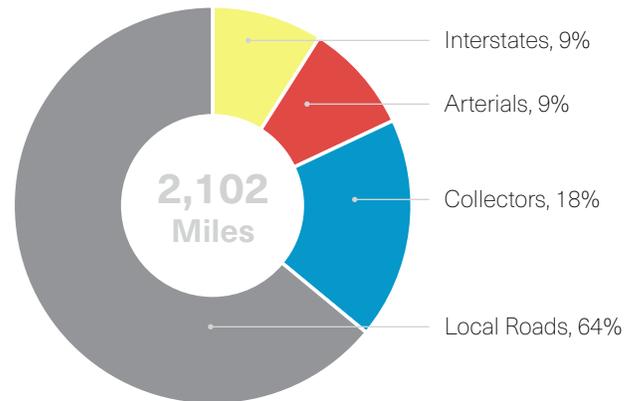
The Road Network

IN THE PACTS REGION there are approximately 2,102 miles of publicly maintained roads. Of these, 739 miles (or 36%) are interstates, arterials, and collector roads that the MaineDOT, Maine Turnpike Authority, and PACTS are tasked with maintaining and improving. The remaining 1,363 miles (or 64%) are local roads maintained by the municipalities.

Road Classification

The federal functional classification system uses established guidelines to determine how roads are planned and engineered. A road's classification helps inform speed limits, design, and accessibility, among other considerations.

- **Interstates** are designed for mobility, high-speeds, and long-distance travel. Interstates in the region include I-95 (the jurisdiction of the Maine Turnpike Authority) and I-295 (the jurisdiction of the MaineDOT). Altogether, there are 183 miles of interstate to maintain in the region.
- **Arterials** are the main routes connecting cities and towns to the highway network. Arterials have limited access from adjacent roads and provide the fastest, most direct method of travel (though speed limits are typically lower in urban areas). There are 183 miles of arterials in the region. Although it varies by location, jurisdiction and responsibility for arterial roads is shared between MaineDOT, local municipalities, and PACTS.

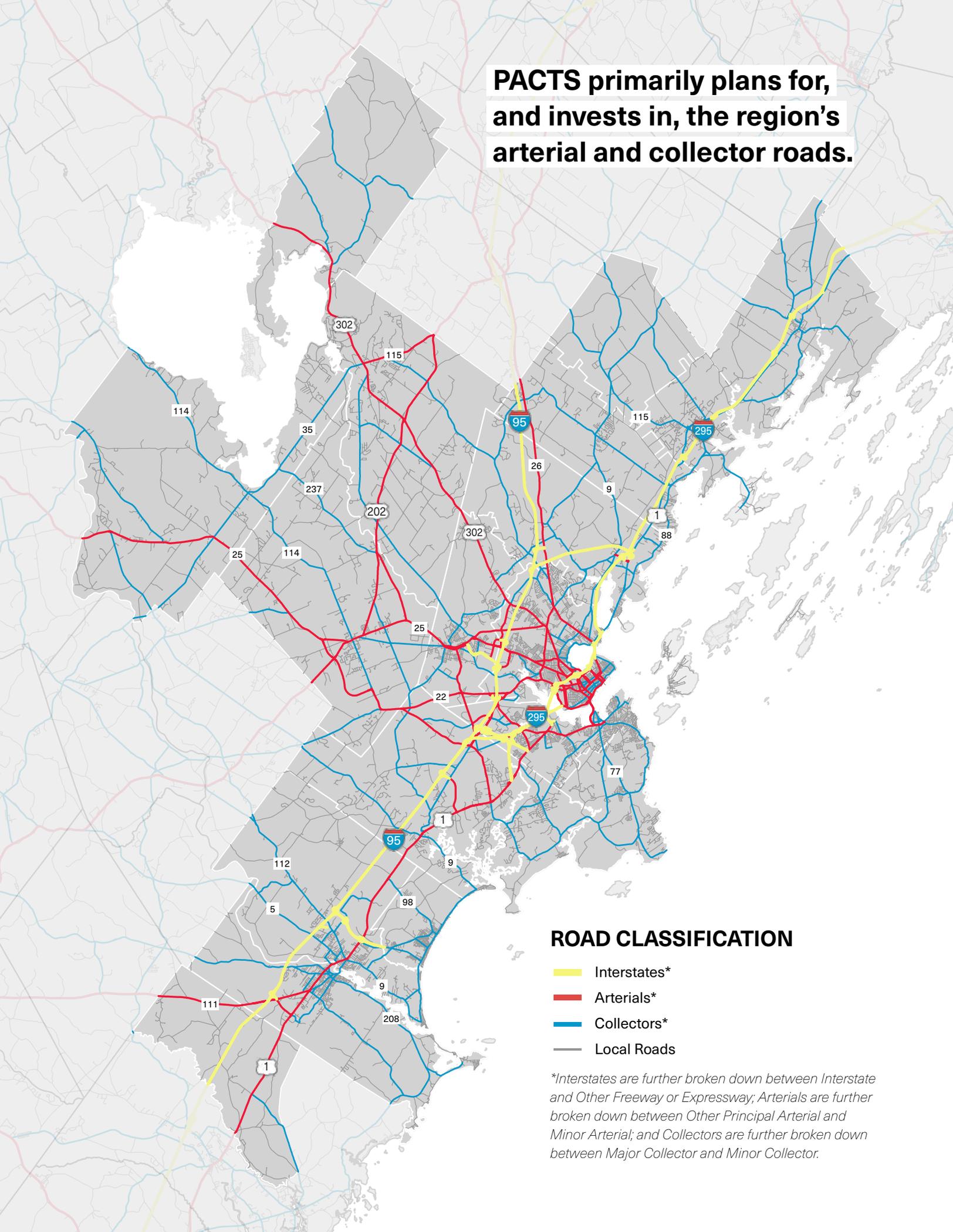


Road Classification in the PACTS Region

Although collector, arterial, and interstate roadways represent roughly 1/3 of total miles, they carry the majority of vehicle traffic.

- **Collectors** link smaller towns, villages, neighborhoods, and major facilities to the arterial network. Traffic is collected from local residential roads and delivered to the nearest arterial. There are 373 miles of collector roads in the region. Similar to arterials, jurisdiction and responsibility for collector roads is shared between MaineDOT, local municipalities, and PACTS depending on the location.
- **Local Roads** are the most common roads. They are specifically designed to have high accessibility and functionality for all modes and all users. Local roads connect to collector and arterial roads and are typically not used for thru-traffic. In the PACTS region, there are 1,363 miles of local roads which are maintained by municipalities.

PACTS primarily plans for, and invests in, the region's arterial and collector roads.



ROAD CLASSIFICATION

-  Interstates*
-  Arterials*
-  Collectors*
-  Local Roads

**Interstates are further broken down between Interstate and Other Freeway or Expressway; Arterials are further broken down between Other Principal Arterial and Minor Arterial; and Collectors are further broken down between Major Collector and Minor Collector.*

Interstates, arterials, and collectors carry the vast majority of vehicle traffic.

North Windham
22,000

Interstate 295
23,000

Morrills Corner
28,000

Gorham Village
Routes 25/202
20,000

Tukey's Bridge
34,000

Routes 22/114
25,000

Route 1
23,000

Interstate 95
31,000

Route 1
20,000

TRAFFIC VOLUMES

- < 10,000 vehicles per day
- 10,001-20,000 vehicles per day
- 20,001-30,000 vehicles per day
- >30,000 vehicles per day

**This map shows traffic volumes for interstate, arterial, and collector roads only. All estimates are approximate. The data represents the annual average. Volumes often increase dramatically in the summer and decline in the off-season. Traffic volumes also change throughout the day and week.*

Source: MaineDOT Factored Annual Average Daily Traffic (AADT)

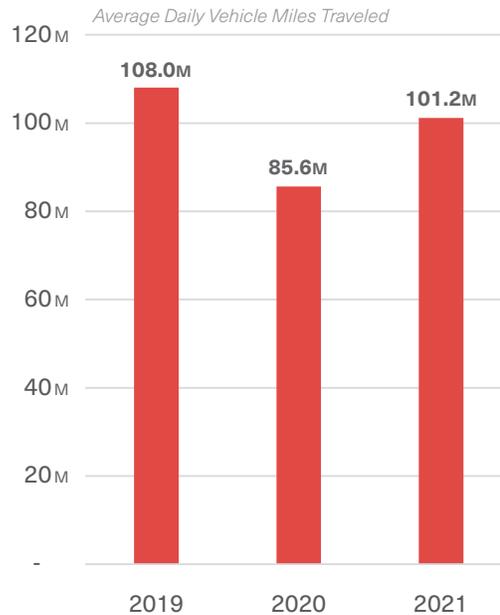
Traffic Volumes

Traffic volumes generally match the hierarchy of the federal functional classification system of interstates, arterials, collectors, and local roads. As the map on the previous page shows, traffic volumes are highest on interstates and arterials where the annual average of vehicles per day often ranges between 20,000 to 30,000 or more. In particular, Interstate 95 from Biddeford to Portland and Interstate 295 from Freeport to Portland experience the most vehicle traffic in the region. Traffic volumes are also highest at major chokepoints, or bottlenecks, in the road network. For example, Morrills Corner in Portland, Route 1 in Saco, and Route 302 in Windham all experience high levels of traffic.

Traffic Volume Trends

While the map on the previous page shows average daily traffic volumes (the total volume of vehicle traffic on a road per year divided by 365 days), traffic is never static. Here in Maine, it often increases substantially in the summer and decreases in the off-season. Likewise, volumes change throughout the day and week. Additionally, global factors such as the strength of the economy, gas prices, and the COVID-19 pandemic, also impact traffic volumes.

The pandemic, in particular, created a considerable reduction in traffic volumes — and congestion — throughout much of 2020. As the graph below shows, in 2020 the average daily miles traveled within the PACTS region was 12.5% lower than in 2019. Traffic volumes rebounded in 2021, but were still six percent lower than 2019 levels.

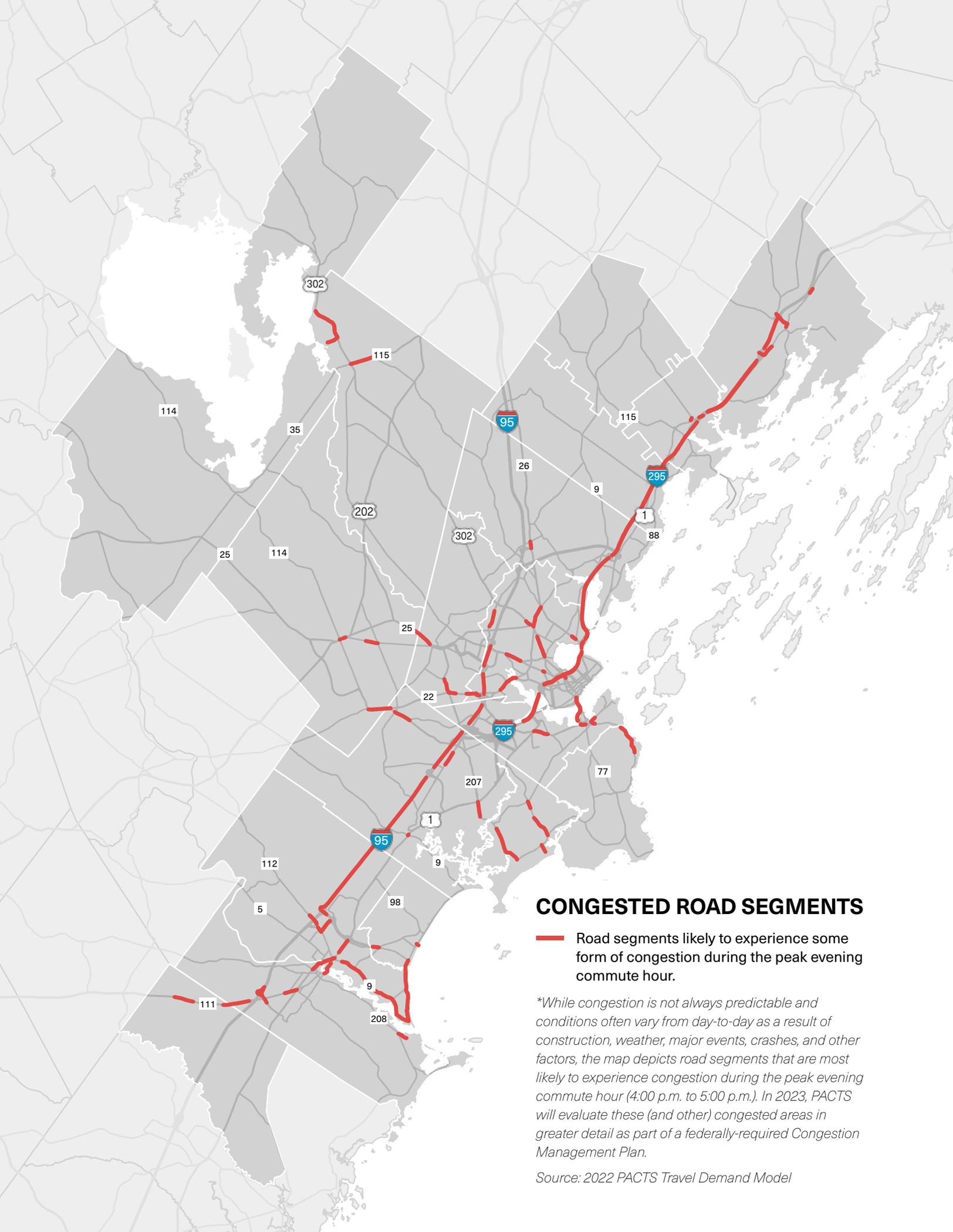


Traffic Volume Trends

The graph above shows the average daily vehicle miles traveled for the PACTS region from 2019-2021. (To aid with interpretation, in 2019 the total vehicle miles traveled by people within the region averaged to 108 million miles per day). The region experienced a dramatic dip in traffic during the height of the pandemic in 2020. Traffic volumes rebounded in 2021, but have not returned to pre-pandemic levels yet. *Source: Streetlight Data Estimates*

As people and businesses continue to recover from the pandemic, uncertainty remains as to when traffic volumes will “return to normal,” or if they ever will. One trend that has emerged since the pandemic is a change in commute patterns. Rush-hour traffic is now spread more throughout the day, and peak commute hour has shifted to later in the morning. This is largely attributed to a newfound ability among many to work from home as well as increasingly flexible work arrangements.

For example, someone may start their workday at home, take a short break to take their kids to child care, then make their way to the office later in the morning. For someone else, a flexible schedule may mean they work from home two-to-three days a week and commute to work on the other days. These small changes can add up to noticeable differences in traffic patterns and congestion. Whether they remain lasting trends will likely depend on the extent to which remote work remains commonplace.



CONGESTED ROAD SEGMENTS

— Road segments likely to experience some form of congestion during the peak evening commute hour.

**While congestion is not always predictable and conditions often vary from day-to-day as a result of construction, weather, major events, crashes, and other factors, the map depicts road segments that are most likely to experience congestion during the peak evening commute hour (4:00 p.m. to 5:00 p.m.). In 2023, PACTS will evaluate these (and other) congested areas in greater detail as part of a federally-required Congestion Management Plan.*

Source: 2022 PACTS Travel Demand Model



Congestion in Greater Portland

In 2023, PACTS will evaluate congested areas in greater detail as part of a federally-required Congestion Management Plan.

Left: Congestion on Main St. in Yarmouth. (Photo: GPCOG) **Right:** Congestion on Route 302 in North Windham. (Photo: GPCOG)

Congestion

As more people move to the region and more jobs are created, the demands placed on our transportation system will continue to increase. Congestion occurs when the number of vehicles exceeds the capacity of limited roadway space. Congestion is typically concentrated during peak morning and evening commute hours (8:00 a.m. to 9:00 a.m. and 4:00 p.m. to 5:00 p.m., respectively).

Congestion has many negative impacts including unpredictable travel times, increased freight costs, lost productivity, and reduced quality of life. However, while it may sound counterintuitive, not all congestion is bad. Places that are healthy economically (for example, a bustling Main Street or a lively downtown) are often crowded and congested. Eliminating congestion entirely from these places may not be realistic or desirable and could inadvertently diminish the economic health of that city or town.

PACTS uses a travel demand model as one way to evaluate the effects of congestion and traffic volumes on the road network. The map on the previous page depicts road segments the model (updated in 2022) identified as likely to experience congestion during the peak

evening commute hour. As the map illustrates, congestion occurs throughout the region and is most acute on major corridors and at (or near) intersections.

In 2023, PACTS will update its Congestion Management Plan, a federal requirement for metropolitan areas with a population exceeding 200,000 people. The plan will evaluate congested areas in greater detail and develop regionally agreed-upon approaches to fund projects and initiatives that reduce adverse impacts. Common ways to alleviate congestion include smart traffic signals or roundabouts at intersections, better/modified street network connectivity, improved walking and cycling facilities, and increased investment in public transit, among other strategies.

Finally, the Congestion Management Plan will use the travel demand model to explore the relationship between transportation and land use. More specifically, how two future scenarios (a business-as-usual land use scenario and an aspirational compact growth scenario) may impact congestion, vehicle miles traveled, and emissions. The results of these scenarios will inform decision-making on the best approaches to meet our regional greenhouse gas emissions goals.

Pavement Conditions

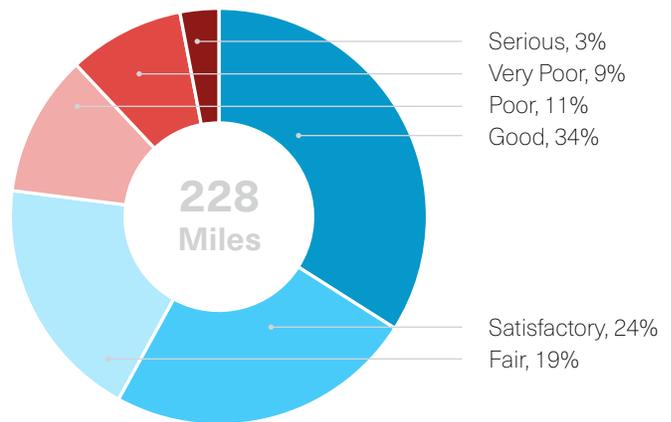
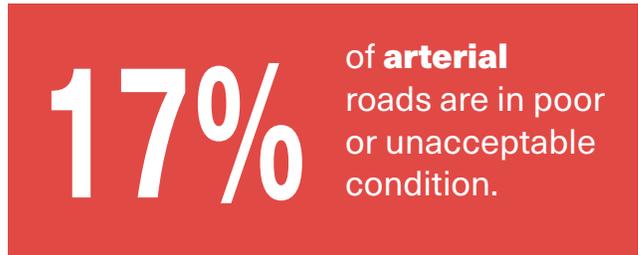
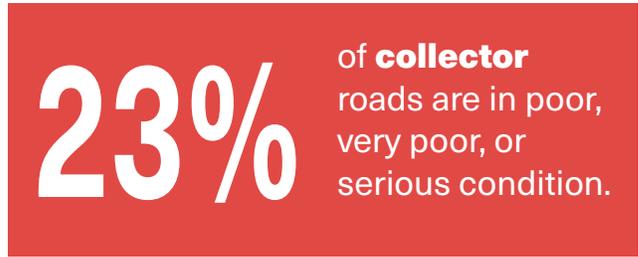
Because arterial and collector roads experience so much demand and provide such critical connections, it is essential to keep them in good condition.

PACTS regularly performs pavement condition assessments of the region's collector roads as a way to prioritize investments. According to the most recent 2018 assessment, of the 228 miles of collector roads evaluated, approximately 11% (25 miles) were in poor condition, 9% (21 miles) were in very poor condition, and 3% (7 miles) were in serious condition. Taken together, 23% (53 miles) of collector roads need immediate attention.

MaineDOT collects similar data for arterial roads. An analysis of this data indicates that of the 172 miles of arterial roads evaluated, approximately 7% (11 miles) were in unacceptable condition, and 10% (17 miles) were in poor condition. Taken together, 17% (28 miles) of arterial roads need immediate attention.

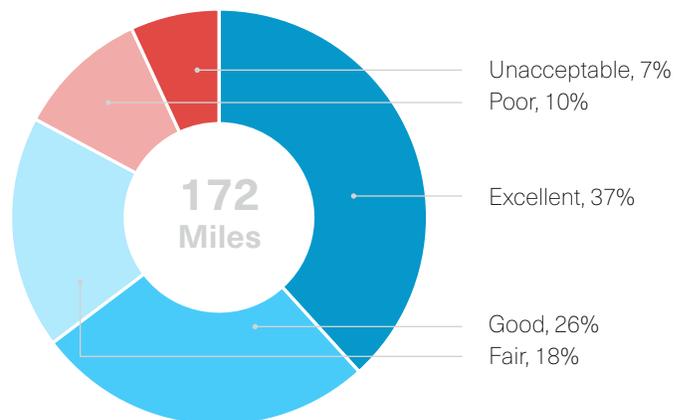
Pavement Management

As with most everything else, preventive maintenance can save money in the long run. A road starts out in excellent condition when it is newly constructed. Midway through its life, a low-cost repair such as crack seal and patch can slow the deterioration of the road. However, if these low-cost preventive maintenance treatments are not made, it takes only a few years for this window of opportunity to pass. Afterwards, the road will need vastly more expensive overlay treatments or a complete rebuild.



Collector Road Conditions

In 2018, 23%, or 53 miles, of collector roads were in poor, very poor, or serious condition.



Arterial Road Conditions

Approximately 17%, or 28 miles, of arterial roads are in unacceptable or poor condition.



We are managing a transportation system in decline.

Costs of Maintaining the System

Our region's estimated cost to maintain bridges, arterials, and collectors is about \$52 million per year. Local roads (not eligible for PACTS' federal funding), active transportation infrastructure, and public transit also require significant investment. Climate change will further exacerbate these upkeep challenges.

The bottom line is we are managing a transportation system in decline. It is challenging to maintain what we have, let alone build for the future — yet we must do both. In order to succeed we must repurpose existing infrastructure, raise new revenues, and change how we travel.

The Infrastructure Investment and Jobs Act, passed in 2021, is a once-in-a-generation opportunity to obtain much needed infrastructure funding for the region. The law also acknowledges that we must do more with less. According to recent policy guidance, the law directs the Federal Highway Administration to prioritize funding projects that “improve the condition and safety of existing transportation infrastructure within the right-of-way before advancing projects that add new general purpose travel lanes serving single occupancy vehicles.”¹

¹ [Policy on Using Bipartisan Infrastructure Law Resources to Build a Better America](#). USDOT, 2021.

Balancing Competing Interests

Unlike local roads and interstates, which have relatively straightforward functions, arterial and collector roads need to strike a tricky compromise between multiple competing interests. Arterial and collector roads are asked to balance high demand, and a desire to get places quickly, with maintaining access to important destinations. Moreover, they are tasked with doing so in a way that is safe and accommodates all users and modes (pedestrians, cyclists, public transit, semi-trailer trucks, etc.). In short, arterial and collector roads are where the “hustle and bustle” happens. For this reason, they are often the most challenging to plan for and design.

Modern Roadway Design

There is a growing movement in our region, and across the country, to rethink the way we’ve been designing our major roadways. For many years we designed and built roads as though they had one function — to move as many vehicles as quickly as possible. Unfortunately, this type of design is unsafe, presents accessibility challenges (for nearby residents, pedestrians, bicyclists, people with disabilities, and transit riders), and often results in high levels of noise and air pollution. Despite our best efforts, major roadways are also prone to congestion, travel delays, and unreliable travel times that make them unpleasant for all users.

The reality is our roadways can — and should — do much more than just move cars. They can move people on foot, on bikes, and on transit, without hurting vehicular throughput or safety. Our roads can be more than a way to get somewhere else; they can be places, too — public places where people meet, sit and socialize, conduct business, wander about, play, and more.

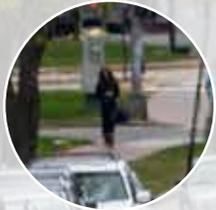
Arterial and collector roads are where the “hustle and bustle” happens. For this reason, they are often the most challenging to plan for and design.

The Federal Highway Administration has acknowledged this shift in approach and recently updated its design standards for roads on the national highway system. The administration now, “encourages the use of flexibility and a context-sensitive approach to consider a full range of project and user needs and the impacts to the community and natural and human environment.”²

State departments of transportation are taking notice. In 2020, MassDOT added three new “controlling criteria” to its own design guidance, requiring pedestrian and bicycle infrastructure (including transit stop improvements) in the design of new state-run projects. Here in Maine, MaineDOT adopted its Complete Streets Policy in 2014. More recently, the Department launched its Village Partnership Initiative in 2022, a new funding program focused on developing “place-making” transportation projects that improve Maine’s villages and downtowns.

² [Final Rule on Design Standards for Highways](#). FHWA, 2020.

Our roadways can do much more than just move cars. They can move people on foot, on bikes, and on transit, without hurting vehicular throughput or safety.



Park Street in Downtown Portland

Photo: Corey Templeton

The Bicycle & Pedestrian Network

THE ROAD NETWORK is essentially built-out for vehicles because in most cases we do not have the space, resources, or need to add lanes or build new roads. However, there are many opportunities to expand the region's bicycle and pedestrian network. In fact, to meet the state's ambitious emissions reduction goals we must cultivate more sustainable options like walking, biking, or taking public transit — especially in our urban areas.

Due to growing demand, bicycle and pedestrian facilities have proliferated in recent years. This includes sidewalks and crosswalks, bike lanes, shared use lanes, roads with paved shoulders, multi-use paths, trails, and other amenities. However, substantial gaps remain. Many places in the region are simply inaccessible — and unsafe — for walking and biking.

Completing the Network

Developed in 2018, the PACTS active transportation plan *Getting There From Here* provides a blueprint for how we can improve walking, biking, and access to public transportation throughout the region. The plan envisions a future where the region has, “a complete network of accessible trails, paths, ways, and modes serving all people and places, promoting a culture of healthy living and a vibrant economy.”

“The PACTS region will have a complete network of accessible trails, paths, ways, and modes, serving all people and places, promoting a culture of healthy living and a vibrant economy.”

~ Vision statement from the PACTS Active Transportation Plan *Getting There From Here*.

Guiding Framework

What does a complete network for walking and biking look like? *Getting There From Here's* guiding framework is a network of highly walkable and bikeable villages, downtowns and urban centers, connected by longer-distance walking and biking routes.

The plan recognizes that our region's villages, downtowns, and urban centers are hot spots for walking, biking, and accessing public transportation. As such, they are the most practical places to invest in bicycle and pedestrian improvements. In these places, it should be just as easy (if not easier) to walk or bike to get around as it is to drive.

At the regional scale, these high-activity centers must also be connected to each other. *Getting There From Here* identifies a number of longer-distance active transportation routes (regional on-road bike routes and off-road multi-use trails) that, when complete, can connect the centers and fulfill both recreation and commuting functions.

While the plan outlines a vision for what a complete network might look like, and where to prioritize investments, there is no one-size-fits-all approach for every road or street. For that reason, it is important to consider a Complete Streets approach for every project we undertake.

Complete Streets

Complete Streets provide convenient, safe, and equitable access on our roads for all users. Adopting a Complete Streets policy formalizes a community's intent to plan, design, operate, and maintain streets so they are safe not just for vehicles, but also for pedestrians, cyclists, and public transit users, regardless of age or ability.

Although there is no singular design prescription for Complete Streets — each street is unique and responds to its community context — roads that are planned and designed using a Complete Streets approach often include: sidewalks, frequent and safe crossings, accommodation for bikes (bike lanes, shared lanes, or paved shoulders), accessible transit stops, and narrower travel lanes to slow traffic, among other features.

At the time of this writing, many communities in the region have adopted Complete Streets policies, as well as the MaineDOT. PACTS is currently developing a Complete Streets policy that, if adopted, would help ensure a Complete Streets approach is used for all PACTS-funded projects.

Key Bicycle & Pedestrian Facilities

Based on the region's variety of traffic patterns, land use, and distances between destinations, we need a range of context-sensitive bicycle and pedestrian infrastructure. To determine the facility type with the most benefits for each setting, we must consider compatibility with surroundings and spatial limitations. What follows are descriptions of key active transportation facilities.



Protected Bike Lanes

Protected bike lanes have some form of vertical separation between moving vehicle traffic and the bike lane. Examples of separation include plastic posts, bollards, curbs, planters, raised bumps, or on-street parking. Protected bike lanes offer a high amount of protection and are exclusively for people on bikes.



Bike Lanes

Bike lanes are designated bikeways that have stenciled bicycle symbol pavement markings and often have accompanying roadside signs. Bike lanes are designated for exclusive or preferential use by bicycles. They may be located on streets with or without on-street parking.



Paved Shoulders

Paved shoulders are located to the right of the travel lane and delineated by a white pavement stripe. They are not designated specifically for bicycles, but are available for bicycle, walking, and wheeled use and provide room for separation from vehicle traffic. Paved shoulders are located on roads with and without curbing.



Shared Lanes

Shared lanes are travel lanes shared by motorists and bicyclists. They are often used when the roadway is not wide enough to provide a bike lane. "Share the Road" signs are typically placed along roads where a bike lane, or paved shoulder, transitions to a shared lane due to reduced pavement width.



Multi-Use Paths

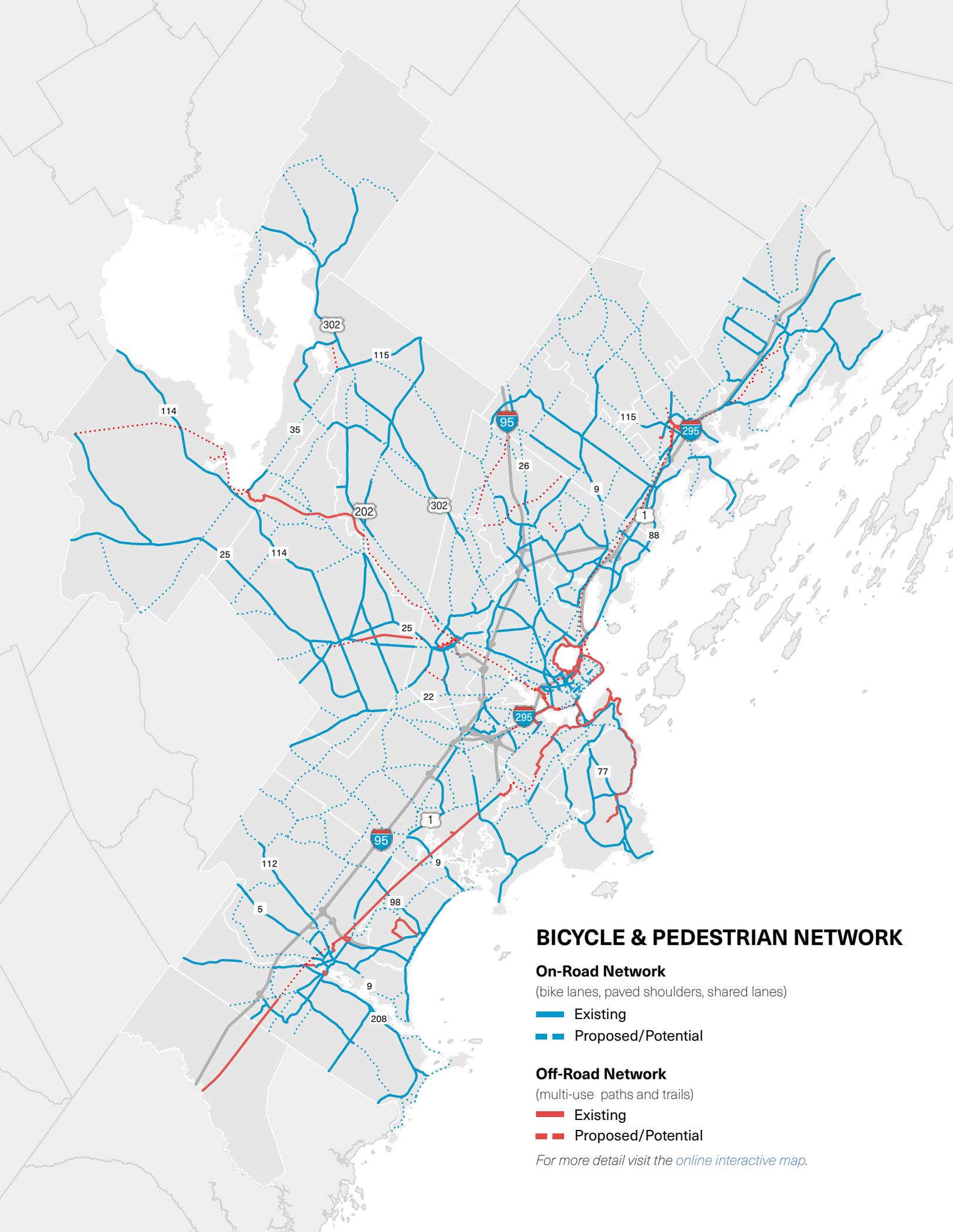
Multi-use paths are physically separated from vehicle traffic and intended for multiple types of users including bicyclists and pedestrians. They have a firm, compacted surface (paved, stone dust, etc.) that can typically accommodate wheelchair use and road bicycles.



Trails

Trails are intended primarily for pedestrians and mountain bikers. They are distinct from pathways by surface type and width, often with a dirt surface and narrower width. Trails primarily serve recreation purposes, such as loop trails through conservation lands. However, trails can provide an important transportation function when they connect one area to another.

*For additional guidance see the Federal Highway Administration's [Bikeway Selection Guide](#).



BICYCLE & PEDESTRIAN NETWORK

On-Road Network

(bike lanes, paved shoulders, shared lanes)

- Existing
- Proposed/Potential

Off-Road Network

(multi-use paths and trails)

- Existing
- Proposed/Potential

For more detail visit the [online interactive map](#).

Existing and Proposed Network

To track progress and identify gaps, PACTS coordinates with each municipality to maintain a spatial database of key bicycle and pedestrian facilities. The map on the previous page is the most current inventory of existing and proposed/potential facilities. To simplify viewing at the regional scale, the map shows just on-road facilities (on major roads only) and off-road facilities. An interactive version provides more localized detail and breaks out each facility type (e.g., bike lane, paved shoulder, or shared lane).

As mentioned previously, in our region there is a distinct lack of safe and accessible bicycle and pedestrian infrastructure. This means fewer people feel safe biking to work, letting their kids walk or bike to school, or even taking the dog for a walk. As more dashed lines become solid lines, what may seem like a minor change on the map can unlock a whole new lifestyle for many.

Regional Off-Road Routes

A network of regionally significant on- and off-road active transportation routes is emerging in the region. These initiatives, shown above right, are beneficial for a myriad of reasons. In addition to providing opportunities for recreation, longer-distance routes can also function as viable transportation corridors.

People can use them to safely commute to work or school, go to the beach, or cross town to run errands.

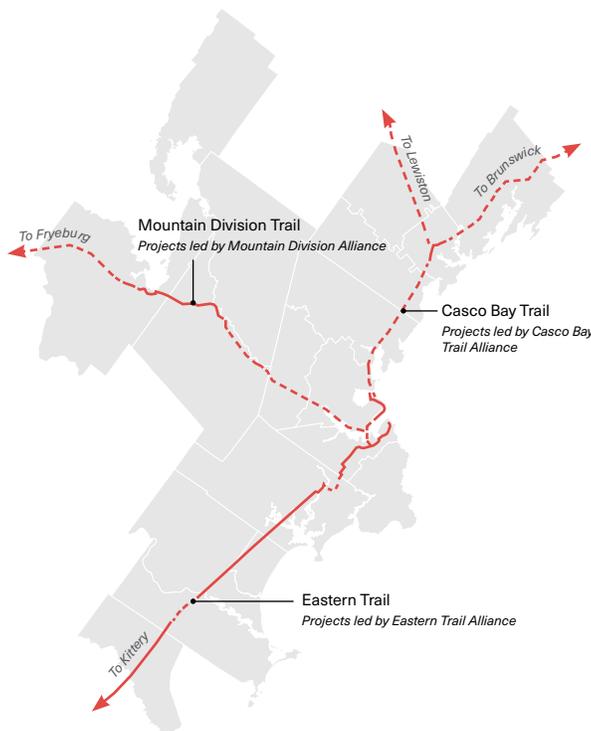
Several local groups are advocating for the build out of a regional off-road trail network that would connect multiple communities and key destinations in the region. The map to the left shows completed (solid red line) and proposed (dashed red lines)

sections of the network, along with the primary booster organization for each proposed new section.

The proposed Mountain Division and Casco Bay trails would be built along rail corridors. In 2021, the Maine Legislature gave the MaineDOT authority to establish Rail Use Advisory Councils to “facilitate discussion, gather information, and provide advice to the commissioner regarding the future use of rail corridors.”

After a seven-month review, the 12-member Mountain Division Rail Use Advisory

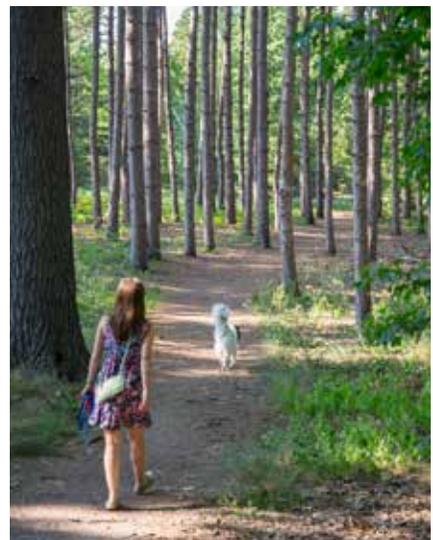
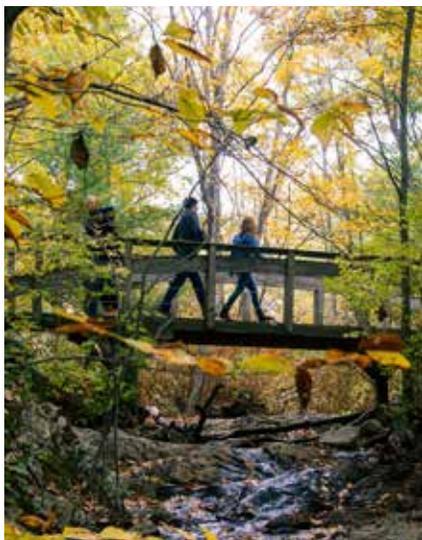
Council voted 11-1 to recommend the “interim conversion of 31 miles of the existing railroad track to an interim 10-foot wide paved bicycle and pedestrian trail.” A similar rail use advisory council is currently meeting to discuss options for the St. Lawrence and Atlantic rail corridor between Portland and Auburn (the Casco Bay Trail).



The Vision for a Regional Off-Road Trail Network
A number of groups have organized to advocate for the build out of a regional off-road trail network that would connect multiple communities and key destinations throughout the region.



In many cases trails are the safest, most pleasant, and most direct way to get places.



Trail organizations and land trusts throughout the region are making great strides to both maintain the trails we have and build out a network of new ones. **Top:** Back Cove Trail in Portland (GPCOG). **Bottom Left:** Fore River Trails in Portland (Corey Templeton). **Center:** Randall Orchard Trail in Standish (Rachelle Curran-Apse). **Bottom Right:** Baxter Woods in Portland (Corey Templeton).

Local Trail Networks

Local, neighborhood-scale trails are a vital transportation resource in Greater Portland that should not be overlooked. Trail organizations and land trusts throughout the region are making great strides to both maintain the trails we have and to build out a network of new ones.

Trails are a key part of a healthy, walkable community. Local trail networks connect individuals with nature, but also to businesses, neighborhoods, schools, and other key

destinations. A low-cost option that can go where roads cannot, in many cases trails are the safest, most pleasant, and most direct way to get places. Especially in urban areas, trails are the connective tissue supporting our transportation network and a respite from other more heavily trafficked routes.

Electric Bikes

In the last several years, electric bicycles (e-bikes) have seen tremendous growth and are now outselling electric cars. The sudden popularity of e-bikes is largely attributed to advances in battery technology, the “pandemic bike boom,” rising gas prices, and a growing desire by many to reduce their carbon footprint. Young people are purchasing e-bikes as a preferred way to get around congested urban areas, young families are purchasing e-cargo bikes as a way to transport children and run errands, and older adults who may have thought their riding days were over are using e-bikes to stay active.

With e-bikes, people can go farther with less effort, which means they are more likely to use them to commute longer distances. Additionally, because they are so easy to use, and fun, e-bike owners are also more likely to use them for short errands around town. A recent study found that people who buy e-bikes more than double their bicycle use.³ While not for everyone, the rising popularity of e-bikes (and other personal electric vehicles such as e-scooters and e-skateboards) is a promising trend that can potentially shift more people away from private vehicle use.

Bike Sharing

In August of 2022, Maine’s first bike-share program was introduced in Portland. Initially launched with 50 bikes, the program will soon offer 200 bikes (including 50 electric bikes) for short-term use from over 30 docking stations across the City. A company called Tandem Mobility operates the program with sponsorship from MaineDOT and private companies in



City of Portland's Bike Share Program

In August of 2022, Portland launched Maine’s first bike-share program. When fully implemented, the program will offer 200 bikes (including 50 electric bikes) with docking stations and racks widely distributed throughout the City.

Photos: City of Portland, Claire Luning

exchange for advertising space at stations or on the bikes. Riders can unlock up to two bikes at a time through the Movatic app by scanning a QR code or entering the bike’s number at one of the docking stations. Riders can unlock a bike for an initial upfront fee and a smaller per-minute rate. A monthly membership is also available, which removes unlock fees and cuts the per-minute rate in half. When done, riders can return bikes to any docking station.

With the number of bikes, the wide distribution of docking stations throughout the City, and affordability of rentals, Portland’s bike-share program seeks to create more multi-modal transportation options for residents and visitors whether commuting, running errands, or simply recreating around town.

³ [Do People Who Buy E-bikes Cycle More?](#) Science Direct, 2020.

The Public Transportation Network

GREATER PORTLAND is home to Maine's largest public transportation network. Seven transit agencies (described below) provide bus, ferry, rail, and demand-response service across 13 municipalities. The network also provides access to and from other key destinations outside the region, including Brunswick to the northeast, the Lakes Region to the northwest, and New Hampshire and Boston to the south. The public transportation system typically

provides over four million annual trips and serves as a critical lifeline for those who do not have access to personal vehicles. *Transit Tomorrow* (discussed shortly) serves as the region's long-range public transportation plan. As such, this section of *Connect 2045* is brief; it is intended to review the transit network and highlight recent efforts to implement *Transit Tomorrow's* goals.



BUS SERVICE

The region has three bus service providers.

Biddeford Saco Old Orchard Beach (BSOOB) Transit is an urban fixed-route bus network in Biddeford, Saco, and Old Orchard Beach with regional service to Scarborough, South Portland, and Portland.

Greater Portland METRO is an urban fixed-route bus network in Portland and serves surrounding communities as far west as Gorham and north as Brunswick with regional service.

South Portland Bus Service (SPBS) is an urban fixed-route bus network in South Portland with service to Portland and Scarborough.



BUS & DEMAND RESPONSE SERVICE

Two agencies provide both bus and demand response services.

Regional Transportation Program (RTP) operates both a shared-ride demand response service that requires riders to book trips in advance and the Lakes Region Explorer — a fixed route bus service between Bridgton and Portland. RTP is the ADA paratransit provider for Cumberland County and provides many MaineCare-funded rides.

York County Community Action Corporation (YCCAC) provides a number of transportation services including shared-ride demand response, flex-route services, MaineCare-funded rides, and seasonal trolleys.



FERRY

Casco Bay Lines (CBL) is a ferry service connecting the Casco Bay islands to each other and with Portland.



RAIL

Northern New England Passenger Rail Authority (NNEPRA) manages the operations of the Downeaster, a passenger rail service that runs between Boston, Portland, and Brunswick with intermediate stops.



Above Left: Casco Bay Lines ferry with Fort Gorges in the background. **Above Right:** The Mill Creek Transit Hub in South Portland. **Center Left:** A BSOOB Transit bus on Main Street in Biddeford. **Center:** A METRO bus picking up passengers in Downtown Portland. **Center Right:** An RTP shuttle picking up a passenger. **Bottom Left:** YCCAC's Sanford Transit vehicle. **Bottom Right:** An aerial view of the Downeaster en route.

Photos: Casco Bay Lines, GPCOG, YCCAC, and NNEPRA

Other Transportation Providers

In addition to the public transit agencies, there are many private and nonprofit transportation providers.

INTERCITY BUS OPERATORS

- **Concord Coach** offers service from Portland to Boston, Bangor, and New York City.
- **Greyhound** provides service between Portland and other cities in Maine and the Northeast.
- **Mermaid** provides daily van transportation service between Portland and Logan and Manchester Airports.

COMMUTER PROGRAMS

- **GO MAINE** is the statewide travel resource program. The program matches up carpoolers, helps form vanpools, and rewards members for green commutes (carpooling, vanpooling, walking, biking, taking transit, or teleworking).

DOOR-TO-DOOR SERVICE

- **Independent Transportation Network** is a non-profit, fee-based service that provides door-to-door service to seniors and to persons with visual impairments. The service operates seven days a week, 24-hours a day within a 15-mile radius of Portland.
- A number of communities in the region have **Volunteer Driver Programs**.
- Several **Taxi** services operate within the region (including water taxi service).
- **Uber / Lyft** operate within the urban areas of the region.

FERRY SERVICE

- **Chebeague Transportation Company** is a nonprofit corporation that provides ferry service between Chebeague Island and Cousins Island.

Existing Level of Service

The map on the next page shows the extent of Greater Portland's existing public transportation network. The following briefly outlines the extent of existing services.

- **Fixed-route bus service** is provided to 13 municipalities in the region, though some operators provide connections beyond the region. Much of this service is concentrated in Biddeford, Old Orchard Beach, Portland, Saco, South Portland, and Westbrook. These municipalities have the relatively higher populations and higher densities necessary to sustain fixed-route service. Frequencies and hours of operation vary, but vehicles typically run at least every 60 minutes, with service generally starting up by 6:00 am on weekdays. Weekend service is typically less frequent and has shorter hours of operation. There are several longer-distance routes extending beyond the urban core. GP Metro offers the BREEZ to Brunswick and the Husky Line to Gorham, and RTP offers the Lakes Region Explorer to Bridgton. These services run fewer trips per day and have fewer stops, generally focused on serving town and neighborhood centers.
- **Demand-response and ADA paratransit service** is provided by RTP and YCCAC in Cumberland and York counties, respectively.
- **Passenger rail service** is provided by the Amtrak Downeaster across and beyond the region. In addition to stations in Saco, Old Orchard Beach (seasonally), Portland, and Freeport, service continues north to Brunswick and south to New Hampshire and Boston. There are five trains per day, with service departing Portland southbound between approximately 5:00 a.m. and 6:30 p.m. and northbound between approximately 11:30 a.m. and 1:00 a.m. An additional northbound train, aimed at serving morning commuters to Portland, will be introduced in the coming years. MaineDOT and NNEPRA are also currently evaluating the feasibility of rail service connecting Lewiston/Auburn to Portland.
- **Ferry service** is provided by Casco Bay Lines which operates passenger and car ferry service to Peaks, Great Diamond, Little Diamond, Long, Chebeague, and Cliff Islands in Casco Bay, as well as freight hauling service.

GREATER PORTLAND TRANSIT PROVIDERS

Fixed Route Bus

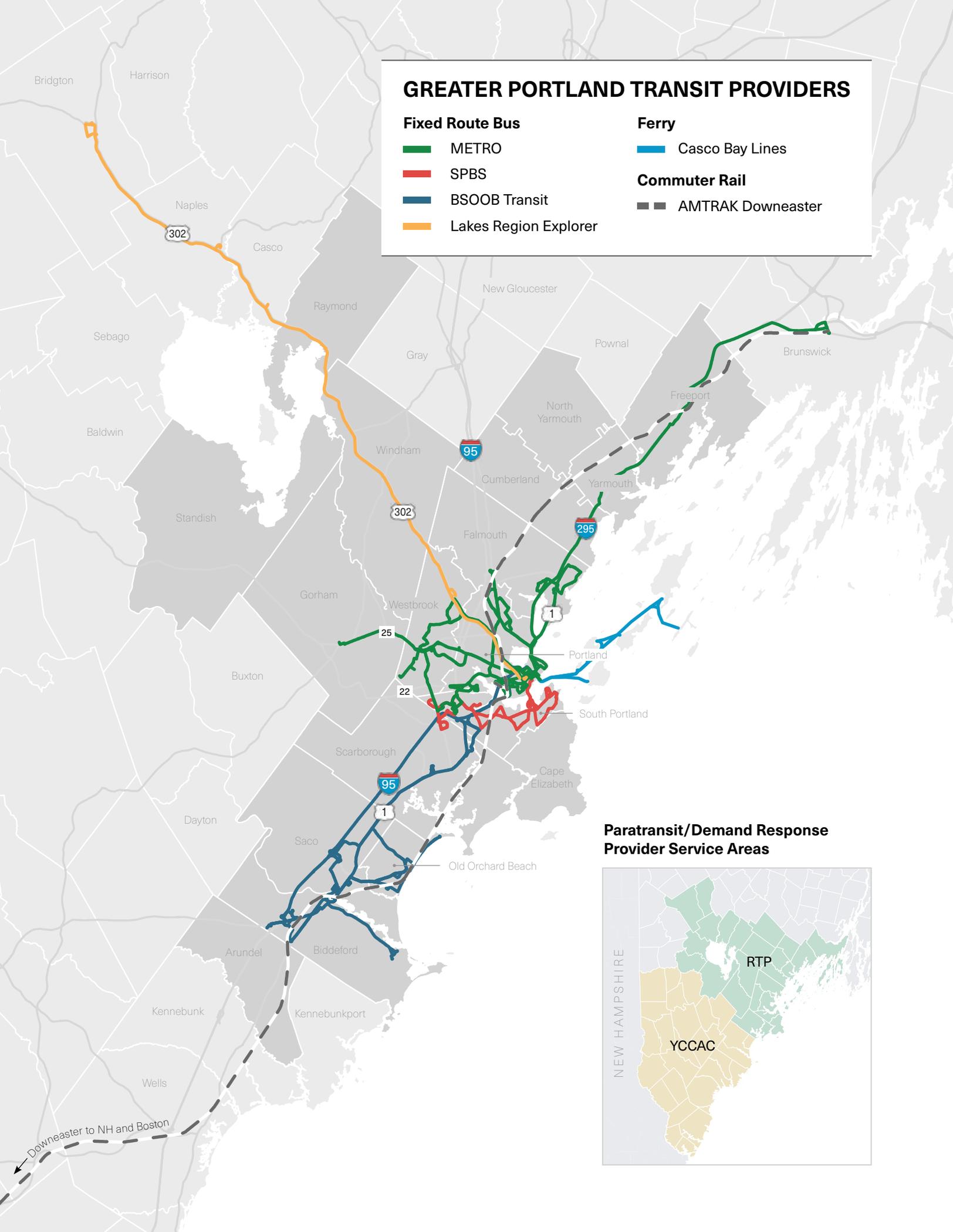
- METRO
- SPBS
- BSOOB Transit
- Lakes Region Explorer

Ferry

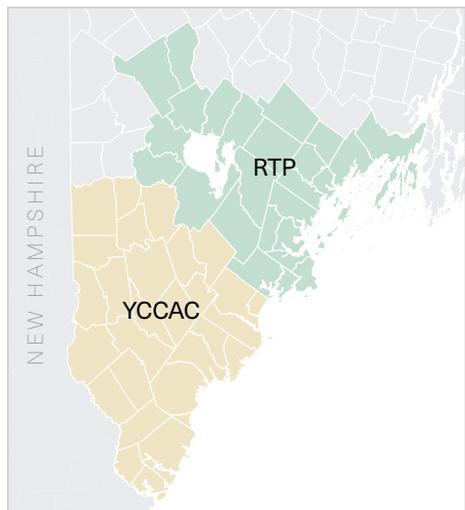
- Casco Bay Lines

Commuter Rail

- AMTRAK Downeaster



Paratransit/Demand Response Provider Service Areas



Downeaster to NH and Boston

Peer Region Analysis

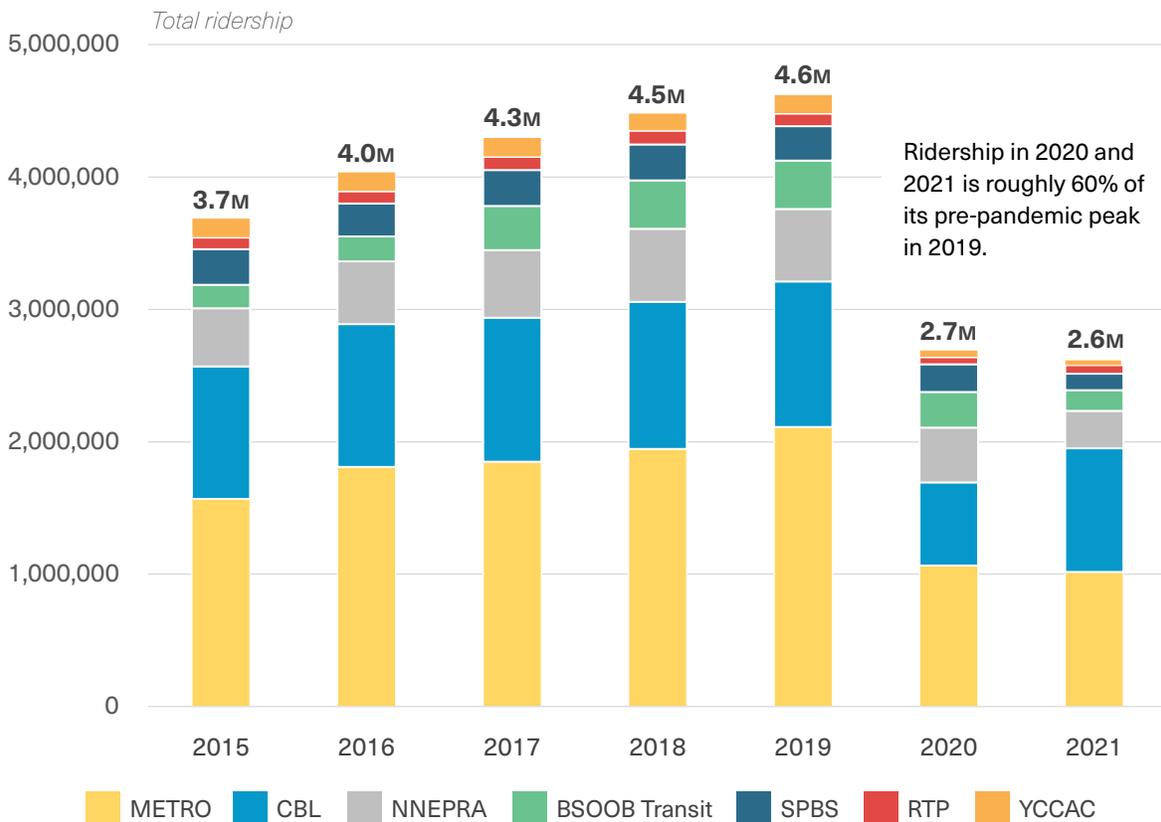
There are seven transit providers operating in our region. Public feedback tells us it can create confusion among riders and discourage new riders from learning the system. It also can create administrative challenges. On the other hand, the region enjoys a truly multimodal system that gives riders travel options both throughout and beyond the region.

Analysis conducted as part of the *Transit Tomorrow* plan (discussed in the following pages) found that the performance of our transit system lags behind that of our peers. Several of our peer cities feature 15- to 20-minute frequencies during peak times and have longer hours of operation. Low frequencies and short hours of operation are among the most critical system deficits. Without these investments transit is often not a competitive alternative to driving.

Ridership Trends and the Pandemic

Prior to the COVID-19 pandemic, transit ridership was on an upward trajectory. As the graph below shows, between 2015 and 2019 the total ridership of all seven transit agencies grew by approximately six percent per year, going from 3.7 million trips in 2015 to a record 4.6 million trips in 2019.

Unfortunately, the public transit agencies suffered a catastrophic blow to ridership with the onset of the pandemic. Ridership totals for 2020 and 2021 plummeted to roughly 60% of their pre-pandemic high in 2019. Across the country, it remains unclear to what degree transit riders will return to their pre-pandemic travel patterns. PACTS is committed to promoting projects and other efforts that encourage ridership recovery and attract new riders.



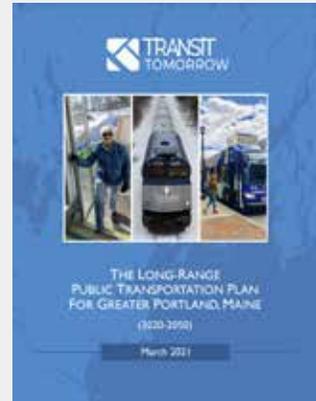
Transit Tomorrow

Despite the massive disruption caused by the pandemic, the region's public transportation agencies have a clear direction forward. Adopted by the PACTS governing body in 2021, *Transit Tomorrow* is an ambitious 30-year strategic plan for enhancing public transportation in the region. Written during the pandemic, *Transit Tomorrow* doubles down on public transportation as an essential strategy for achieving the region's economic, environmental, equity, and land use goals.

A core tenet of the plan, shown in the vision statement to the right, is that we strive for a public transportation system that is, "faster and more affordable than driving a car." To achieve this bold and transformative vision, the plan is centered around four major goals.

- 1. Make Transit Easier** through such measures as developing welcoming stops and adopting innovative customer service technologies (among other strategies);
- 2. Create Frequent Connections** by improving the core functions of our existing service (increasing frequency, expanding service to new places, extending hours of operation);
- 3. Improve Rapid Transit** on key corridors to make transit faster and more affordable than driving a car; and
- 4. Create Transit-Friendly Places** that support more development intensity in urban areas already served by transit.

Among other efforts, two major follow up studies are currently underway to begin to advance the goals of *Transit Tomorrow*. Described in the following pages, these are *Transit Together* and the *Rapid Transit Study*.



Transit Tomorrow's

Vision

Our vision is that by 2050...

"Using our region's public transportation is **faster and more affordable than driving a car**. Our system is funded sustainably and provides reliable and seamless transportation for our community, including commuters, mainland and island residents, and those with limited mobility options. Our communities support the long-term viability of public transportation by focusing new homes and jobs where people already live and work."



Above: The region's transit agencies met to discuss potential changes to the transit network at a workshop in June 2022.

Below: The *Transit Together* team collecting feedback from the public on proposed scenarios for improving the region's bus network.

Photos: GPCOG

Transit Together

Guided by the “Make Transit Easier” and “Create Frequent Connections” goals of *Transit Tomorrow*, the *Transit Together* study is aimed at cultivating a more seamless and integrated regional transit system. The study, which is currently underway, includes two major efforts:

- 1. A regionwide network design.** The region's transit network has developed over many years in a piecemeal and uncoordinated fashion. Informed by public priorities and input from other key stakeholders, the region's transit agencies are working collaboratively to examine the network from a regional perspective based on where existing demand for transit is across the region and what resources are available to serve that demand. This work will result in a network that is better coordinated and will help make transit easier and more convenient for riders. Network redesigns around the country have been effective in driving increased ridership and better serving both transit-dependent people and new riders.
- 2. Regional initiatives.** Seven different transit agencies in a region our size can create administrative challenges and confusion for riders. In this task, the agencies are evaluating opportunities for increased coordination and collaboration across agencies, including regional service standards such as unified fare payment, integrated branding, and more.

Transit Together intends to improve bus service in the Greater Portland region using existing resources and by introducing microtransit where practical. Microtransit is an on-demand transit service where riders can call, or use an app, to schedule a small transit vehicle (for example, a minivan) to drive them to and from their requested destination, or nearby location. (See page 42 for more information on microtransit).

Rapid Transit Study

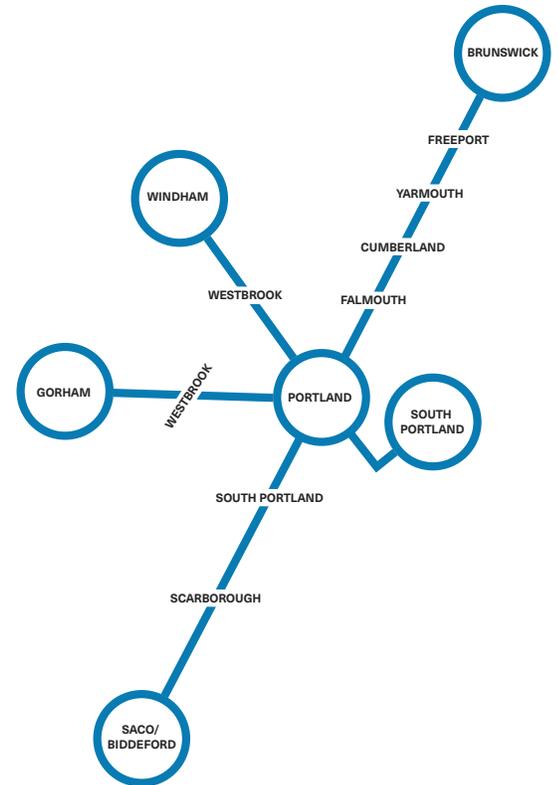
The *Rapid Transit Study* is a critical step towards implementing the region's first rapid transit route. Of the four potential rapid transit corridors identified in *Transit Tomorrow* (shown to the right), the plan recommended the Gorham-Westbrook-Portland corridor for the first in-depth analysis. These communities are some of the fastest growing in Maine and the corridor connecting them has a high concentration of residents, jobs, and underserved population groups.

According to the Institute for Transportation and Development Policy, "rapid transit is a form of public transportation on a fixed route that includes features that dramatically improve the speed, capacity, reliability, and quality of the service." For the purposes of our study, "rapid transit" is bus or rail service that provides direct and frequent service with limited stops. In short, a trip on rapid transit should be as fast as, or faster than, a car ride to reach your final destination (thus fulfilling the vision of *Transit Tomorrow*).

The *Rapid Transit Study's* scope includes a technical, environmental, and economic development assessment which will help determine the transit mode (rail, bus, streetcar, etc.), alignment (route), station locations, cost estimates, and funding and revenue options. The study will conclude (in the summer of 2023) with a "locally preferred alternative" (a preferred transportation mode and route that best meets the needs of the corridor) and position the region for discretionary funding from the Federal Transit Administration for implementation (design, engineering, construction).

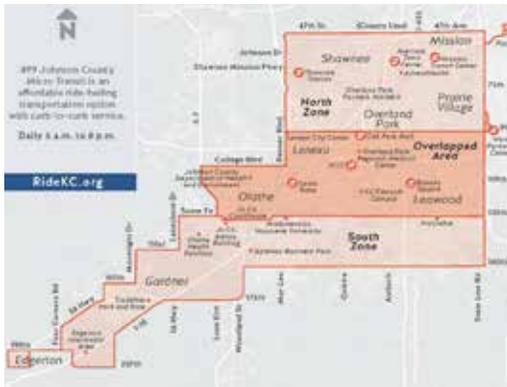
The phased implementation of rapid transit would mark a major transformation in how we move around the region. It would allow us to meet the growing demands placed on our transportation network without building new roads or inducing more vehicle travel. Put simply, if transit is the fastest and most convenient option, people are more likely to take it.

While the Gorham-Westbrook-Portland corridor moves a step closer towards implementation, the Biddeford/Saco to Portland corridor is the next corridor recommended by *Transit Tomorrow* for evaluation.



The Vision for Rapid Transit

Transit Tomorrow identified four potential rapid transit corridors in the region. For each corridor, specific route and mode choices will need further evaluation. An "alternatives analysis" is the process for evaluating these options and is required for federal funding eligibility. The *Rapid Transit Study* is an alternatives analysis currently underway for the Gorham-Westbrook-Portland corridor. The study will conclude with a "locally preferred alternative" (a preferred transportation mode and route that best meets the needs of the corridor) and position the region for discretionary funding from the Federal Transit Administration for implementation (design, engineering, construction).



Microtransit: A map of Kansas City's "RideKC" microtransit service. Courtesy: Kansas City Star



Transit Fleet Electrification: A rendering of Casco Bay Lines new hybrid/electric ferry boat, estimated to be deployed in 2024. Photo: Casco Bay Lines

Microtransit

Across the country, transit agencies are introducing new technologies to better match the level of service they provide with rider demand. In rural and suburban areas where transit demand is low, microtransit can provide service in place of fixed-route transit. In urban areas, it can fill the gaps between fixed routes and help with first mile and last mile connections.

Microtransit is an on-demand service where riders can request a ride in real-time via an app on their phone. A software program then uses this information to dynamically match riders and drivers. The service uses multi-passenger vans, shuttles, or small buses so people traveling in the same direction can share a vehicle. Microtransit is typically offered within a specified geography or neighborhood. People within the zone can then request a ride to anywhere else within the zone.

As an emerging new technology, microtransit helps transit agencies focus fixed-route service on corridors with higher densities and higher ridership, while still providing service to areas with more scattered demand when it is needed.

Vehicle Electrification

Converting transit fleets from diesel to electric is a major priority for the region's transit agencies. In addition to reducing air pollution and environmental impacts, electric buses are safe, reliable, and quiet. METRO and BSOOB Transit recently received a Federal Transit Administration Lo/No (low emissions/no emissions) grant as well as matching dollars from MaineDOT to purchase electric buses and related charging infrastructure. Additional planning and investments are necessary to increase the fleet of electric buses. In 2022, MaineDOT is developing a Transit Bus Electrification Plan to help transit agencies with this transition.

Converting transit fleets to electric vehicles is not limited to buses. A new vessel for Casco Bay Lines, estimated to be deployed in 2024, will feature a diesel-electric hybrid propulsion system. This will be the first ferry of its kind in the region.



An aerial view of the Portland International Jetport. Photo: Paul Bradbury

Air Travel

Portland International Jetport (PWM) is a small hub commercial airport owned and operated by the City of Portland. The Jetport is served by two runways that intersect. The current terminal building opened in 1968 and has been updated over the years.

Just before the COVID-19 pandemic, the Jetport served more than two million passengers per year. Demand for air travel has been returning since 2021 which saw 1.7 million passengers. The Jetport is served by most major airlines and continues to add non-stop service to destinations across the United States. Air freight also makes up a significant part of airport operations.

The Jetport is Maine's largest and New England's fastest-growing airport. It strives to be "Maine's Home Airport" and works to establish itself as a convenient, safe, and environmentally conscious gateway. Development is guided by the Sustainable Airport Master Plan. Recent projects include the rehabilitation of the primary runway, the opening of Maine Turnpike Exit 46, and a terminal expansion which nearly doubled

the size of the facility and achieved Leadership in Energy and Environmental Design Gold certification. As noted by staff, there is currently no need for further expansion, particularly as the Jetport sits on less than 1,000 acres.

While the Jetport is a major employer, transit connections to/from the terminal do not meet the needs of employees as the Jetport is active outside of normal METRO hours. While this challenge is mostly faced by employees, the window of bus operation also leaves passengers on early and late flights with few options for getting to and from the Jetport. More multi-modal connectivity would benefit both passengers and employees.

Finally, the aviation industry is also looking at ways to reduce emissions and some of these changes may come to the Jetport soon. Several companies are developing all-electric or hydrogen-electric aircraft. Small electric planes are expected for production in the next few years and are particularly well suited for commuter airlines that offer short trips like Cape Air's daily service from Portland to Boston.

Maine's Freight Network Includes:

HIGHWAY

5,176 miles of interstate, arterial, and collector highways. Trucking is the dominant mode for freight shipments in Maine.

RAIL

1,072 miles of Class I, II, and III railroads that connect the state to the North American and Canadian rail systems and play a particularly important role for the forest products industry.

MARITIME

3 major seaports (Portland, Searsport, and Eastport) that serve as hubs for maritime goods movement and connections between modes.

AIR

4 major airports important for transporting low-weight, high-value commodities (such as semiconductors) and perishable items like seafood. The Portland International Jetport handles roughly 90% of inbound and outbound air cargo tonnage (freight and mail) in the state.

INTERMODAL

4 active intermodal facilities (the International Marine Terminal in Portland, and rail-to-truck terminals in Auburn, Waterville, and Presque Isle).

PIPELINE

4 companies that maintain a network of pipelines that transport refined petroleum products, crude oil, and natural gas in Maine.

The Freight Network

THE GREATER PORTLAND REGION relies on the multimodal freight system to move millions of individual products. This network of rail lines, truck routes, ports, and intermodal facilities connects Greater Portland's economy to the rest of the state, country, and world.

As the table below shows, freight traffic in Maine is dominated by truck service. In 2017 (the most recent publicly available data) the federal Bureau of Transportation Statistics reported that 94% of freight shipments originating in Maine traveled by truck, which represents 81% of total value.

Mode Split by Weight and Value in Maine

MODE	WEIGHT	VALUE
Truck	84%	72%
Multiple Modes	5%	23%
Air	0.02%	2%
Rail	4%	2%
Pipeline	7%	2%
<i>Total</i>	<i>~94 Million Tons</i>	<i>~\$89 Billion</i>

Data Source: 2017 FHWA Freight Analysis Framework
Multiple modes includes: mail (parcel, U.S.P.S. or courier), truck and rail, and truck and water.

Types of Commodities Shipped

According to a statewide freight study commissioned by MaineDOT, the top commodities by weight in Maine are logs, foodstuffs, miscellaneous manufacturing products, wood products, and coal. The study projects the top commodities moved by weight will remain the same in 2045. By value, the top commodities include mixed freight, followed by transport equipment, machinery, motorized vehicles, and coal. The study projects that by 2045 transport equipment will account for roughly one-quarter the total value of all goods moved.⁴

⁴ [Maine Integrated Freight Strategy](#);

prepared for MaineDOT by Cambridge Systematics in 2017.

Trucked Freight

Trucks carry the vast majority of freight in Maine. Approximately 84% of freight tonnage and 72% of freight value moved by truck in 2017. Maintaining the highway system and network of roads that make up the state's "Heavy Haul Truck Network" is a priority for MaineDOT and essential for truck traffic to efficiently reach large portions of the state.

However, Maine's reliance on trucks also comes at a cost and has important implications for the state's infrastructure and ability to sustain growth. Some of the impacts of a higher share of truck traffic include:

- Increased costs for highway construction and maintenance;
- More unwanted truck traffic traveling through neighborhoods, villages, downtowns, and urban areas;
- Increased use of fossil fuels resulting in higher emissions; and
- Higher costs to transport some goods.

While moving freight by truck will likely remain the dominant mode for the foreseeable future, Maine would benefit from shifting a greater proportion of heavy freight to the more efficient rail and water transportation modes.

According to the *Maine Integrated Freight Strategy*, this is a challenge because, "trucking dominates freight haulage in the northeast U.S. region, and Maine's robust highway capacity and lack of any serious congestion allows trucking to overcome the natural price advantage of rail or water by providing a higher level of service that is both cost competitive and predictable."

Where it is not practical to shift from truck to rail or water, improving the efficiency of the trucks themselves is another way to cut down



An 18-wheeler on Route 1 in Yarmouth. Photo: Tom Bell

Maine would benefit from shifting a greater proportion of heavy freight to the more efficient rail and water transportation modes.

on environmental and public health impacts. In fact, significantly increasing participation in the Environmental Protection Agency's (EPA) SmartWay program is a recommendation in the state's climate action plan *Maine Won't Wait*.⁵

Among other freight sustainability initiatives, the SmartWay program helps the trucking industry improve efficiency and save money with new technologies such as vehicle electrification, aerodynamic design, low-resistance tires, and reduced idling. *Maine Won't Wait* recommends increasing participation in the program via loans or grants, by ensuring technology is available, and recognizing excellence within the program.

⁵ [Maine Won't Wait: A Four-Year Climate Action Plan](#), prepared by the Maine Climate Council in 2020.



A Pan Am freight train crossing the Fore River (next to Veteran's Memorial Bridge) between South Portland and Portland.
Photo: Corey Templeton

Freight Rail

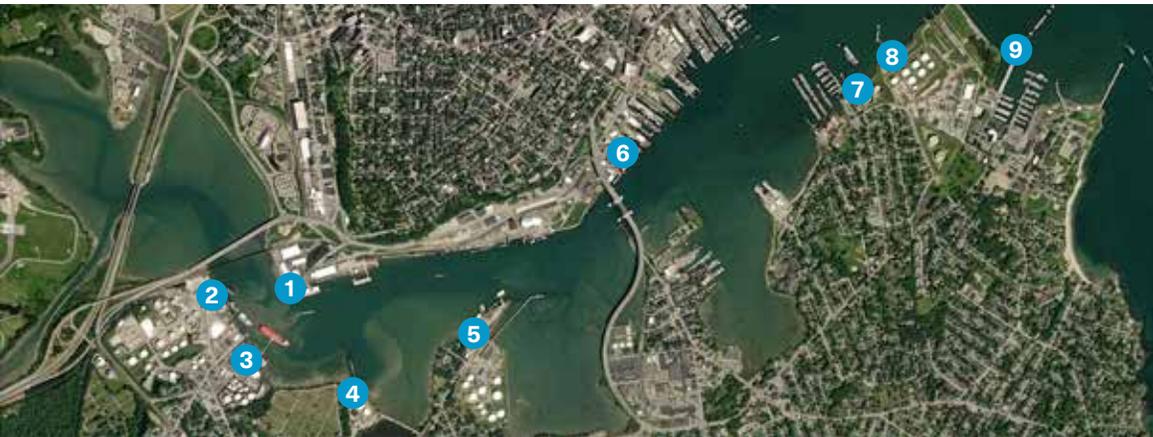
While trucks are the primary means for shipping freight in Maine, railroads still provide significant capacity for domestic and international trade — especially for high-volume, low-value commodities such as forest products. Since one train can efficiently carry the freight of hundreds of trucks, moving more goods by rail can reduce emissions, congestion, and wear and tear on our roads and highways.

The primary freight rail corridor in southern Maine is the Pan Am rail line that generally follows the coast from the New Hampshire-Maine border up through Portland to Brunswick.⁶ This track is also shared with the Amtrak Downeaster passenger rail service. At a junction north of Portland in Yarmouth, another rail line branches due north to an intermodal facility in Lewiston/Auburn and connects to numerous points north including Bangor.

Many segments of Maine's rail network suffer from deferred maintenance and are outdated and aging. For example, a major trend in the freight rail industry is a move towards heavier and taller cars. Across the country, the current standard of 263,000-pound cars is quickly being replaced by heavier 286,000-pound cars. Likewise, it has also become common in the industry to use "double stack" cars where two shipping containers are placed on top of one another. Unfortunately, many of the state's rail lines cannot accommodate these taller and heavier cars. This puts Maine businesses at a disadvantage and contributes to a greater reliance on trucking.

Another barrier for freight rail is the need to share track with passenger trains. In Greater Portland, for instance, freight trains must coordinate their movements with the AMTRAK Downeaster. Since much of the corridor between Brunswick and Boston is single track, this can cause delays. Further investment is needed to modernize rail infrastructure in Maine for both freight and passenger service.

⁶ In 2022, Pan Am was acquired by the Florida-based shipping company CSX.



Terminals in the Port of Portland: 1. Merrill; 2. Sprague Energy; 3. Irving/Buckeye; 4. Global; 5. Citgo/Turner's Island; 6. International Marine Terminal; 7. Portland Pipeline Pier #1; 8. Gulf Oil; 9. Portland Pipeline Pier #2.



International Marine Terminal
The Eimskip ship "Skogafass" docked at the IMT in Portland.
Photo: Corey Templeton

Marine Freight

Maine has three marine freight ports: Eastport, Searsport, and Portland. The Port of Portland is the largest of the three. As shown above, it supports nine marine terminals, seven of which include refined petroleum products. The International Marine Terminal (IMT) is the largest terminal in the Port. Formerly an abandoned space off Commercial Street used by the City to dump snow, the IMT now specializes in containerized freight and is a hive of activity. It has nearby connections to the highway system, the Portland Jetport, and the Pan Am rail line via a spur.

In 2013, the Icelandic shipping company Eimskip began to use the IMT as its logistical hub for North America. Eimskip's container service from Portland to Iceland and Europe has increased shipping at the port by roughly 20% per year,⁷ provided an anchor business for the Port, and stimulated additional investment in the terminal.

In 2015, the IMT expansion project doubled the size of the facility, modernized the security areas, and connected the terminal to the freight rail network. More recently, construction has

Eimskip's container service from Portland to Iceland and Europe has increased shipping at the port by roughly 20% per year, provided an anchor business for the Port, and stimulated additional investment in the terminal.

begun on a 107,000 square foot cold storage facility on the site. Set to be complete in 2024, the Maine International Cold Storage Facility is expected to meet the refrigerated cargo demands of Eimskip and be large enough to accommodate customers from Maine's growing food, beverage, and bio-pharmaceutical industries.

These investments reflect a growing interest in keeping a portion of the Portland and South Portland waterfronts dedicated to industrial and maritime port uses.

⁷ Portland Press Herald (2021). [*With other ports in chaos, Portland is sailing toward a record year.*](#)



Above: The Portland International Jetport handles roughly 90% of inbound and outbound air cargo tonnage in the state.

Below: Trucks queue on West Commercial Street in Portland outside the International Marine Terminal (IMT). The IMT is also connected to the freight mainline via a recently constructed rail spur.

Air Freight

Airports are particularly important for transporting low-weight, high-value commodities, such as semiconductors, and for shipping perishable items like seafood. While air travel is the fastest way to transport goods over long distances (and internationally), it is more expensive.

There are four airports in Maine equipped to accommodate air cargo: the Portland International Jetport, the Auburn-Lewiston Municipal Airport, the Bangor International Airport, and the Northern Maine Regional Airport. The vast majority of air cargo is handled by the Portland International Jetport. In 2016, it handled roughly 90% of inbound and outbound air cargo tonnage in the state.⁸

Intermodal Facilities

Intermodal facilities are critical nodes in the freight system and vital for increasing the use of marine and rail. These hubs help facilitate the transfer of goods from one mode to another and provide alternatives for shippers and receivers. They are also a high priority for investment since they can act as bottlenecks if not operating efficiently. Maine has a number of intermodal facilities, many of which are located in Portland.

For transfers between marine freight and truck/rail, the International Marine Terminal and Merrill Marine Terminal in Portland are the primary facilities. As mentioned above, the Portland International Jetport is a significant hub for the transfer of air cargo to trucks (and vice versa). Currently there are no road-to-rail facilities in Greater Portland. The closest such facility is the Maine Intermodal Terminal in Auburn.

⁸ [Maine Integrated Freight Strategy](#):

prepared for MaineDOT by Cambridge Systematics in 2017.

Roadway Safety

TRAFFIC-RELATED DEATHS and serious injuries are a critical — and preventable — public health epidemic and social equity issue. PACTS, and our partner agencies and municipalities, can help reduce crashes by providing safer transportation systems in our region. All people should be able to get to where they want to go safely. Whether a person is riding the bus to work, driving to the grocery store, or walking to the park, they should have confidence their trip will be safe.

National Trends

Nationally, more than 42,915 people died in traffic-related crashes in 2021, a 10.5% increase from the 38,824 fatalities in 2020. The uptick in fatal crashes is the highest number of fatalities since 2005 and the largest annual percentage increase in reported history. Behavioral research conducted by the National Highway Traffic Safety Administration (NHTSA) shows higher rates of speeding, traveling without a seatbelt, and distracted driving than during pre-pandemic times. Roadway fatalities are also disproportionately higher among Black Americans and low-income Americans.

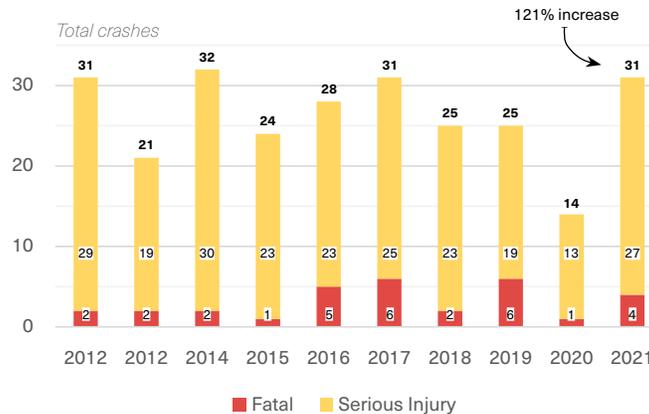
State Trends

In Maine, 153 people died in crashes in 2021, down from 165 in 2020. While 2021 was one of the safest years on record by that metric, it was particularly deadly for pedestrians: 20 pedestrians died in vehicle crashes (the highest in two decades) and up from nine fatalities in 2020. Additionally, fatalities are significantly up in 2022, leading officials to raise the alarm for drivers to be mindful of safe practices.⁹



All Crashes in the PACTS Region

2021 marked the first year since 2017 that traffic fatalities and serious injuries increased.



Crashes Involving Non-Motorists in the PACTS Region

In 2021, the number of bicyclists and pedestrians killed or seriously injured in vehicle-related crashes rose sharply.

Regional Trends

Crashes are on the rise in our region. An analysis of crashes from 2012 to 2021 (see graphs to the left) shows that while the combined number of fatal and serious injury crashes has declined since 2017, as of 2021 it is beginning to increase again. In particular, the number of crashes involving bicyclists and

pedestrians spiked in 2021— from one fatality in 2020 to four in 2021, and from 13 serious injuries in 2020 to 27 in 2021. This increase is likely tied, in some way, to the pandemic.

⁹ [Maine Officials Seeing Staggering Increase in Deadly Crashes](#). Boston Globe (2022).

What is Vision Zero?

Vision Zero is a transportation safety philosophy based on the principle that death is not an acceptable mobility outcome.

Vision Zero is a useful framework to guide decisions to eliminate traffic deaths and serious injuries in the transportation system. Vision Zero recognizes that humans make mistakes and therefore the transportation system should be designed to minimize the consequences of human error. The Vision Zero approach is different than a traditional traffic safety approach in the following key ways. Vision Zero:

- Reframes traffic deaths as preventable.
 - Integrates human error into the approach.
 - Focuses on preventing fatal and serious crashes rather than eliminating all crashes.
 - Aims to establish safe systems prioritizing human life when designing a road network.
 - Applies data-driven decision making.
 - Establishes road safety as a social equity issue.
-

Crash Locations

Crashes occur everywhere but are more likely to occur in densely populated areas and on high traffic roadways. The heat map on the next page represents the distribution of the 740 fatal and serious injury crashes that occurred in Greater Portland between 2016 and 2021. As the map shows, most crashes occurred in Downtown Portland, followed by Downtown Biddeford/Saco. However, localized “hot spots” exist throughout the region. Intersections, in particular, are common locations for crashes, since vehicles, bicyclists, and pedestrians are more likely to come into conflict with one another. According to the Federal Highway Administration, more than 50% of fatal and serious injury crashes occur at or near intersections.¹⁰

The MaineDOT also maintains a statewide database of high crash locations. Traffic engineers rely on several factors when it comes to determining where high crash locations are across the state. Data, including the number of crashes, traffic volume, pedestrian fatalities, and other violations are combined to create a “critical rate factor.” Locations that have eight or more crashes and a high critical rate factor (greater than one) over a three-year period are added to the list, which is updated every year and posted to the Maine Crash Query Tool, an interactive portal that allows users to view crash data throughout the state.¹¹

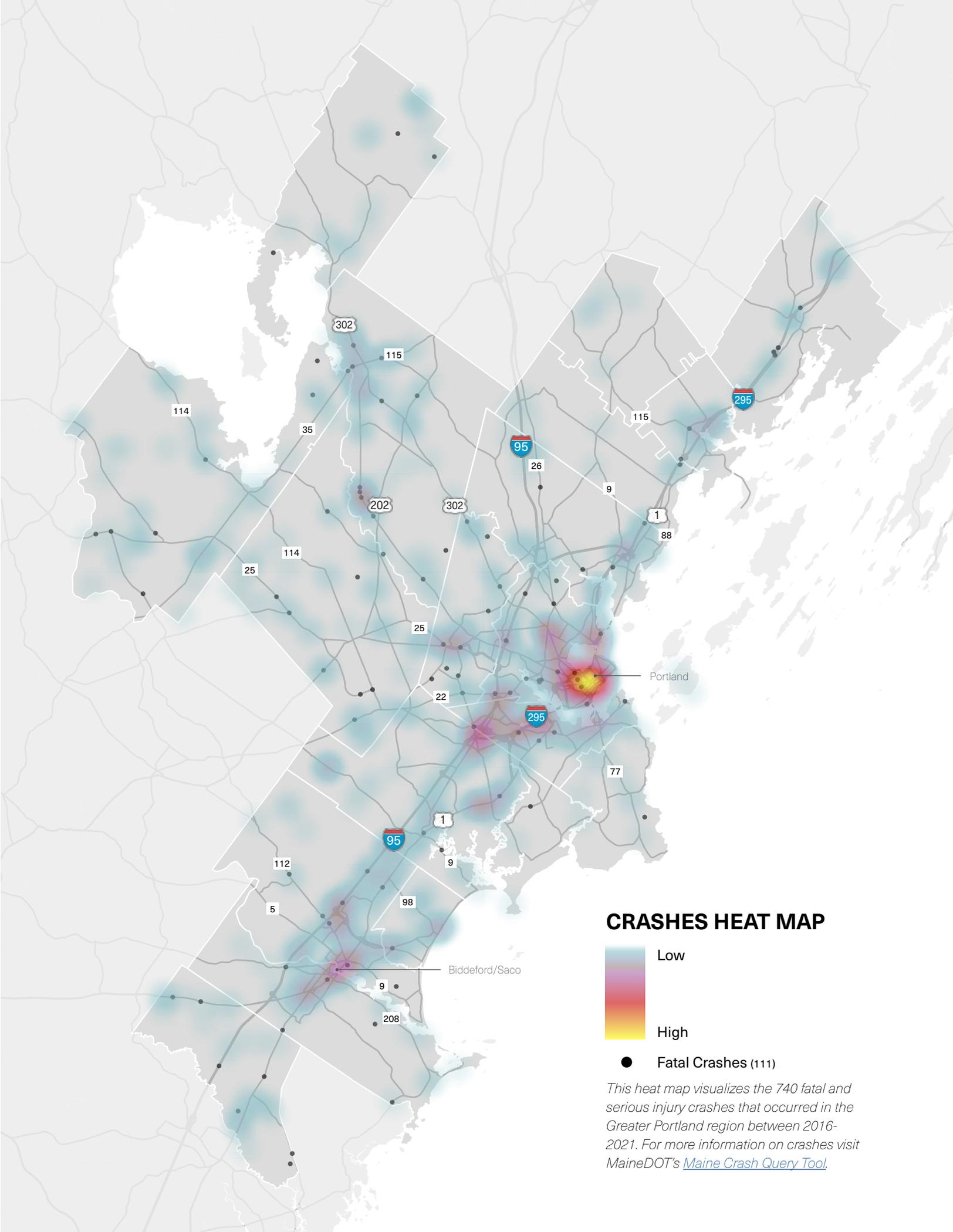
Moving Towards Zero

In January 2022, the PACTS Policy Board directed staff to develop a Vision Zero policy, which, if adopted, would establish a goal of reducing traffic fatalities and serious injuries to zero, by a specific (to-be-determined) target date. Vision Zero policies assert that transportation fatalities and injuries are preventable — in other words, traffic crashes are not simply accidents, but the result of poor behavior combined with unforgiving roadway designs. The U.S. Department of Transportation has also set a goal of zero. In the recent *National Roadway Safety Strategy* report, Secretary Buttigieg states that “zero is the only acceptable number of deaths and serious injuries on our roadways.”¹²

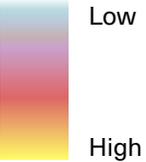
¹⁰ [Intersection Safety](#), Federal Highway Administration, 2021.

¹¹ [Maine Crash Public Query Tool](#), MaineDOT, 2022.

¹² [National Roadway Safety Strategy](#), U.S. DOT, 2022.



CRASHES HEAT MAP



● Fatal Crashes (111)

This heat map visualizes the 740 fatal and serious injury crashes that occurred in the Greater Portland region between 2016-2021. For more information on crashes visit [MaineDOT's Maine Crash Query Tool](#).

Making Connections

THIS SECTION HIGHLIGHTS many of the key trends and issues relevant to the Greater Portland region. The biggest drivers of disruption affecting our transportation system (and our lives) include:

- The **climate emergency** and efforts to **decarbonize transportation**;
- The **COVID-19 pandemic**;
- The dynamics of **population and employment change**;
- The relationship between **where people live and work**;
- A **lack of housing**;
- Increased awareness of **social inequalities**;
- The accelerating pace of **technological innovations**; and
- An influx of **federal funding** opportunities.

These trends are not exclusive to our region. In most cases they are being observed in metropolitan areas throughout the country and the world. While each trend is described individually, it is important to step back and observe how they are interconnected.

The COVID-19 pandemic provides an example. The pandemic has exacerbated many existing trends and spurred new ones. It has brought new people to our region; accelerated the pace of technological innovation and the digitalization of everything; disrupted the relationship between where people live and

work; exposed a lack of affordable housing; and increased awareness of social inequalities and the role of “essential workers.”

What We Can Do

The accelerated pace of change and increased uncertainty about the future make it an unusually difficult time to imagine what is to come. While many of the trends and issues discussed in this section are largely outside our control, there are actions we can take (now, and in the next twenty years) to prepare and adapt. The next two sections (Where Do We Want to Go? and How Do We Get There?) focus on our desired future and outline the actions we can take to navigate these trends.

The accelerated
pace of change and
increased uncertainty
about the future make
it an incredibly difficult
time to imagine what
is to come.



Route 1 in Scarborough flooded in the Christmas Eve storm of 2022. This section of roadway is currently included in MaineDOT's 2023 Work Plan for preliminary engineering to combat sea level rise. Photo: Tom Bell.

The Climate Emergency

CLIMATE CHANGE is a full-fledged emergency that is impacting this region now. Transportation infrastructure is already experiencing damage from flooding and rising temperatures. In Scarborough in 2021 a winter storm caused flooding along Route 1, a major travel route for the region, leaving it inaccessible as municipal crews worked to clear it. The region will see more damage as the climate warms and changes.

Given the inevitability of disruptions based on current levels of atmospheric warming, adaptation at the local and regional level will be necessary in the coming years. Additionally, ambitious mitigation measures (like those outlined in the state's climate action plan) are critical for staving off more significant repercussions.

Climate change exposes people, infrastructure, and ecosystems to a wide range of hazards and impacts. Transportation infrastructure is uniquely vulnerable, and the impacts strain a network already facing challenges.

Rising Temperatures

In Maine, the average annual temperature has increased 3°F since 1895. Temperature increase is most pronounced along the coast where it is expected to rise 3.5-4°F by 2050. Additionally, extreme heat days (where temperatures exceed 90°F) are expected to increase two to four times by 2050.

Warming has also shifted Maine's seasons. From the early 1900s to 2000s, the "warm season" (defined as when average daily temperature is above freezing) has increased by two weeks and projections indicate it will increase two more weeks by 2050.¹³

Larger Temperature Variation

The weather is also becoming more variable. Extreme winter cold snaps are increasingly frequent along with rapid shifts from freezing to thawing conditions.

¹³ [Maine's Climate Future: 2020 Update](#). University of Maine.



The **Average Annual Temperature**

in Maine has increased

3°

Fahrenheit since 1895.

Extreme Heat

Days are expected to increase

2-4x

in Maine by 2050.

The changing temperatures degrade roadways by shortening the lifespan of pavement. Higher temperatures cause pavement to soften, expand, or buckle, while freeze-thaw cycles increase cracking in the pavement. This creates dangerous driving conditions and requires more frequent and extensive repair. Maine is already in the unique position of investing significantly more than many states in pavement preservation programs due to this freeze-thaw phenomenon. Climate change is likely to exacerbate this issue.

Rising Sea Levels

The transportation network will be impacted by increasing temperatures and flooding due to rising sea levels and increased precipitation. Flooding is already impacting the region's infrastructure. Sea levels around Portland have risen 7.5 inches since 1912. This is three to four times the rate of sea level rise globally. Since 1990, the rate has accelerated to 0.12 inches annually. Sea level rise, and increased storm severity, are already threatening coastal communities and causing regular flooding of roadways and critical infrastructure, even on sunny days. Sea level rise and storm surge are expected to increasingly inundate roads in the region, and most critically portions of I-295, a key corridor for travel in and out of the region.¹⁴

Increased Precipitation and Flooding

Flooding is not just a problem for coastal towns; many inland towns are experiencing worsening flooding due to an increase in strong storms and precipitation. Flooding threatens Mainers' livelihoods and further burdens vulnerable communities. The statewide average annual precipitation (rainfall and snowfall) has increased by six inches since 1895. Within the Greater Portland area, precipitation is expected to increase another four-to-five percent from current totals by 2050. The majority of this will fall as rain, as snowfall has decreased because of warming.¹⁴

Along with increased precipitation overall, precipitation events have become more intense, with more powerful storms and more rainfall in shorter periods of time. Heavy storms with two to four inches of precipitation are becoming more frequent, which increases the probability of floods that

¹⁴ [Maine's Climate Future: 2020 Update](#). University of Maine.



Flooding on Wharf Street in Portland. Photo: Corey Templeton

will overwhelm culverts, erode infrastructure, and degrade water quality in ponds, lakes, streams, rivers, and coastal areas.

According to the Cumberland County Hazard Mitigation Plan, flooding is one of the top three hazards for the County. Increased flooding threatens stormwater management and wastewater treatment systems and an estimated 198 miles of county roads.¹⁵ Culverts are a critical failure point for roads during flood events. Culverts allow water to flow under roads. However, when they're undersized or poorly functioning, flooded culverts cause roads to wash out, endangering the community and degrading habitat and water quality. A recent analysis of a municipality in Cumberland County found that over 20% of culverts were at risk of being flooded due to future climate hazards.

Uneven Social Impacts

Climate change increases the vulnerability of residents in our region. Those who suffer from

socioeconomic inequalities are often more burdened by climate hazards and environmental impacts. This includes elderly populations, low-income households, and those without a vehicle.

Low-income households spend up to 40% of their income on transportation (compared with the state average of 30%) and often live in communities that are more exposed to harmful transportation emissions. These existing social vulnerabilities mean that people have a harder time recovering from climate impacts as well. To prepare for the future and build resilience, it is important to understand that hazards brought by climate change and existing social vulnerabilities combine to make up the total climate impact on people and infrastructure.

¹⁵ [2022 Cumberland County Hazard Mitigation Plan](#).
Cumberland County Emergency Management Agency.

Decarbonization of Transportation

MAINE HAS SET THE GOAL to reduce greenhouse gas emissions by 45% by 2030 and 80% by 2050, and to achieve net-zero carbon emissions by 2045. In line with the state's goals, *Connect 2045* calls for a 70% reduction in transportation greenhouse gas emissions by 2045 (see Chapter 4 Evaluating Progress).

Reducing emissions through clean transportation is a crucial step to meeting these aggressive goals. As previously noted, transportation is responsible for 54% of Maine's annual greenhouse gas emissions. Our state's rural character and relatively low emissions from other sectors (i.e., electricity generation) make transportation emissions disproportionately high compared to other states.

There are three major ways to decarbonize transportation: 1) electrify light, medium and heavy-duty vehicles, 2) use alternative fuels for vehicles that cannot be electrified, and 3) reduce the number of miles we drive.

1 VEHICLE ELECTRIFICATION

Combined with reducing the total number of miles traveled and improving vehicle efficiency, the most significant reductions of greenhouse gas emissions in the transportation sector will come from the long-term and large-scale electrification of transportation systems. To achieve its emission reduction goals, Maine will need to put 41,000 light-duty electric vehicles (EVs) on the road by 2025 and 219,000 by 2030.

Currently, EVs account for less than 0.5% (7,000 light-duty vehicles) of registered vehicles in Maine, but that number is increasing rapidly as the number and diversity of EV car models increases.¹⁶

Medium- and heavy-duty vehicles produce 27% of Maine's transportation greenhouse gas emissions, so the electrification of these vehicles is also key to reaching the state's climate goals.

Our region's bus transit agencies are doing their part — Greater Portland METRO, South Portland Bus Service and BSOOB Transit are aiming to be all-electric by 2040. The first few electric buses are already in service, and more

are on the way. School buses are also being electrified as national funding is made available through the EPA. In 2022, 13 school districts in Maine were awarded a total of over \$13.3 million to purchase 34 zero-emission school buses.

While electric vehicles can play an important role in reducing emissions, their batteries require large amounts of raw materials, including lithium, nickel, and cobalt — mining for which has climate, environmental, and human rights impacts. When the batteries reach the end of their useful lives, they must also be properly recycled to avoid widespread electronic waste. As electric vehicles gain in popularity, these issues must be properly addressed.

Connect 2045
calls for a
70% reduction
in transportation
greenhouse gas
emissions by
2045.

¹⁶ [Maine's Climate Future: 2020 Update](#). University of Maine.



The region's bus agencies are aiming to be all-electric by 2040. The first electric buses are already in service.

Greater Portland METRO's new electric bus driving past a recently installed creative bus shelter. Photo: Denise Beck

EV Charging Stations

Increasing the number of electric vehicles will require significant investment in charging infrastructure. There are currently over 550 public EV charging ports at almost 300 locations across Maine, with Greater Portland now hosting almost 150 charging ports at 80 locations. However, several communities have no public chargers. To stay on target to meet *Maine Won't Wait's* emissions reductions goals the number of charging stations in Maine will need to roughly double by 2025.



To meet our emissions reductions goals the transition to electric vehicles will need to go beyond just light duty passenger vehicles.

Top: An electric school bus on display at an electric/alternative fuel vehicle event in Boston. Electric school buses exist and are on the cusp of widespread adoption. Mount Desert Island High School was the first school in Maine to add an electric school bus to its fleet in September 2021. Photo: GPCOG

Middle: A Mack electric work truck at the the electric/alternative fuel vehicle event in Boston. Photo: GPCOG

Bottom: BSOOB Transit's new electric bus. Photo: BSOOB Transit

EV Policies, Programs, and Incentives

Shifting to clean transportation will require policy changes, updated regulations, and increased incentives (not everyone can afford an EV). In addition to encouraging travel that does not rely on private vehicles, municipalities will need to adopt policies that promote the use of EVs and the installation of charging infrastructure. For example, municipal governments have a key role to play in updating codes and regulations to require new developments to incorporate charging stations.

Several programs and initiatives across the state are already helping advance the use of alternative fuels for clean transportation.

- **Efficiency Maine Trust** provides rebates and incentives for electric vehicles and charging stations to encourage consumers to go electric.
- **Maine Clean Communities (MCC)** is a coalition of stakeholders working to reduce emissions from transportation. With support from the Department of Energy, the coalition holds educational webinars, provides vehicle demonstrations, and supports fleets with technical assistance and training.
- **Drive Electric Maine** is a public and private-sector electric vehicle stakeholder group working together to accelerate the adoption of electric vehicles and the expansion of charging infrastructure throughout Maine.
- The **Environmental Protection Agency's SmartWay Program** helps improve efficiency and save money with new technologies within the heavy-duty freight transportation sector.

2 ALTERNATIVE FUELS

Electrification of some medium- and heavy-duty vehicles (and vehicles with long-duty cycles) is technically challenging. Where electrification is not currently practical, alternative fuels like renewable natural gas, hydrogen and other fuels are being evaluated. The state is using renewable biofuels as an immediately available, cleaner option in state and municipal fleets. Biodiesel can be used immediately in vehicles without additional modification to reduce lifecycle emissions as other alternative fuel technologies are evaluated and developed.



Directing more growth and development towards the region's villages, downtowns, and urban areas, where people can easily access their most basic day-to-day needs within walking distance (or take transit for longer trips), can reduce our reliance on driving and significantly cut down on emissions. **Left:** The pedestrian bridge connecting Biddeford's Mill District to Saco Island. Photo: Corey Templeton. **Right:** The pedestrian bridge connecting Downtown Westbrook. Photo: Roger McCord

3

REDUCING VEHICLE DEPENDENCY

While transitioning to electric vehicles is something we can do immediately — with quantifiable results — reducing our overall reliance on driving can also deliver big gains. Changing how we get around and minimizing the number of trips we take by car will require overcoming deeply embedded behaviors and lifestyles. Alternative transportation options, such as walking, biking, and taking public transportation are all more environmentally friendly than driving. But for people to choose them, these options need to be just as convenient as driving a car, if not more so.

The way our streetscapes and public spaces are designed can play an outsized role in deciding what choices we make. If there are no sidewalks, bike lanes, or transit service in sight when you walk out the door, the most obvious option is to drive. With the rise of “micromobility” solutions, such as electric bikes and scooters, there are more options than ever

before, but they must be convenient and safe to gain traction.

Especially considering the pandemic, many communities in the region are rethinking the role of the public right-of-way. To support local businesses, communities have transformed parking spaces into dining spots. To encourage walking and bicycling, communities have closed some streets to vehicle traffic. Many communities have also adopted Complete Streets policies to ensure that all users and all modes are considered in future roadway projects.

In the big picture, directing more growth and development towards the region's villages, downtowns, and urban areas — where people can easily access their most basic day-to-day needs within walking distance or on public transit — can reduce our reliance on driving and significantly cut down on emissions.

The COVID-19 Pandemic

THE COVID-19 PANDEMIC has profoundly impacted nearly every aspect of our lives. While the long-term impacts of the COVID-19 pandemic on the Greater Portland region are still uncertain, the following pandemic-related trends have direct implications for our transportation system:

- **A Change in Traffic Patterns**

The combination of more people working from home and a rise in home delivery services have changed the ways and times the roads and transit systems are used. In the last several years travel has become spread out throughout the day and less concentrated during the traditional peak commute periods.

- **More People Moving to the Region**

Initial evidence suggests increased migration to Maine may also be occurring because of the pandemic. Likely spurred along by a newfound ability to work from home, more people moving to the region will place additional demands on the transportation system. Where people choose to live will have lasting impacts. A continuation of our existing sprawling development pattern will encourage more driving and make public transit more expensive and less viable. The opposite is true if we can accommodate more people in our villages, downtowns, and urban areas.

- **Rethinking the Public Right-of-Way**

During the pandemic, several municipalities in the region temporarily converted some of their streets into shared streets or pedestrian zones. Some will stay this way permanently. Giving streets back to the community as places where people can walk, dine, and spend their leisure time is not only a way to limit the transference of the virus, but an effective way to activate the streetscape and encourage walking over vehicle use.

- **A Decline in Transit Ridership**

The COVID-19 pandemic drastically reduced transit ridership in the Greater Portland region. As the pandemic took hold in March 2020, ridership for all transit agencies dropped precipitously. Although ridership has begun to recover for all providers, it remained 34% lower than 2019 levels in August of 2021, which has historically been one of the region's highest-ridership months. Over this same period, ridership on local bus services has not recovered as much as ridership on the Amtrak Downeaster or Casco Bay Line's ferry service



Above: The COVID-19 pandemic dramatically reduced transit ridership in the region. Ridership has since recovered but remains lower than pre-pandemic levels. Photo: Tom Bell

Below: Milk Street in Downtown Portland is a pedestrian-only street. Service/delivery vehicles are allowed from 6 a.m. to 11 a.m. only. Photo: Claire Luning

Population Change

UNLIKE OTHER PARTS OF THE STATE, the Greater Portland region is growing. The pace of growth — and where and how it occurs — has major implications for quality of life, the environment, and the demands we place on the transportation system.

Population Growth

Between 2010 and 2020, Maine grew by 33,998 people and now has a total population of approximately 1,362,359 people. Compared to previous decades, this growth is relatively modest. (For reference, Maine experienced a population boom during the 1970's when we added over 130,000 people).

As the map shows, the southern and downeast counties (blue) are driving population growth in Maine. In fact, these are the *only* counties that experienced growth in the last decade. The central and northern rim counties (grey) all lost population.

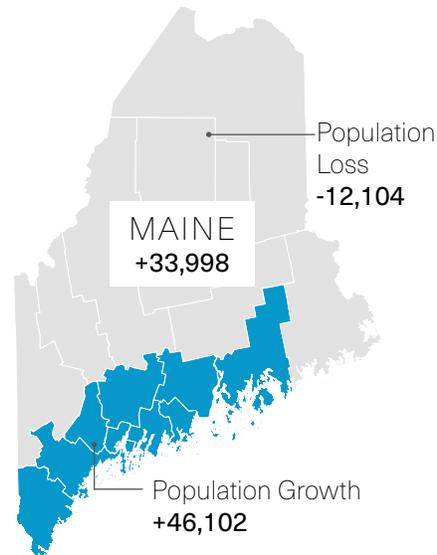
The PACTS region, comprised of 14 Cumberland County communities and four York County communities, added 22,489 people — going from 274,910 people in 2010 to 297,399 people in 2020.

Pandemic In-Migration

Because the Census Bureau conducts such a thorough count, the decennial Census is typically considered the gold standard for demographic data. However, since data

collection for the 2020 Census was conducted in 2019, the count predates the COVID-19 pandemic which began in the spring of 2020.

Although it may be too soon to tell, some initial evidence suggests increased migration to Maine may be occurring because of the pandemic.



Population Change by County (2010-2020)

Between 2010 and 2020, the southern and downeast counties (blue) grew by over 46,000 people. However, these gains were offset by population losses of just over 12,000 people in the central and northern rim counties (grey). Factoring in this population loss, the State of Maine grew by approximately 33,998 people.

Data Source: U.S. Census Bureau Decennial Census (2010, 2020)

A recent 2021 Census estimate indicates the state's total population may have grown by nearly 10,000 people in the last year alone (from April 2020 to July 2021). If accurate, this figure would represent the greatest population growth in Maine in nearly two decades. However, Census officials have cautioned against drawing too many conclusions from the data, which for a variety of reasons (including a change in methodology) is less accurate than the decennial census.⁶

Real estate brokers have also observed that more homes in Maine are being bought by out-of-staters. Typically, a quarter of home sales in the state involve buyers from outside the

state, but during the pandemic that number has risen to nearly 40%.¹⁷

It will likely take several years to know for certain whether Maine has experienced a pandemic-related boost in population, and if so, whether the influx is temporary or permanent.

¹⁷ [Maine Population Grows from In-Migration During Pandemic](#); Portland Press Herald. December 2021.

What is the difference between a **refugee** and an **asylum seeker**?

Both refugees and asylum seekers are people fleeing persecution, but they enter the U.S. in different stages of their journey.

Refugees arrive in the U.S. with their status as people fleeing persecution already recognized by the government. They have often spent time in humanitarian camps abroad where they have applied for and been granted refugee status. When they are granted refugee status, they may also be given permission to enter another country by that country's government. Because refugees arrive in the U.S. with their status already recognized, they are authorized to work in the U.S. upon arrival.

Asylum seekers are people fleeing persecution who have not yet been granted refugee status — though they, too, enter the U.S. through a lawful process. After declaring their intent to seek asylum, seekers must go through an application process to have their refugee status confirmed or denied. Because their status has not yet been granted, asylum seekers are not authorized to work in the U.S. They can apply for work authorization, but they cannot receive a work authorization permit until their asylum application has been pending for 180 days.



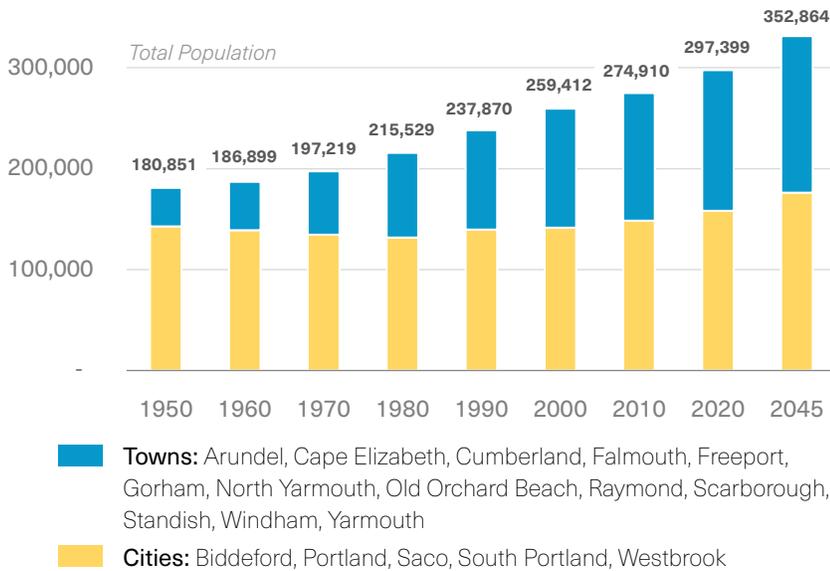
Formerly sheltered at the Cumberland Expo, a mother and daughter are relocated to a “host home” in South Portland while they await permanent housing. Photo: Tom Bell

New Mainers

Another area of growth is in the population of immigrants known as “New Mainers.” The Immigrant Welcome Center estimates there are around 50,000 immigrants living in Maine. Immigrants in Maine have come from over 30 countries in Southeast Asia, Eastern Europe, the former Soviet Republics, the Middle East, Africa, South/Central America, and the Caribbean.

Current immigrants that are coming to Maine comprise both asylum seekers and refugees. In recent years, due to federal limits placed on the number of refugees accepted into the United States, there have been more asylum seekers arriving in the region than refugees. Trends in global population movement often mirror conflicts and tragedies that are happening worldwide. As such, recent asylum seekers have come primarily from the Democratic Republic of the Congo, Angola, Congo Brazzaville, Haiti, Rwanda, Burkina Faso, Nigeria, Ghana, Gabon, and Niger.

In the PACTS region, Portland and South Portland have experienced the largest influxes of immigrants. Over 1,000 asylum seekers arrived to the region in the late 2021 and early 2022. With family shelters full and not enough housing, city staff and nonprofit organizations pieced together housing solutions including hotels, motels, and inns throughout the region. However, this is an expensive and only temporary solution.



Population Growth in the PACTS Region (1950-2045)

Between 1950 and 2000, our region's towns (blue) experienced considerable growth, while our cities (orange) either lost population or remained stable. Since 2000, our cities have begun to grow again, but decades of accumulated growth in our surrounding towns means that roughly 50% of the region's population now live in outlying communities. (In 1950, only about 20% of the population lived in outlying communities. Unlike previous projections, the 2045 forecast predicts more growth in our cities, but not enough to dramatically tip the existing balance without communities changing the way they develop.

Data sources: Decennial Census; Woods & Poole Economics, Inc.

Where Population Growth is Occurring

Between 1950 and 2000, the vast majority of population growth in Greater Portland has occurred in suburban and rural communities, away from job centers and services. Over time, this sprawling development pattern, which is difficult to serve by public transit, has contributed to a reliance on vehicle travel, traffic congestion, longer commutes, increased air and water pollution, and the weakening of town and city centers.

Recent trends, however, suggest a renewed interest in urban areas. As the graph above shows, since 2000 the urban communities in the region (Biddeford, Portland, Saco, South Portland, and Westbrook) have stopped losing population and are now attracting new people and development.

The map on the next page provides a more detailed perspective of population change in the last decade. While Scarborough, which is predominantly suburban, grew the most

of any community (3,216 people), the cities of Westbrook (2,906), Portland (2,214), Saco (1,899), South Portland (1,496), and Biddeford (1,275) also experienced considerable growth. Additionally, much of the growth in

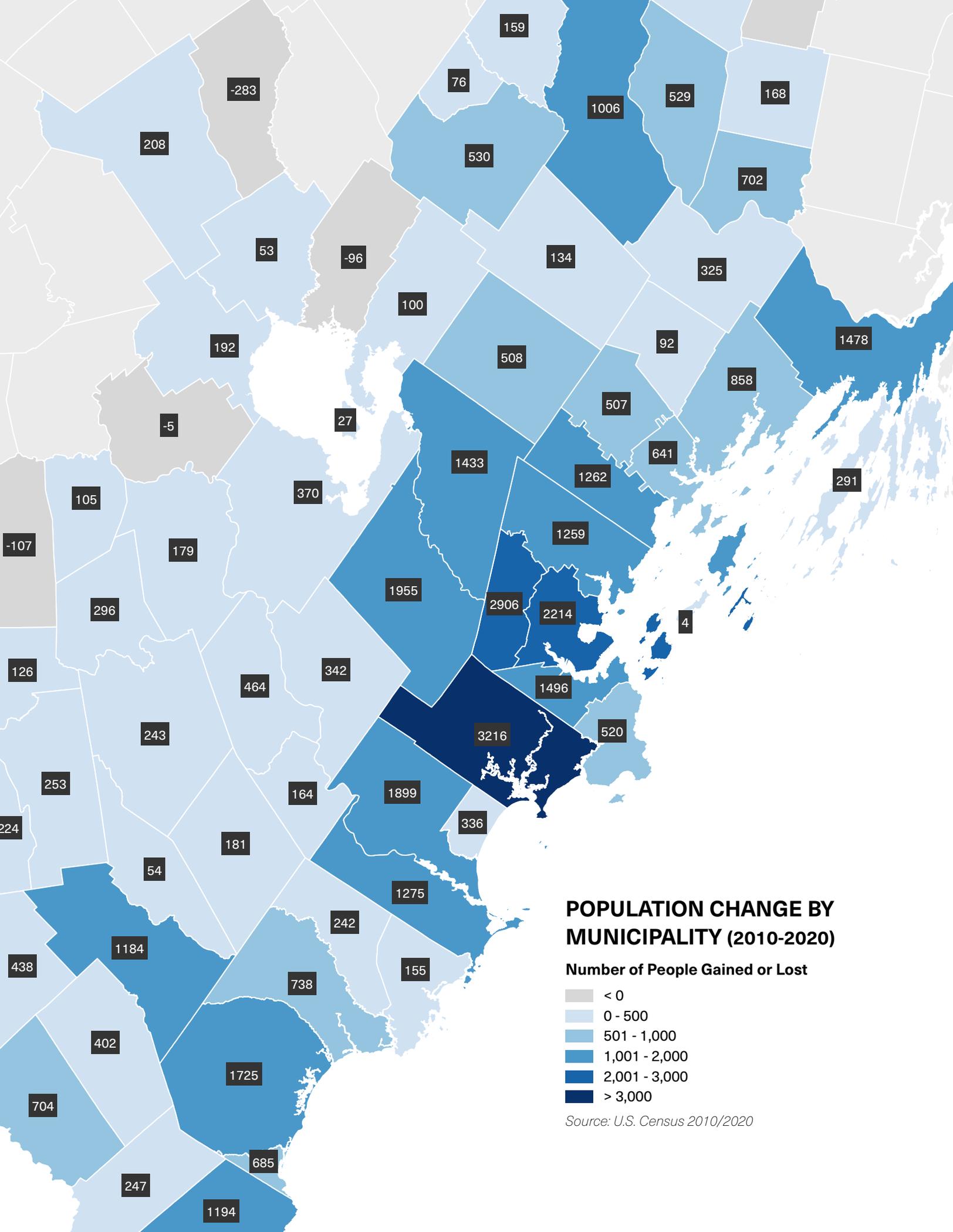
Scarborough occurred in compact, highly walkable neighborhood developments such as Scarborough Downs and the Eastern Village.

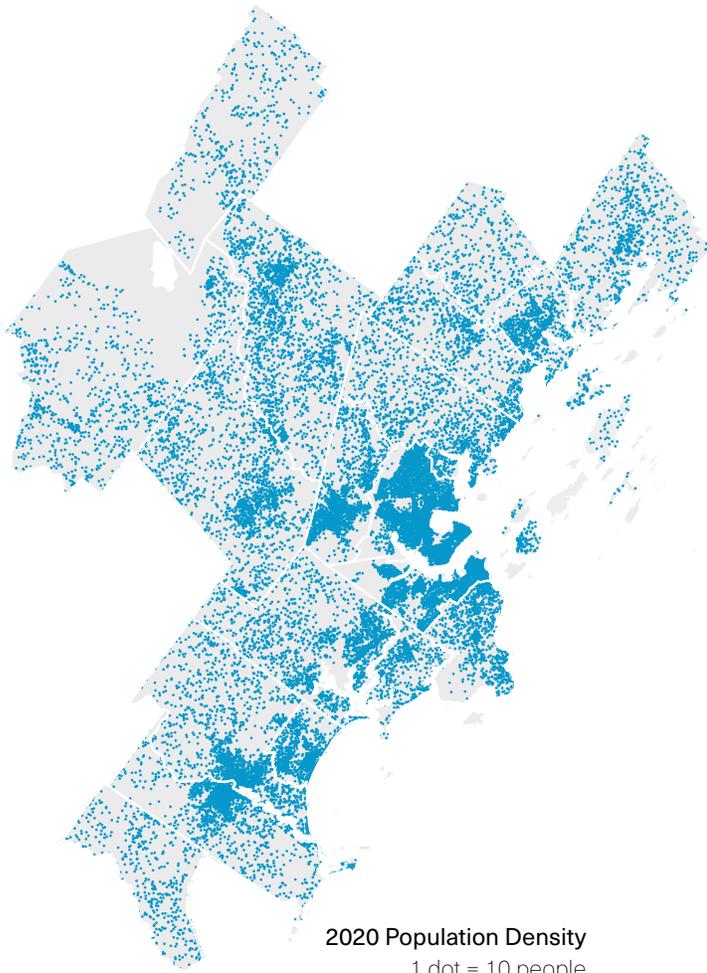
Encouraging growth in the region's villages, downtowns, and urban areas is a key strategy for meeting our emissions reductions goals. Among other benefits, research shows that people who live in more compact neighborhoods with a diversity of housing, jobs and services nearby make less vehicle trips and are more likely to

walk, bike, or take public transportation to get around.¹⁸

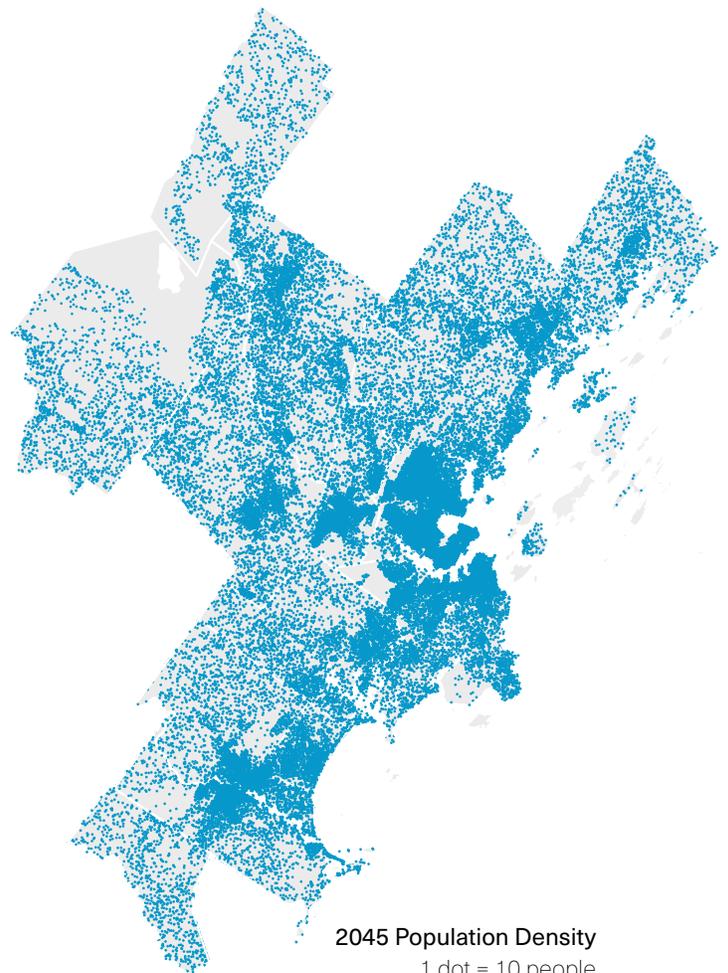
Encouraging growth in the region's villages, downtowns, and urban areas is a key strategy for meeting our transportation goals.

¹⁸ [Effects of the Built Environment on Transportation: Energy Use, Greenhouse Gas Emissions, and Other Factors.](#) Cambridge Systematics (2013).





2020 Population Density
1 dot = 10 people
Source: 2020 Census



2045 Population Density
1 dot = 10 people
Source: Woods & Poole Economics, Inc.

Future Population Projections

While developing population projections is always challenging, the uncertainty imposed by the pandemic has made it exceptionally difficult. With remote work now a norm for many jobs, generally held assumptions about the amount of in-migration to Maine may no longer hold true. If Maine is seen as a place of refuge — from the pandemic, from the impacts of climate change, etc. — the next decade could mimic the rapid growth experienced during the back-to-the-land movement of the 1970's. However, a major barrier hindering growth is a widespread shortage of available housing.

Keeping these uncertainties in mind, the *Connect 2045* forecast predicts Greater Portland will continue to gain new residents.

Between 2020 and 2045 the combined population of the 18 PACTS communities is projected to grow by 55,465 people (from 297,399 people in 2020 to 352,864 people in 2045), for an increase of 19%. The maps above, ground-truthed by local officials, provide a glimpse at where population growth is expected to occur in the region. Unlike previous projections, the 2045 forecast suggests more growth may occur in the region's urban communities than in our outlying communities over the next 25 years. The *Connect 2045* forecast, however, is not a prophecy. Where and how we grow in the future is ultimately shaped by the decisions we make and the actions we take.

Other Population Changes

While the Greater Portland region continues to grow in population, as the table to the right shows, in the last decade our demographic and socioeconomic makeup has also changed. The following are a few key takeaways:

- **Our population is aging.** Older adults (people age 65 and over) were the fastest growing age group between 2010 and 2020, increasing from 14% to 18% of the population (from 38,594 people to 51,015 people). In the coming decades, the region's population and workforce will become increasingly older, with all Baby Boomers entering the 65+ category by 2030.
- **Our population is more racially and ethnically diverse.** Another rapidly growing population is made up of those whom self-identify as People of Color and/or Hispanic, which increased from 8% to 14% of the population between 2010 and 2020 (from 22,878 people to 40,820 people). Although our region's total population remains more than 85% non-Hispanic White, our racial and ethnic make-up is changing rapidly.
- **Fewer people can afford homes.** The gap between incomes and home values increased threefold. The median household income increased by approximately \$20,000, while the median household value increased by nearly \$60,000. Although the percent of people below poverty level declined slightly (from 11% to 8%), this is partly because the 2010 Census occurred amidst the Great Recession.
- **Our households are smaller.** The average household size continued its long running decline, from 2.31 people in 2010 to 2.28 in 2020. This nationwide trend is attributed to smaller family size and the rise of nuclear families which has resulted in fewer extended family living arrangements and smaller households, among other factors.

	2010	2020
Total Households	114,989	126,421
Average Household Size	2.31	2.28
Median Household Income*	\$59,706	\$79,163
Median Home Value*	\$265,655	\$323,655
Population Below Poverty Level*	11%	8%
Population Over Age 65*	14%	18%
Population Under Age 25*	21%	18%
People of Color and/or Hispanic	8%	14%

Population Characteristics

The table above shows how the population in the PACTS region has changed in the last decade. Key takeaways are that we are getting older, becoming more diverse, the gap between incomes and home values has increased threefold, and our average household size continues to get smaller.

Sources: U.S. Census ACS Est. 2016-2020/Census 2020

These demographic trends are not unique to our region. For example, the Census estimates the number of older adults could nearly double to about 90 million by 2050, and Census projections suggest the country will be “minority White” by 2045.

It is important for PACTS to understand how social characteristics and identities relate to people's preferences, behaviors, and access to resources. For example, a significant portion of older adults will likely want to age in place and may require more supportive transportation services (e.g., dial-a-ride and volunteer transportation programs). Likewise, among other challenges, racial and ethnic minority groups are more likely to rely on public transportation, more likely to live near heavily trafficked roads, and less likely to own a vehicle. These are just some of the factors we will need to consider in the years ahead to develop a transportation system that is equitable and supports the needs of the people who live here.



Photos: Tom Bell

Employment Change

THE GREATER PORTLAND REGION is the largest employment center in Maine. True to form, in the period between 2002 and 2019 (the most recent data available), the 18 PACTS communities added approximately 30,768 jobs — going from 161,889 jobs in 2002 to 192,657 jobs in 2019. This growth accounted for approximately 78% of all jobs added in Maine during the same time period.¹⁹

Despite the cumulative growth, in many ways the economic history of the last two decades is the story of slow economic recovery after a recession in 2005 and the bursting of the U.S. housing bubble and global financial crisis of 2007-2009. Known as the Great Recession, its effects were most harshly felt in the PACTS region in 2009 when we lost nearly 4,500 jobs.

Starting in 2010 the PACTS region gradually began to recover from the Great Recession, even adding a record number of jobs between 2016 and 2019. Unfortunately, 2019 would be the last “normal” year for the foreseeable future.

Impacts of the Pandemic

With the onset of the COVID-19 pandemic, Greater Portland experienced one of the most

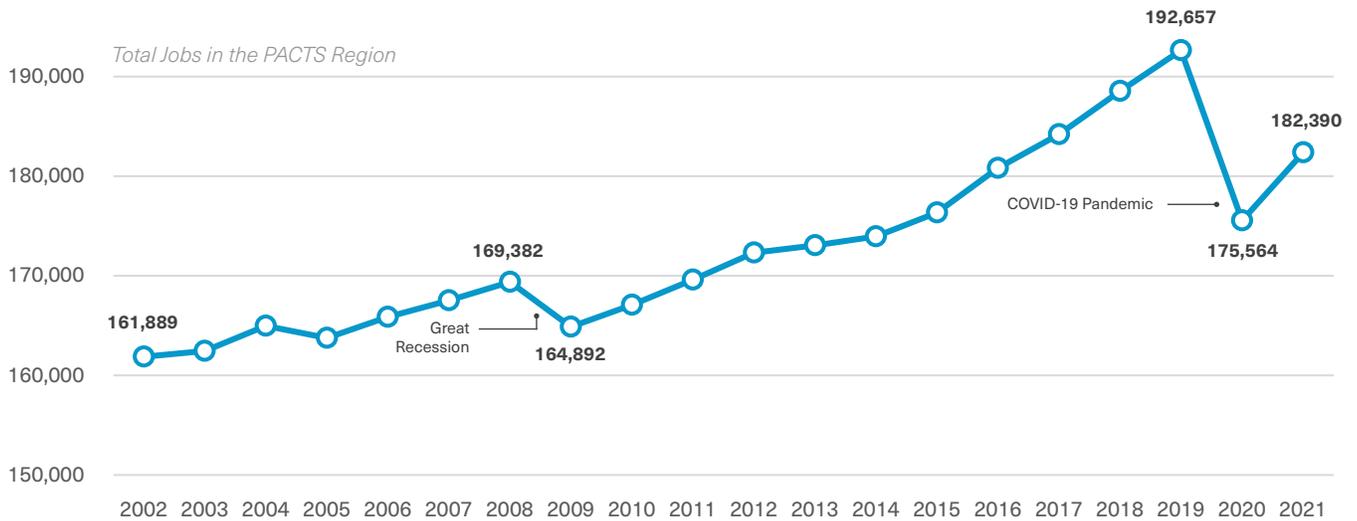
dramatic reversals of economic fortune in the region’s history. Described by the World Bank as “the largest global economic crisis in more than a century,”²⁰ when the pandemic took hold in March of 2020 commerce was dramatically reduced. For a period, non-essential businesses were forced to close, while those that remained open experienced sharp declines in patronage.

According to the State Economist, job loss throughout the pandemic tended to concentrate in several key industries: leisure and hospitality, healthcare and social assistance, and retail trade were among those that were initially hardest hit. All told, approximately 94,000 jobs were lost across the state in the first few months following the onset of the pandemic.²¹

¹⁹ U.S. Census Bureau. (2022). LEHD Origin-Destination Employment Statistics (2002-2019).

²⁰ [The Economic Impacts of the COVID-19 Crisis](#). World Development Report 2022. World Bank.

²¹ [Maine’s Economy During COVID-19: 2020 Year in Review](#). Office of the State Economist. 2020.



Total Jobs by Year in the PACTS Region

The graph above shows the total number of jobs by year in the PACTS region. The COVID-19 pandemic resulted in a one-year loss of over 17,000 jobs. More recent data suggests signs of recovery, but an emerging labor shortage is stifling growth.

Initial Signs of Recovery

As the graph above shows, the total number of jobs in the PACTS region plummeted from a high of 192,657 jobs in 2019 to 175,564 jobs in 2020 — a loss of 17,093 jobs. However, more recent employment figures suggest the initial shock of job losses in 2020 has subsided and we are transitioning into a period of rebuilding and recovery. In 2021, we gained 6,826 jobs. Although the data shows we have not fully recovered from the pandemic, this is significant progress, and recent short-term forecasts predict employment to return to its pre-pandemic peak by 2023.²²

Unfortunately, the economic impacts of the pandemic were highly disproportionate across socioeconomic and demographic groups. Consistent with nationwide trends, job loss was concentrated among Maine’s lowest earners.

While the pandemic led to widespread job losses, it also dramatically changed how and where jobs are performed. Workers in certain occupations have been able to transition to remote working while others have not.

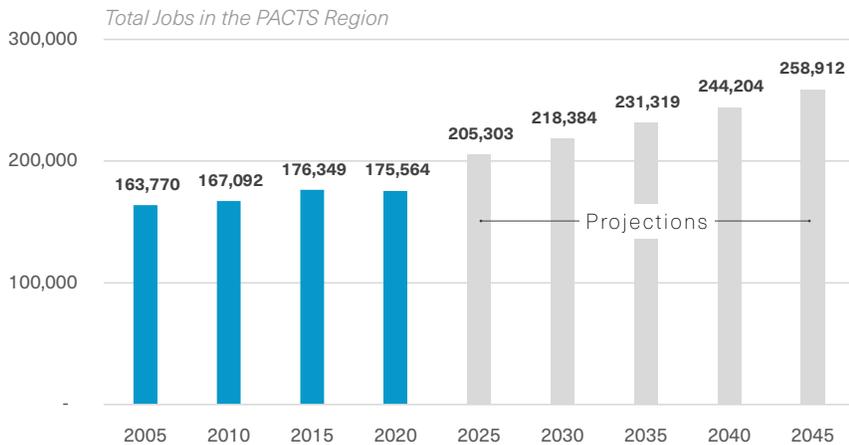
Labor Shortage

As the COVID-19 pandemic recedes in Maine, business owners have begun to raise a new economic concern as they report difficulty hiring workers to fill vacancies. While employment numbers are gradually improving, an emerging labor shortage is stifling growth and hurting productivity. The labor shortage is a nationwide phenomenon, but a recent report suggests Maine is one of the hardest states hit.²³ According to the report, Maine has a lower percentage of adults in the workforce than the national average. The impacts of these shortages can currently be seen in help wanted signs on store windows in virtually every community across the state.

While a decline in the size of Maine’s labor force has long been anticipated (primarily due to Maine’s aging population, low birth rate, and

²² [Report of the Consensus Economic Forecasting Commission](#). Maine Department of Labor. February 2022.

²³ [Making Maine Work: Critical Investments for the Maine Economy](#). Maine State Chamber of Commerce / Maine Development Foundation, 2022.



Future Employment Projections

The *Connect 2045* employment forecast predicts a prolonged period of continued growth. The forecast predicts the 18 municipalities that make up the PACTS region will add 66,255 jobs by 2045 (going from 175,564 jobs in 2020 to 258,912 jobs in 2045).

low number of people in their 20's entering the workforce), it came earlier than anticipated due to the pandemic. Many older workers decided to retire early, young parents withdrew from work to care for their children, while others used the pandemic as a time to take a pause and reevaluate their careers. The lack of housing added another challenge to hiring and retention in Maine.

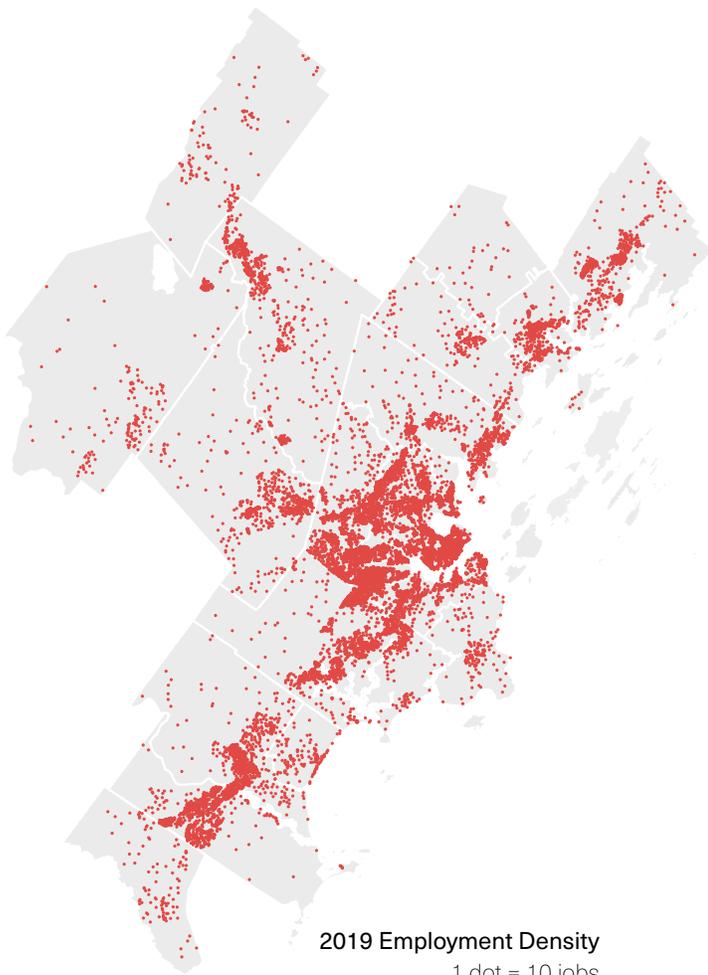
The most obvious ways for Maine to overcome this shortage of workers are to increase labor force participation among our existing population (in particular among those less likely to work such as young adults, New Mainers, working parents, older workers, and veterans), as well as attract new workers to the state.

The impact of the labor shortage on the transportation system is that less projects are completed. Contractors lack the crews to get jobs done, which also drives up costs. From a public transit perspective, the region's bus and paratransit agencies are reporting a persistent shortage of drivers as well as other operations staff.

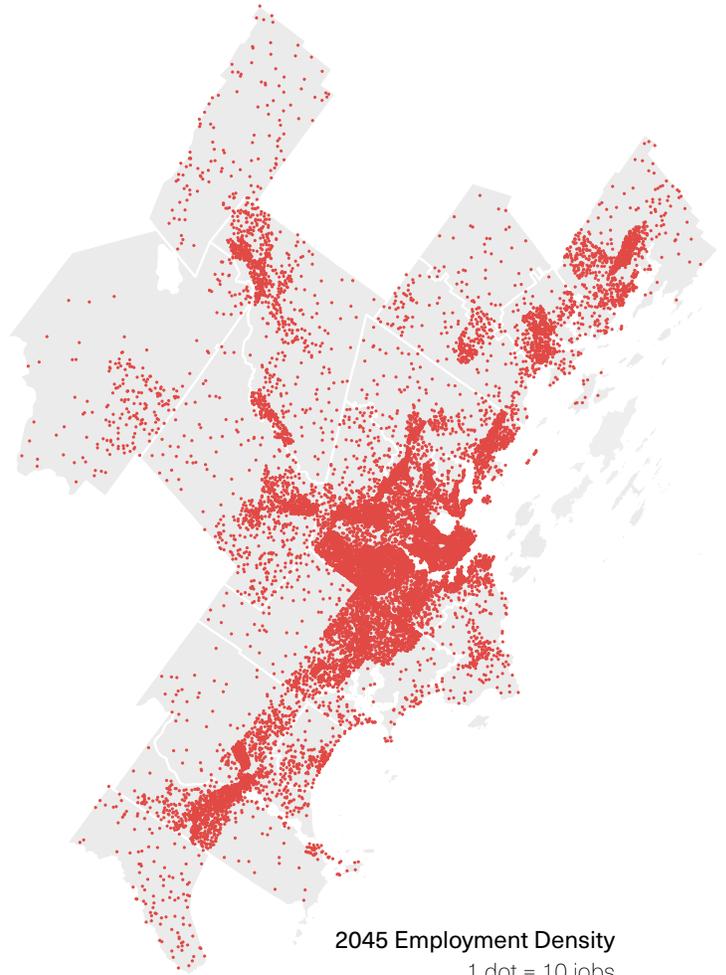
Future Projections

As with population forecasting, today's accelerated pace of change and increased uncertainty make it ever more difficult to anticipate what is to come. With that in mind, the *Connect 2045* employment forecast predicts a prolonged period of continued job growth. The forecast (shown above) predicts the 18 municipalities that make up the PACTS region will add 83,348 jobs by 2045 (going from 175,564 jobs in 2020 to 258,912 jobs in 2045).

This level of employment growth may be realized if we continue to attract migrants from other states (and countries) to replace aging baby-boomers, and, if young people growing up in Maine choose to stay here as they enter the workforce and progress through their careers. One significant barrier to employment growth is a lack of available housing. If the region cannot increase our supply of available housing more people will need to commute from outside the region or work remotely.



2019 Employment Density
1 dot = 10 jobs
Source: 2019 Census



2045 Employment Density
1 dot = 10 jobs
Source: PACTS Travel Demand Model

The maps above provide a snapshot of current employment density (on the left) and the 2045 projection for where job growth is expected to occur (on the right). While our population is generally dispersed throughout the region, the vast majority of jobs are located in our region's urban centers and downtowns. As the map on the left illustrates, the areas where employment density is highest include the urban core around Portland (encompassing the cities of Westbrook, South Portland, and Scarborough), Downtown Biddeford and Saco, the I-95/I-295 and Route 1 corridors north to south through the region, and North Windham.

As the map on the right shows, with a few exceptions the 2045 forecast largely predicts employment density will remain concentrated in the region's downtowns and urban areas, but in greater densities. This represents an ideal scenario if it were to happen, since these are the areas that can support growth in the most sustainable manner. Another major opportunity for the region is to add housing to areas that are exclusively service and employment oriented, such as the Maine Mall in South Portland, so people can live closer to where they work. The next page highlights a few emerging mixed-use development opportunities in the region that are either under construction or under consideration or planning.

Mixed-Use Development Opportunities



Rendering of the Pearl Street Riverfront District in Biddeford



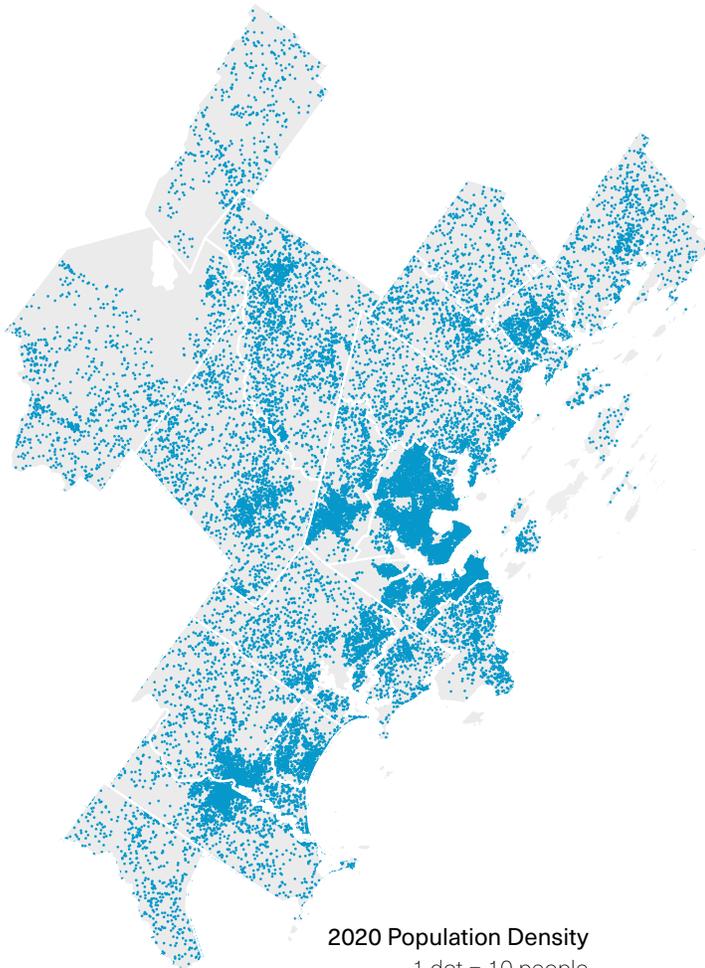
Conceptual rendering reimagining the Maine Mall in South Portland.



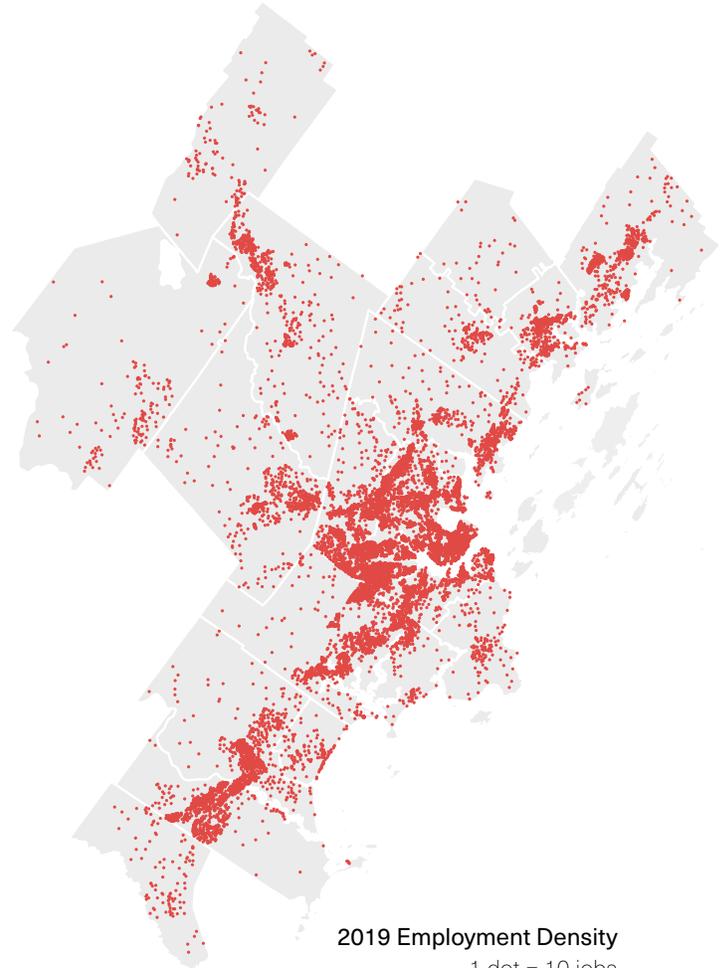
Rendering of Rock Row in Westbrook



Rendering of The Downs in Scarborough



2020 Population Density
1 dot = 10 people
Source: 2020 Census



2019 Employment Density
1 dot = 10 jobs
Source: 2019 Census

Where People Live & Work

WHERE PEOPLE WORK, in relation to where they live, is a major driver of travel demand and behavior. The farther people live from work, the more likely they are to drive to work. Proximity to jobs can also affect the employment outcomes of residents. People who live closer to jobs are more likely to work. They also face shorter job searches and spells of joblessness.²⁴

Existing Commute Patterns

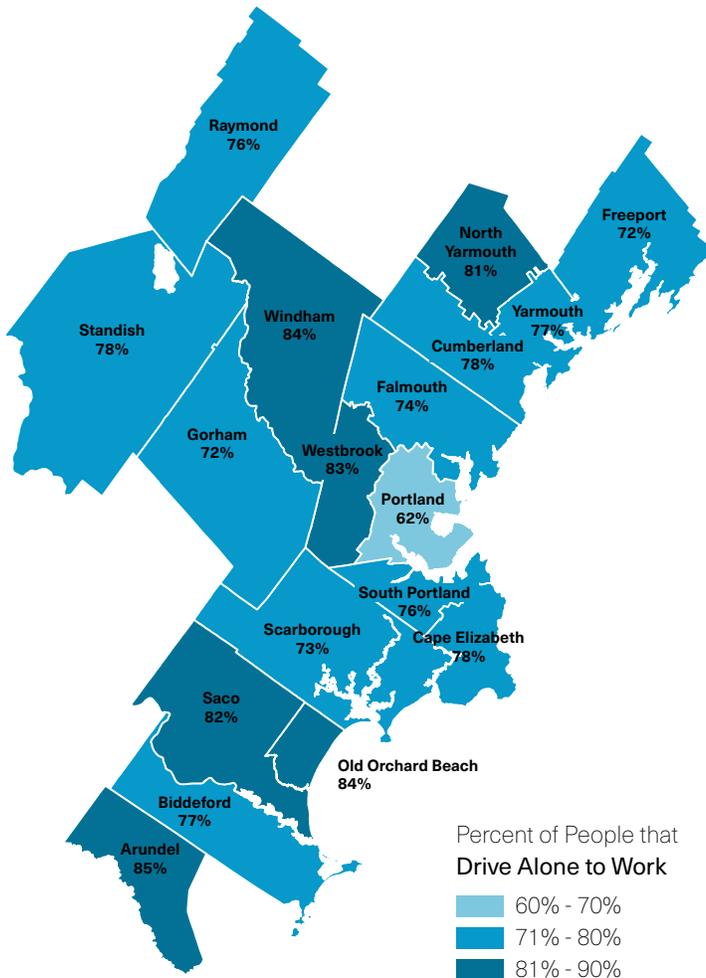
As the maps above show, where people live is generally more dispersed throughout the region than where people work. This pattern means more people need to commute longer distances to get to work and are more likely to drive rather than walk, bike, or take public transit.

In the PACTS region, approximately 74% of people drive to work alone, whereas only 10% work from home, only 5% walk to work, and only 1% bike or take public transit, respectively.

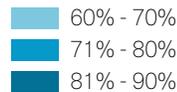
To meet our aggressive emissions reductions goals, we need to transform the way we live and travel. Proven ways to reduce our vehicle dependence include:

- **Directing future growth to appropriate areas** where jobs, housing, and services are in close proximity. In some cases, this may

²⁴ [The Growing Distance Between People and Jobs in Metropolitan America](#). Brookings Institute. 2015.



Percent of People that Drive Alone to Work



Source: Census Bureau ACS 5-year Est 2016-2020

mean expanding housing choices in employment centers, and expanding employment in residential neighborhoods. Ensuring housing affordability is also critical.

- **Investing in public transit** so it is frequent, fast, and convenient.
- **Providing safe and accessible walking and biking facilities** so people can walk or bike to work (or to access transit).
- **Investing in broadband** so more people can work from home (or if a commute is necessary make fewer trips to meetings or appointments that can be held virtually).

As the map above shows, Portland is one of few communities in the region where the percent of people who drive to work alone is considerably less (62% compared to the regional average of 74%). However, there are many places in the region where this is becoming more common — in particular Downtown Biddeford/Saco, Westbrook, and South Portland.

How do people **commute to work** in the PACTS region?



74% Drive Alone



10% Work from Home



8% Carpool



5% Walk



1% Public Transportation



1% Bike

Source: Census Bureau ACS 5-year Est 2016-2020

A Lack of Housing

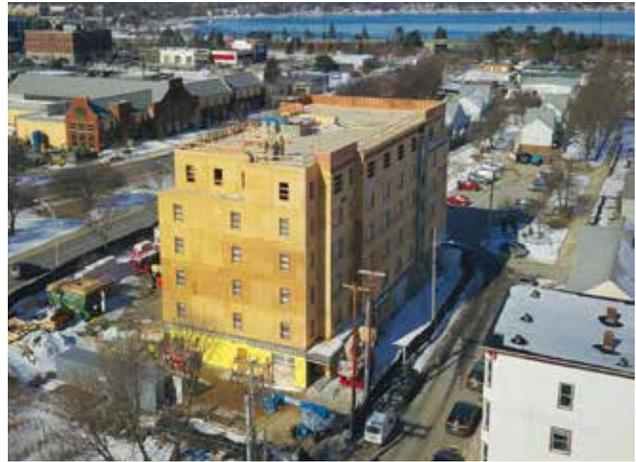
THE GROWING LACK of affordable housing for low-, moderate-, and middle-income people over the last decade has become the top barrier to quality of life and economic opportunity for residents of Greater Portland.

In the last ten years rents and housing prices have risen sharply, mirroring national trends, but making our region's aging demographic challenge even worse. In brief, we have too few people to fill available and future jobs, and too few homes that people can afford to let them live in reasonable proximity to their jobs, their families, and their community.

The high price of housing in Greater Portland, and nationwide, is largely attributed to low housing supply and high housing demand, producing a widespread shortage of available homes and apartments that people can afford, exacerbated by in-migration during the pandemic that has exceeded new housing construction and added more market pressure to housing prices.

A recent report that quantifies the underproduction of across the United States found the Portland-South Portland metropolitan area is short by approximately 8,000 housing units.²⁵ This undersupply of housing, combined with other factors, including interest rate hikes, inflation, and supply chain disruptions, is making it increasingly difficult for many people to find housing they can afford. And simply put, without places to live, people cannot contribute to society or the local economy.

In the last decade, median home values in the region rose from \$265,655 in 2010 to \$323,655 in 2020, while median rent went from \$915 to \$1,220. Unfortunately, these increases are rising faster than incomes. Roughly 44% of renters



Portland Housing Authority's Bayside Anchor project under construction in 2020. Photo: GPCOG

in the region are categorized by the Census as "cost-burdened" because they spend more than 30% of their income on rent, while 23% of homeowners are cost-burdened.²⁶

When a cost-burdened renter, or homeowner, is spending more than 30% of their income on housing, they must constrain spending on other basic needs such as food, healthcare, or transportation. Additionally, these budget trade-offs make it virtually impossible to have any income left over for savings.

Disproportionate Impacts

The lack of affordable housing has a disproportionate impact on vulnerable population groups, such as older adults wishing to age in place and people of color. For example, the median income for a family of four to afford the average home in the Greater Portland Housing Market Area is \$112,700 in 2022.²⁷ According to the most recent Census estimates, the median white household in the

²⁵ [Housing Underproduction in the U.S.](#) Up for Growth, 2022.

²⁶ U.S. Census Bureau: 2010 Census; ACS 5-year Est. 2016-2020.

²⁷ The Area Median Income for metropolitan areas is set by the Department of Housing and Urban Development (HUD).

²⁸ U.S. Census Bureau ACS 5-year Est. 2016-2020.

region earns an income of \$78,191, while the median black household earns \$42,508.²⁸ Both incomes are below what is needed to afford a home in the region, but the median income for black households is nearly half as much as the white household and far below what is needed to purchase a home.

Other Consequences

Although high housing costs affect those with low incomes the most — and social equity concerns are of the utmost importance — the housing crisis is a problem that ultimately impacts everyone. The following are a few additional reasons why:

- **Increased traffic:** A lack of affordable housing in urban areas and job centers often means people are forced to move far from their places of work, family and friends, or support systems and services. Faced with long commutes, most people then drive to work (or other places) which creates more traffic and emissions. Those with long commutes are also saddled with added costs for gas and maintenance.
- **Lack of workers:** Employers have a hard time filling jobs if people lack reliable transportation. The geographic divide between jobs and workers is often referred to as “spatial mismatch” and it can significantly impact economic growth. If people do not have access to jobs, growth slows down.
- **Less purchasing power:** People who spend most of their income on housing or transportation to get to work naturally have less money to devote to other things.
- **Less diversity:** When low-income people are priced out of urban areas and job centers it usually leads to a decrease in racial, ethnic, and economic diversity. Additionally, high-income earners taking their place typically use transit

less frequently even though they live in some of the region’s most transit-rich neighborhoods.

- **Increased homelessness:** Rising costs of housing, combined with inflation, also leads to increased homelessness. In Portland, the current demand for shelter beds and social services far outstrips supply.

Zoning Reform

The accelerating gap between what housing costs and what people can afford is a complex, national issue and there is no simple remedy. However, zoning reform is one concrete way in which local and state governments can make a difference. Many existing zoning regulations, such as single-family zoning districts, parking requirements, and density restrictions, for example, can create constraints for affordable housing. These regulations keep densities low and limit overall supply, which increases housing costs in both urban and suburban communities.

A recent bill passed by the Maine Legislature and signed into law by Governor Janet Mills (LD 2003: “An Act To Implement the Recommendations of the Commission To Increase Housing Opportunities in Maine by Studying Zoning and Land Use Restrictions”), seeks to ease the state’s affordable housing crisis. Among other provisions, the bill expands the ability to build accessory dwelling units and multi-unit properties in residential zones by loosening zoning restrictions statewide.

In 2023, municipalities across the region and the state will start to implement new housing friendly state requirements. However, the outlook for closing the housing gap in our region remains uncertain. Additional transportation policies that support housing density are needed to help people find housing choices that meet their needs and their budgets.

Transportation Equity

THERE IS INCREASING RECOGNITION of inequalities that exist in our society today. Since transportation touches every aspect of our lives (where we live, work, play, and go to school) it is critical to consider equity in all transportation decisions and investments.

Historically, in the United States, and in our region, not all communities have received the same benefits from transportation investments, and some communities have had to shoulder a disproportionate share of the burden. Beginning with the forced displacement of indigenous peoples from their ancestral lands, the racist legacy of our transportation and housing systems is still evident today. Redlining, racialized residential segregation, highway building in predominantly black and ethnic minority neighborhoods, and lack of investment in urban mass transit have also shaped our current housing and transportation systems.

In 2021, the Biden-Harris administration created the Justice40 Initiative to “confront and address decades of underinvestment in disadvantaged communities.” The initiative ensures that at least 40% of the benefits of all federal investments — including transportation investments — go to disadvantaged communities.

PACTS recognizes the important role we play in redressing past disparities and developing an equitable transportation system that is accessible to everyone going forward. As the region’s population continues to grow and change, PACTS is committed to evaluating all decisions, policies, and investments with an equity lens. The first step in doing so is to have a

full understanding of where traditionally — and currently — underserved communities reside and how our transportation investments are serving their needs.

Traditionally Underserved Communities

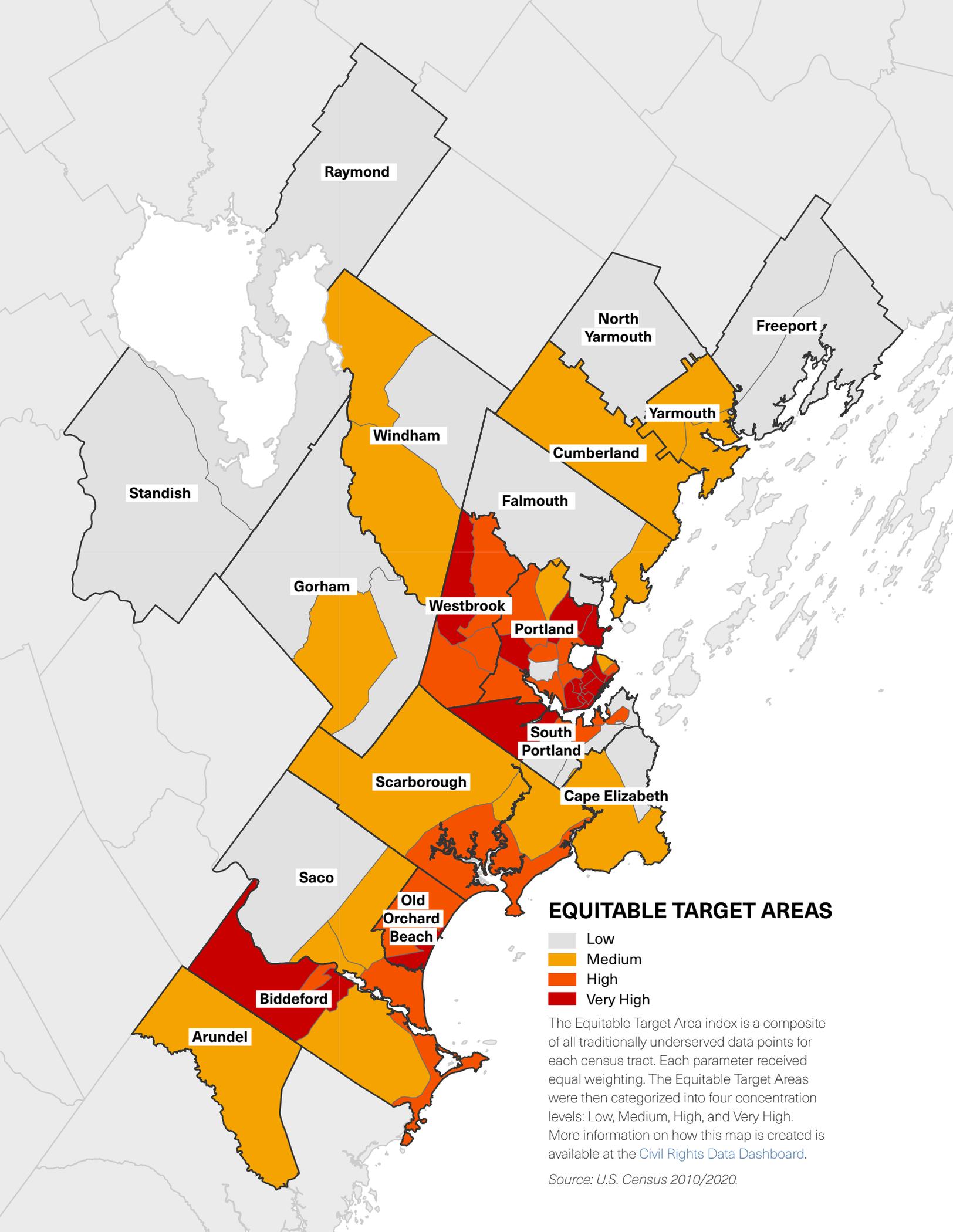
To understand where inequities are more likely to exist, PACTS routinely evaluates census data and maintains a Civil Rights Data Dashboard.²⁹ The dashboard is a series of interactive maps that identify neighborhoods where there are higher proportions of older adults, people with low-incomes, people with disabilities, people of color, people with limited vehicle access, people born outside the U.S., and people with limited English proficiency.

PACTS is committed to evaluating all decisions, policies, and investments with an equity lens.

The above considerations are then combined to create an “Equitable Target Areas (ETA)” index (see map on next page). The index classifies each census tract as low, medium, high, or very high based on the proportion of traditionally underserved communities who live there.

PACTS currently uses the Civil Rights Data Dashboard and ETA index as a resource when making investment decisions and scoring projects. In the years ahead, PACTS plans to use the Civil Rights Data Dashboard (as well as other relevant information) to evaluate where we have funded projects in the past (and whether those investments have played a role in perpetuating inequalities), and to ensure that PACTS funding decisions comply with the Justice40 Initiative to ensure that at least 40% of all investments go to disadvantaged communities.

²⁹ [Civil Rights Data Dashboard](#). PACTS, 2022.



Raymond

North Yarmouth

Freeport

Yarmouth

Windham

Cumberland

Standish

Falmouth

Gorham

Westbrook

Portland

South Portland

Scarborough

Cape Elizabeth

Saco

Old Orchard Beach

Biddeford

Arundel

EQUITABLE TARGET AREAS

- Low
- Medium
- High
- Very High

The Equitable Target Area index is a composite of all traditionally underserved data points for each census tract. Each parameter received equal weighting. The Equitable Target Areas were then categorized into four concentration levels: Low, Medium, High, and Very High. More information on how this map is created is available at the [Civil Rights Data Dashboard](#).

Source: U.S. Census 2010/2020.

In Greater Portland...



9% of households are **below poverty level** (10,948 households)



7% of households **have no vehicle available** (8,741 households)



14% identify as **people of color and/or Hispanic** (40,820 people)



6% of people were **not U.S. Citizens at birth** (18,227 people)



3% of people **speak English "less than very well"** (7,819 people)



12% of people **have a disability** (33,865 people)



18% of people are **age 65 and over** (51,015 people)

How PACTS Considers Transportation Equity

Identifying where traditionally underserved communities exist, however, can only take us so far. To this end, PACTS is committed to actively seeking out and understanding the needs of those who experience barriers to transportation. The following are a few of the key ways in which PACTS does this:

- **Federal Requirements:** PACTS periodically updates two federally-required documents: a *Public Involvement Plan* that lays out goals and strategies to better engage the public in the decision-making process, and a *Civil Rights Plan* to ensure that public funds are not spent in a manner that encourages, subsidizes, perpetuates, or results in discrimination. In addition to these required documents, PACTS has developed its own *Inclusive Transportation Planning Toolkit* to help staff and consultants more easily find and access guidance on inclusive transportation planning and decision-making.
- **"Mobility for All" Programs:** PACTS engages a broad range of community members and organizations in improving transportation access for people who experience barriers. Mobility for All initiatives include: the Community Transportation Leaders Program, the Moving Maine Network, the Bus Ambassadors Program, the Transportation and Community Network, the Southern Maine Mobility Guide, the Ride with Me event, Mobility Liaisons, and the Travel Helpers Program.
- **Accessible Communications:** PACTS complies with Title VI Act and Executive Order 13166 to provide limited English proficiency individuals with meaningful access to its programs and services. PACTS regularly translates communications materials into five languages (Spanish, French, Portuguese, Arabic, and Somali) and ensures they are screen-reader friendly for those with visual impairments. PACTS also ensures that virtual engagement complies with the international Web Content Accessibility Guideline standard.
- **Meaningful Involvement:** PACTS has changed its committee structure to add individuals from underrepresented communities.

The next page describes the Mobility for All programs in more detail.



Photos: Tom Bell

Mobility for All Programs

THE PACTS MOBILITY FOR ALL PROGRAMS engage a broad range of community members and organizations in improving transportation access for people who experience barriers. Mobility for All initiatives use inclusive practices to involve older adults, people with disabilities, people of color, and other underserved communities in transportation planning and decision-making. Mobility for All initiatives include:

COMMUNITY TRANSPORTATION LEADERS

People with first-hand experience encountering all kinds of barriers to the transportation system are recruited to participate in PACTS decision-making. The Community Transportation Leaders sit on PACTS committees and serve as advisors to our planning processes.

BUS AMBASSADORS

Bus Ambassadors work directly with individuals and families who need support to learn how to ride the bus and understand transportation options. The program increases cross-cultural and multilingual access to information about public transit in the Greater Portland region.

TRANSPORTATION & COMMUNITY NETWORK

The Transportation and Community Network is a network of more than 80 stakeholders from multiple sectors impacted by transportation barriers as well as individuals with first-hand experience. The network serves as a bridge-builder between cross sector partners around transportation challenges, resources, and information sharing.

SOUTHERN MAINE MOBILITY GUIDE

The Southern Maine Mobility Guide is a guide to transportation in Cumberland and York counties intended to help people who live, work, and play in Southern Maine connect to where they need to go. The guide is focused on transportation options and mobility support for people who cannot drive or cannot afford to own a car. It is also helpful both for individuals seeking transportation and those in caregiving or support roles.

RIDE WITH ME

The Ride with Me event pairs decision-makers with individuals who have lived experience of transportation barriers to spend a few hours riding together — on the bus, train, and paratransit. The event is meant to empower transit riders to share their experience, perspectives, and ideas with decision-makers. These decision-makers — from municipal government, transportation agencies, and planning organizations — benefit from first-hand insight into the transportation challenges experienced by community members.

MOBILITY LIAISONS

Mobility Liaisons are individuals with personal experience of mobility-related transportation challenges (this may be because of disability, age, income, language, or other reasons). They develop and co-facilitate the Community Transportation Leaders program, assist with focus groups, and collect feedback from community members. They also help inform the community of plans and decisions, promote surveys and assist neighbors in sharing public input, and recruit other stakeholders to participate in transportation planning processes.

TRAVEL HELPERS

With special funding from the Federal Transit Administration, GPCOG and PACTS developed and piloted a Travel Helpers Training. This training module for staff of human services and healthcare agencies prepares them to offer travel training (the practice of teaching people about transportation options and how to travel independently on public transit and paratransit) to their clients and patients.



Above: Mobility-as-a-Service, or MaaS, is being piloted in major cities throughout the world. MaaS allows users to plan, book, and pay for multiple types of mobility options within one app. Much the same way Netflix and Spotify have revolutionized how we access tv, movies, and music, MaaS provides convenient access to multiple forms of transportation without actually owning them. Photo: Shutterstock.

Below: Connected vehicle technology will allow vehicles to communicate with one another (and other connected infrastructure such as signs and traffic signals) and share important safety and mobility information in real time. Photo: Getty Images.

Technological Innovations

THE TRANSPORTATION SECTOR is one of the most disrupted industries today. The invention of the smart phone and recent developments in artificial intelligence and automation combined with the success of the sharing economy have transformed how we get around and how we think about mobility. The following are a few current and future innovations, in various stages of development, that are poised to shape our transportation system in the future.

Micromobility

Micromobility refers to a range of small, lightweight vehicles operating at speeds typically below 15 mph and driven by users personally. Micromobility devices include bicycles, electric bikes, electric scooters, electric skateboards, and shared bicycle fleets. Many cities are using short-term rental programs for bikes, electric bikes, and scooters to help with general mobility needs, and to address the “first mile/last mile” issue for commuters using public transportation. In August 2022, the City of Portland launched its new bike share program in partnership with Tandem Mobility. The program, which is being implemented in phases, will have stations and racks throughout the city and a fleet of 200 bikes (including 50 electric bikes) when fully operational.

Mobility-as-a-Service

Mobility-as-a-Service, or MaaS, is a concept that is being piloted by major cities throughout the world. MaaS allows users to plan, book, and pay for multiple types of mobility services (e.g., public transit, micromobility, Uber/Lyft, taxi service, car rental, etc.) all within one software platform or app. The concept represents a shift away from personally owned vehicles and towards mobility provided as a service. For example, users can pay a monthly fee to have unlimited access to a range of mobility options, or pay per trip, or only pay for the mobility options they need. If MaaS takes off, transportation providers will no longer exist in their separate “train” or “bus” or “rideshare” bubble. Rather, they will negotiate pricing with MaaS operators, who will package services and offer plans and payment options to better suit consumers.

Connected and Autonomous Vehicles

Connected vehicle technology will allow vehicles to communicate with one another (and other connected infrastructure such as signs and traffic signals) and share safety and mobility information in real

time. For example, a connected vehicle could alert a driver when another connected vehicle is about to run a red light, or to determine who has the right-of-way at a four-way stop, or when merging onto a highway.

Autonomous Vehicles, or AVs, are vehicles that can operate at least one driving task independently from a driver using sensors. Although some vehicles on the road today have autonomous features, fully autonomous vehicles that can operate independently of a driver are not yet a reality.

When fully implemented, AVs have the potential to completely revolutionize transportation and are predicted to have both positive and negative impacts. On the positive side, many believe AVs will reduce congestion, increase safety, and provide greater accessibility for those who cannot drive, among other benefits. On the negative side, many have raised concerns about job loss (for those who drive for a living), and that people will travel more miles if they are not actually driving. There are also ethical concerns such as how algorithms make moral judgments when faced with multiple unfavorable outcomes; and, who is at fault if an AV makes a mistake?

Delivery Robots

Drawing on the same technology as autonomous vehicles, some cities are allowing companies to pilot autonomous delivery robots for ground delivery. Delivery robots have been piloted in cities such as Pittsburg, Pennsylvania and San Jose, California. Although they help decrease street traffic, they take up pedestrian space on sidewalks, and, like AVs pose a threat to human employment.

Urban Air Mobility

The market for autonomous aircraft has grown substantially in the last few years. Dozens of



Electric Vertical Take-Off and Landing (eVTOL) Aircraft
Battery-powered eVTOL aircraft, like this one by Joby Aviation, could operate like a taxi one day. Photo: Joby Aviation

companies are spending billions of dollars to make electric vehicle take-off and landing (eVTOL) aircraft that will operate like air taxis — taking off and landing from what are called “vertiports” on the tops of buildings, parking garages, or helipads in congested cities.

Multiple cities around the world are already piloting such technologies. A “vertiport” is planned in the U.K. and Paris will have flying taxi service during the 2024 Olympics. At the Detroit Auto Show this year, there were so many eVTOL aircraft on display they nearly outnumbered land-bound cars. While Greater Portland is probably not big enough to support eVTOL flight within the region, autonomous flight from Portland to other cities such as Portsmouth, Boston, Bangor, or Burlington could someday become a possibility.

Other Innovations

Transportation technology is always evolving. Other innovations (that also avoid the roadways) include urban gondolas, high-speed magnetic trains, underground hyperloops, and flying delivery drones. Under the right circumstances, these too could someday find their way to our region.

An Influx of Federal Funding

THE COMPLETION OF THIS PLAN is well-timed to take advantage of an unprecedented amount of federal funding across a wide variety of new grants and programs. Two major new funding programs are the Infrastructure Investment and Jobs Act and the Inflation Reduction Act.

Infrastructure Investment and Jobs Act

In 2021, Congress passed the \$1.2 trillion Infrastructure Investment and Jobs Act (IIJA). What is often described as a once-in-a-generation opportunity, it is the largest long-term investment in our nation's infrastructure and economy in nearly a century. Of the available funds, a considerable portion will be apportioned to states via formula. The remaining funds will be provided through discretionary grant programs (competitive grants). According to the U.S. Department of Transportation, in the next five years Maine can expect the following in formula funding alone:

- \$1.5 billion for highway and bridge funding,
- \$13 million for highway safety programs,
- \$251 million to improve public transit options across the state,
- \$19 million to support the expansion of an electric vehicle charging network, and
- \$74 million for airport improvements.

The Inflation Reduction Act

Signed into law in 2022, the Inflation Reduction Act is meant to fight climate change, tax corporations more fairly, lower the cost of prescription drugs, and reduce the national deficit. The bill sets a carbon emission reduction goal of 40% by 2030 and will invest an estimated \$369 billion in energy security and climate change. Climate-oriented transportation and infrastructure projects may receive substantial funding to meet this goal.

Improving public transit and ensuring that communities have access to transportation is a priority of the act. The Neighborhood Access and Equity Grants will help reconnect communities divided by existing infrastructure and support equitable transportation planning. The Clean Energy and Sustainability Accelerator will support the expansion of electric vehicles. The act will also help to address emissions from goods movement facilities, ports, and aviation by assisting in the push toward clean energy.

Lastly, the Inflation Reduction Act will invest an estimated \$60 billion in environmental justice efforts, advancing the federal Justice40 Initiative (discussed earlier), which pledges to deliver 40% of the benefits of climate and clean energy investments to disadvantaged communities. As communities made up of predominantly poor members and people of color often face disproportionate effects of pollution and climate change, the act's Climate and Environmental Justice Block Grants will go to support community-led projects in those communities to address those issues.

Next Steps

These funding opportunities come at a pivotal time for our transportation system, which is poised to transition to a greener, more equitable system for all users — especially those who have been harmed in the past by transportation projects and policies. With *Connect 2045's* bold vision and goals, the region is well-positioned to take advantage of these new funds which aim to invest in our ailing infrastructure in ways that benefit all. More information about these (and other) funding opportunities is provided in the "Funding the Plan" chapter.



The completion of Connect 2045 is well-timed to take advantage of an unprecedented amount of federal funding across a wide variety of new grants and programs.

An intersection redesign project currently underway in Biddeford at the intersection of Main Street and Water Street. Photo: Tom Bell

03

Connect 2045

WHERE DO WE WANT TO GO?

PART 1: OUR DESIRED FUTURE

PART 2: OUR PRIORITY GROWTH AREAS



AFTER CONSIDERING where we are at now, the next step is to develop a vision for where we want to go. To ask questions like: “Where do we want to be in 20 years?” And, “What is our desired future?” Crafting a shared vision for a region of nearly 300,000 people is no easy task. During this phase, the *Connect 2045* team conducted an extensive public engagement campaign in an effort to meet with as many people and stakeholder groups as possible. The team also met with municipal representatives to learn more about each community’s priorities and preferred locations for future growth and development.

This chapter is split into two sections. Part 1 presents the region’s shared vision for the future and accompanying six major goals. The vision and goals are the backbone of the plan and a distillation of the key themes we heard from the public. Part 2 discusses how the region can grow to meet our transportation goals. It lays out a revised map of priority centers and corridors (first introduced in the last long-range transportation plan *Destination 2040*) as places where PACTS can target its limited resources to have the most beneficial impact.

PART 1:

OUR DESIRED FUTURE

Background

TO DEVELOP A VISION that best represents the values and desires of the many people who make up our region we conducted an extensive two-part public engagement campaign in the fall of 2021.

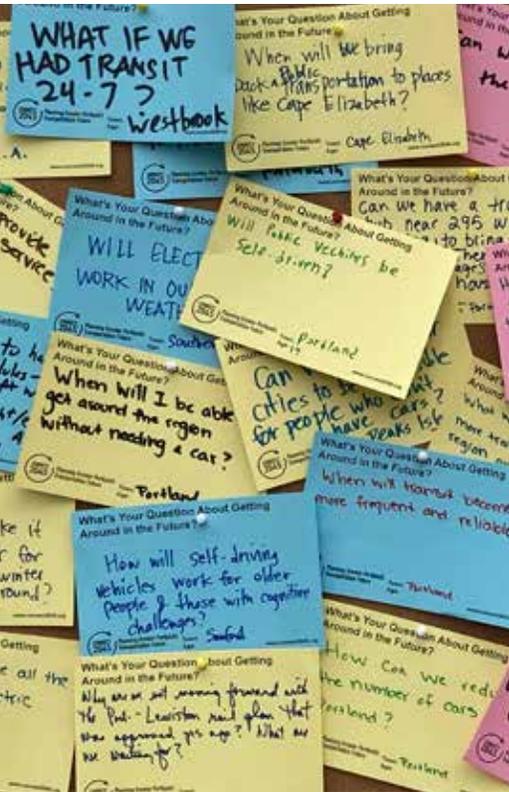
Public Engagement

First, we launched a “Question Campaign.” People who live, work, or visit the region were asked: “What’s your question about getting around Greater Portland in the future?” Listening to people’s questions helped us understand the breadth of relevant issues, personal experiences, and core values in our region. After collecting more than 500 questions, both in person and virtually, they were analyzed and sorted into six major themes.

In lieu of an in-person workshop, a virtual “Visioning Lab” was then created to collect people’s specific ideas for how we can do better within each of the six themes. The Visioning Lab resembled a cork board where people could add sticky notes with their ideas and “like” or comment on other people’s ideas. Following the Visioning Lab the six themes were then reworded into goals based on the input received.

Committee Review & Adoption

With the Question Campaign and the Visioning Lab complete, we refined the vision and goals during a workshop with the *Connect 2045* Project Advisory Committee. They were then further refined by both the Regional Transportation Advisory Committee and the Policy Board. After this review period, the vision and goals were ultimately adopted by the Policy Board at their November 2021 meeting. The following pages present *Connect 2045*’s vision and goals along with some representative comments of what we heard.



“What’s your question about getting around Greater Portland in the future?”

During the Question Campaign, people who live, work, or visit the region were asked: “What’s your question about getting around Greater Portland in the future?” After collecting over 500 questions, both in person and virtually, they were analyzed and sorted into six major themes.

Photo: GPCOG

▶ OUR VISION

All people have access to transportation choices that are safe, reliable, and environmentally responsible. The transportation system optimizes infrastructure, reduces harm to the environment, and supports great places and a thriving economy.

▶ OUR GOALS



**Provide
Equitable Access**



**Expand
Choices**



**Support
Great Places**



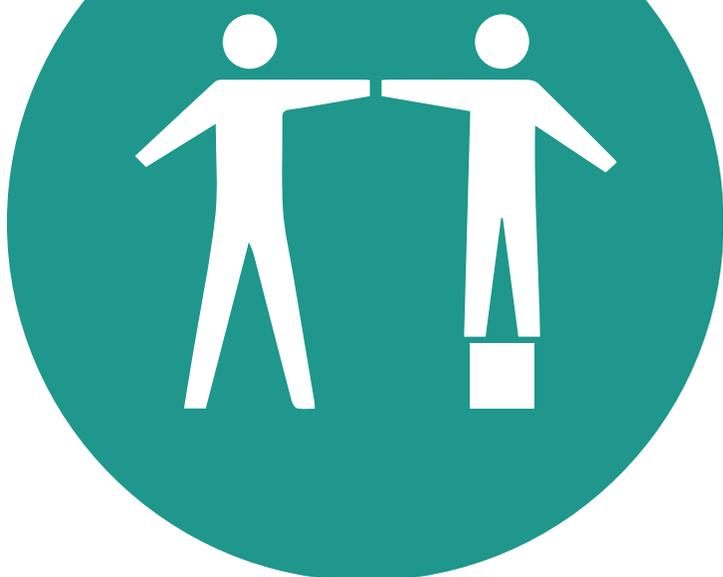
**Protect the
Environment**



**Improve
Safety**



**Optimize
Infrastructure**

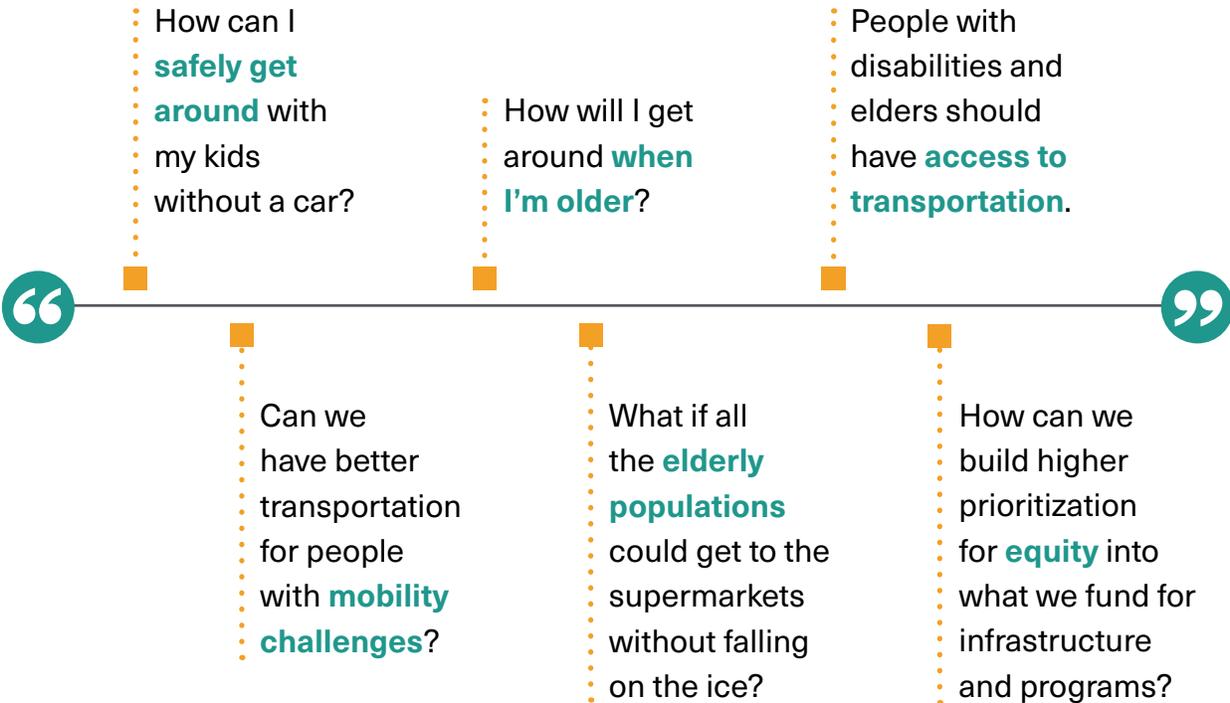


Provide Equitable Access

What We Want

Our mainland and island transportation system allows all people to reach the places they want to go with dignity and comfort. Regardless of form of travel, purpose, or destination, trips are made affordably, conveniently, and reliably.

What We Heard



Representative comments from the Question Campaign

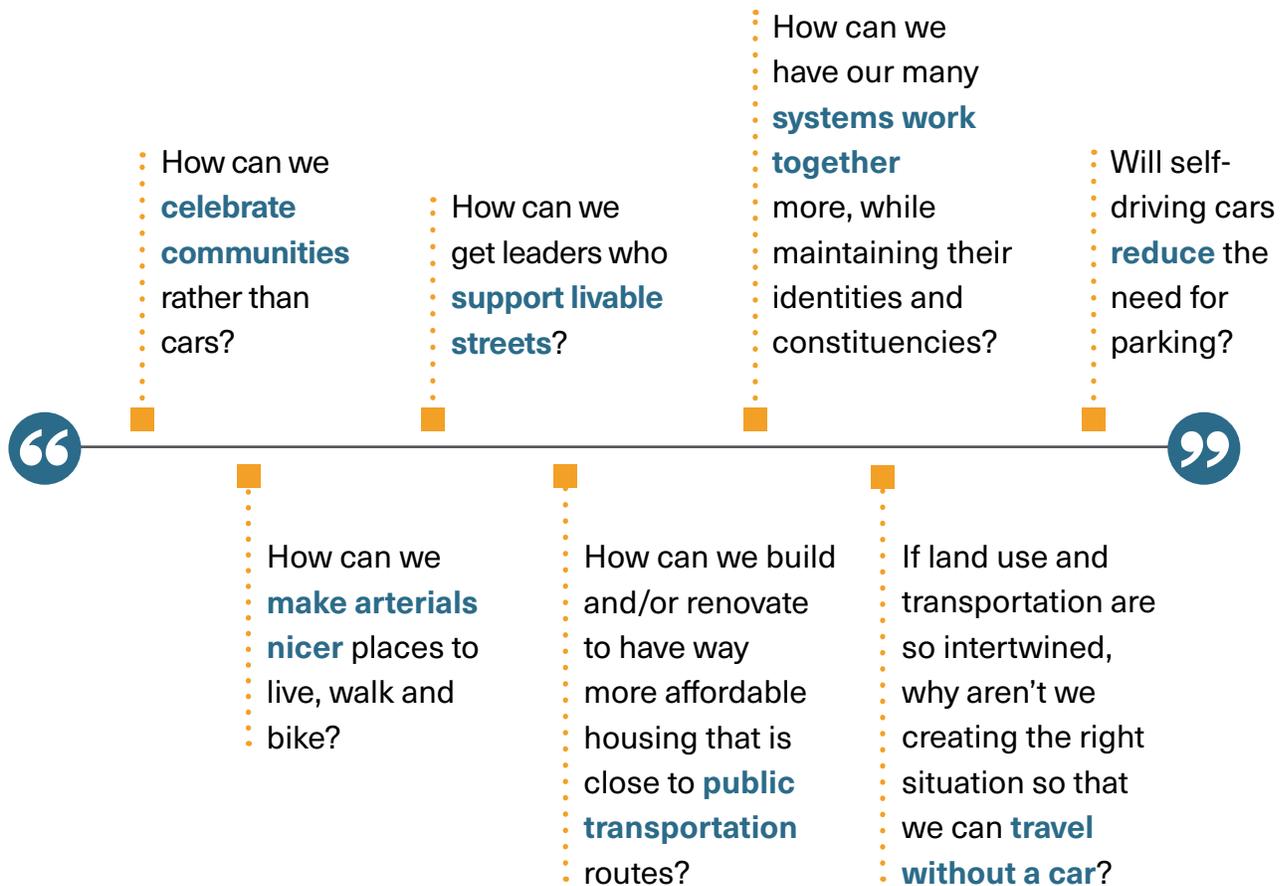
Support Great Places



What We Want

Our transportation system is coordinated with land use to support and connect vibrant and healthy places where people live, work, visit, and play.

What We Heard



Representative comments from the Question Campaign

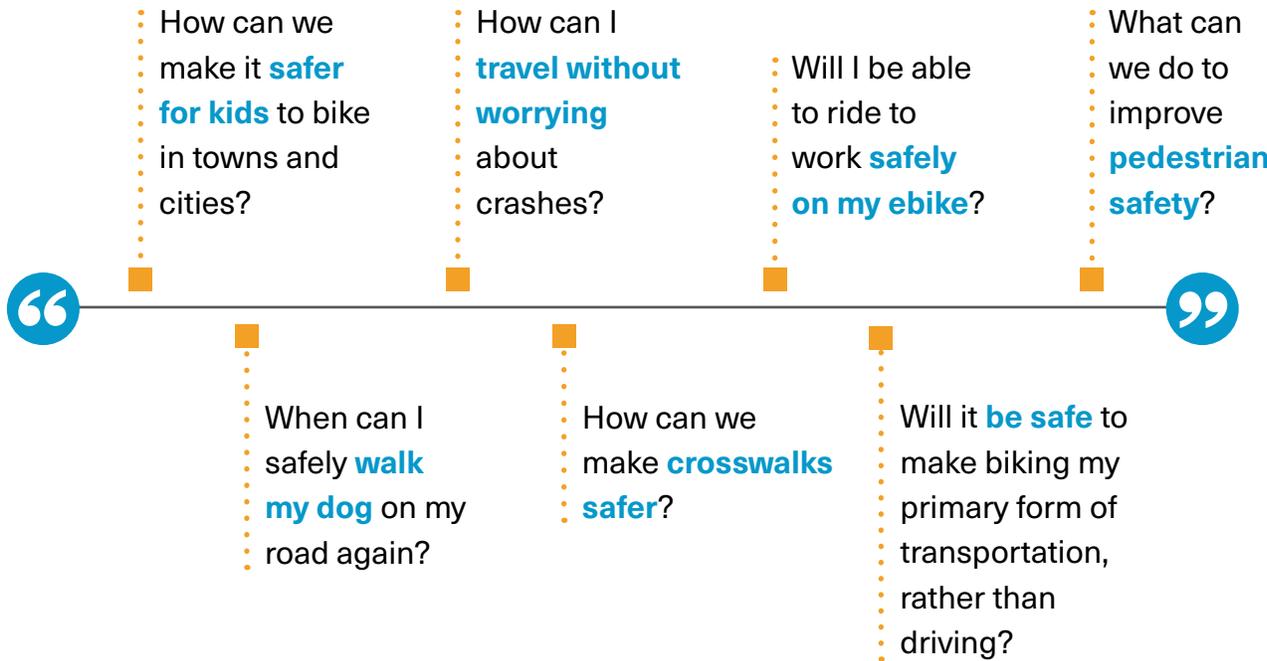


Improve Safety

What We Want

Our transportation system prioritizes real and perceived safety and has eliminated all transportation fatalities and severe injuries.

What We Heard



Representative comments from the Question Campaign

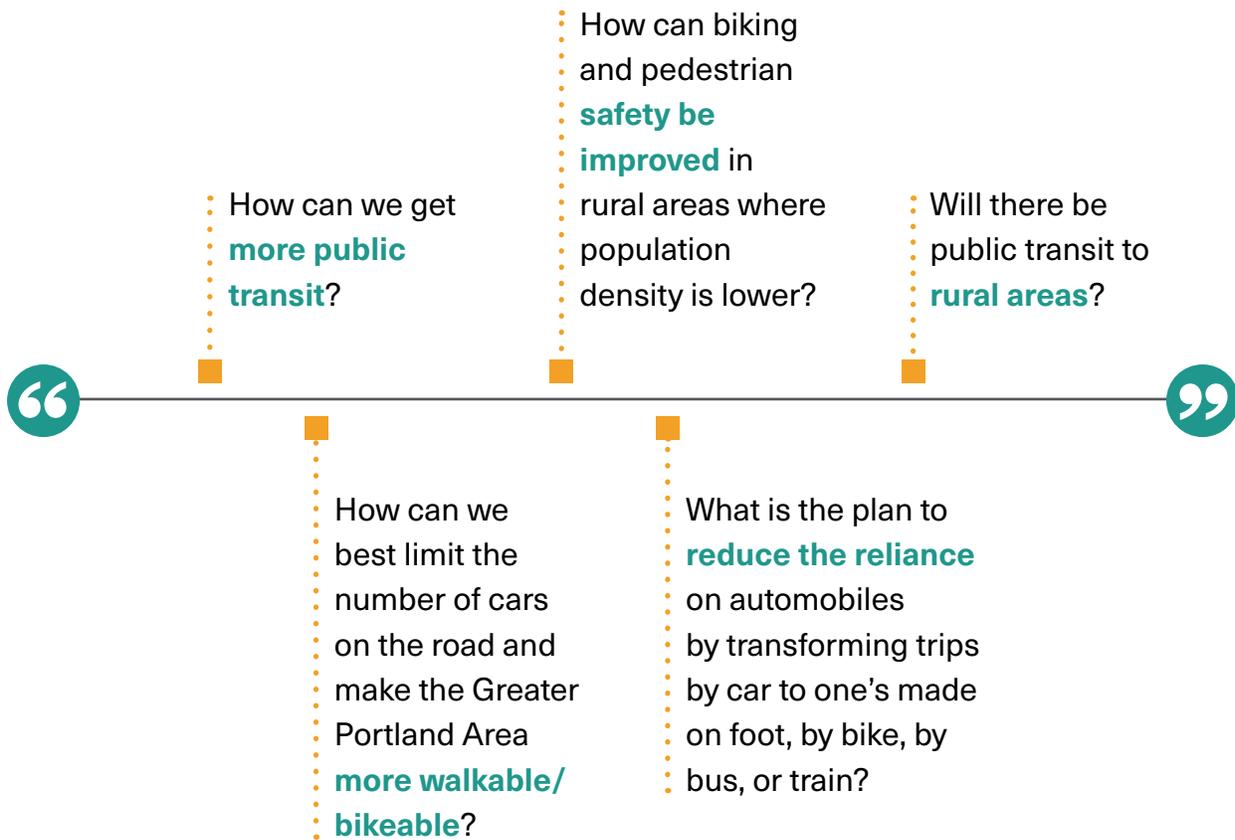
Expand Choices



What We Want

Our transportation system offers a range of convenient options for moving people and freight. An integrated and connected system enables a shift toward more sustainable forms of travel.

What We Heard



Representative comments from the Question Campaign

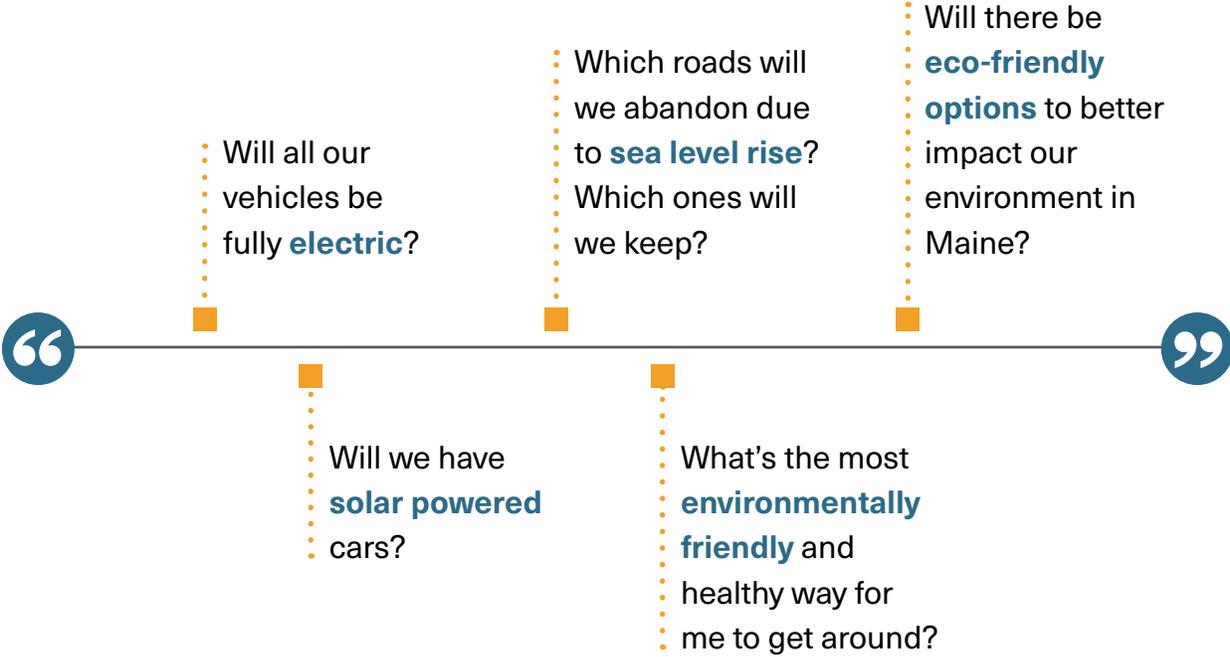


Protect the Environment

What We Want

Our transportation system minimizes its harmful impacts on the natural environment and has sufficiently reduced emissions. Current and future generations enjoy healthy communities and move throughout the region without further damaging habitat or contributing to climate change.

What We Heard



Representative comments from the Question Campaign



Optimize Infrastructure

What We Want

Our transportation system efficiently accommodates a growing region with existing infrastructure. Investments make the most of our financial resources to maintain critical infrastructure and services, while introducing new technologies and innovations to most efficiently and cleanly move people and goods.

What We Heard



PART 2:

OUR PRIORITY GROWTH AREAS

Priority Centers & Corridors

FIRST INTRODUCED in the previous long-range transportation plan, *Destination 2040*, priority centers and corridors are places that have the most promising opportunities to absorb future population and job growth. In the spirit of “supporting great places” (one of *Connect 2045*’s six major goals), these are places that are, or have the potential to be vibrant, walkable neighborhoods. These are our villages, our downtowns, our major urban centers, and the corridors that connect them.

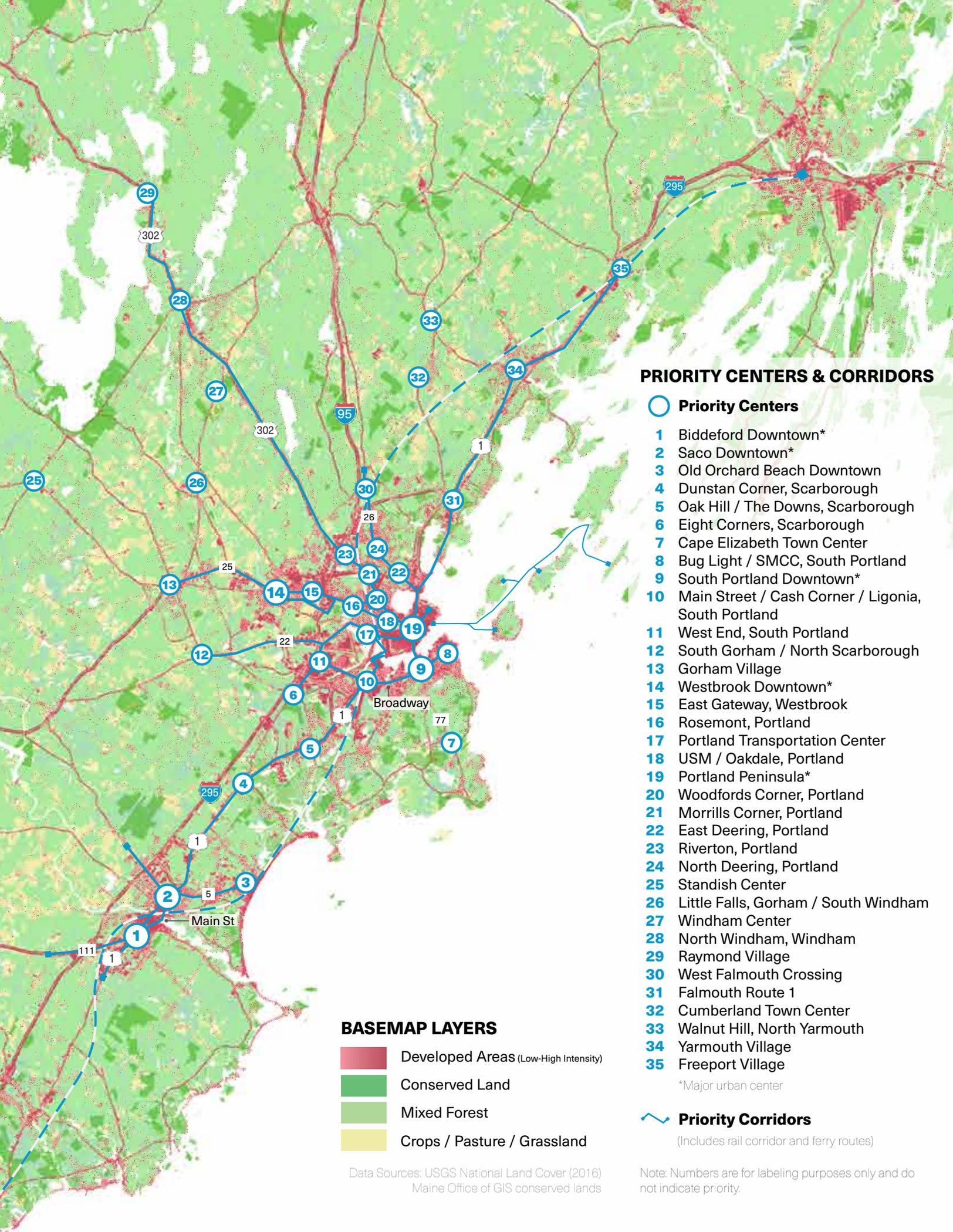
PACTS uses priority centers and corridors as a way to prioritize our limited funding to areas that best advance the region’s goals. These are priority places for technical assistance on zoning, policy, and design. From a funding standpoint, projects that are in, or near, a priority center or corridor receive extra points in scoring.

Refinements

The *Connect 2045* team met with municipal representatives to learn more about each community’s priorities and preferred areas for growth and development. These conversations, along with the most up-to-date population, employment, and traffic volume data, formed the basis for any changes. For the most part, the *Connect 2045* priority centers and corridors are similar to those first presented in *Destination 2040*. However, several refinements have been made.

- **Data driven approach:** Since priority center and corridor designations have funding implications, we used the most up-to-date population, employment, and traffic volume data to inform the total number of centers and corridors within each community. In short, communities that are the same size should have a similar number of centers and corridors.
- **An eye towards consolidation:** In several cases, centers that were close together were consolidated into one center. For example, the Portland Peninsula previously had three centers (East End, Munjoy Hill, and West End). These were consolidated into one, larger center.
- **Conceptual locations:** The priority centers intentionally do not have specific locations or boundaries. For funding purposes, ultimately it will be the applicant’s responsibility to explain how a project is within the general influence area of a particular center or corridor.
- **“Major urban centers:”** A few places with exceptionally high population and job densities are designated as “major urban centers.” While the boundaries for all centers are conceptual, these places have a larger area of influence.

The map on the next page shows the *Connect 2045* priority center and corridor “designations.”



PRIORITY CENTERS & CORRIDORS

○ Priority Centers

- 1 Biddeford Downtown*
- 2 Saco Downtown*
- 3 Old Orchard Beach Downtown
- 4 Dunstan Corner, Scarborough
- 5 Oak Hill / The Downs, Scarborough
- 6 Eight Corners, Scarborough
- 7 Cape Elizabeth Town Center
- 8 Bug Light / SMCC, South Portland
- 9 South Portland Downtown*
- 10 Main Street / Cash Corner / Ligonias, South Portland
- 11 West End, South Portland
- 12 South Gorham / North Scarborough
- 13 Gorham Village
- 14 Westbrook Downtown*
- 15 East Gateway, Westbrook
- 16 Rosemont, Portland
- 17 Portland Transportation Center
- 18 USM / Oakdale, Portland
- 19 Portland Peninsula*
- 20 Woodfords Corner, Portland
- 21 Morrills Corner, Portland
- 22 East Deering, Portland
- 23 Riverton, Portland
- 24 North Deering, Portland
- 25 Standish Center
- 26 Little Falls, Gorham / South Windham
- 27 Windham Center
- 28 North Windham, Windham
- 29 Raymond Village
- 30 West Falmouth Crossing
- 31 Falmouth Route 1
- 32 Cumberland Town Center
- 33 Walnut Hill, North Yarmouth
- 34 Yarmouth Village
- 35 Freeport Village

*Major urban center

Priority Corridors

(Includes rail corridor and ferry routes)

BASEMAP LAYERS

- Developed Areas (Low-High Intensity)
- Conserved Land
- Mixed Forest
- Crops / Pasture / Grassland

Data Sources: USGS National Land Cover (2016)
Maine Office of GIS conserved lands

Note: Numbers are for labeling purposes only and do not indicate priority.

04

Connect 2045

HOW DO WE GET THERE?

PART 1: OUR NEXT STEPS

PART 2: EVALUATING PROGRESS



NOW THAT we have a vision for where we want to be in 20 years, the final step is to figure out how to get there. To ask questions like, “What can we do in the next five years to make progress towards our vision?” And, “What actions can we take to improve in each of our goal areas?” While the vision and goals provide a bird’s eye perspective of our desired future, this chapter takes us back down to ground level and focuses on the here and now. Put simply, it is a “to do” list. When *Connect 2045* is updated five years from now, our progress will be measured by how well we accomplished these tasks.



PART 1:

OUR NEXT STEPS

Background

To develop *Connect 2045's* next steps, staff met individually with municipalities, transit agencies, and key stakeholders representing a wide array of interests. These informal meetings were a way to discuss our transportation system's strengths and weaknesses with those most directly acquainted with it, as well as brainstorm ideas for how to achieve *Connect 2045's* vision and goals. Following these meetings, the *Connect 2045* team developed draft objectives and actions for each goal. The objectives define focus areas within each goal, while the actions are steps we can take to achieve the objectives.

The draft objectives and actions were reviewed and refined by the *Connect 2045* Project Advisory Committee and the Regional Transportation and Advisory Committee. They were then presented at a public workshop in May 2022 and revised based on feedback from that meeting. Lastly, they were informed by the results of a public survey, launched in the summer of 2022, that received over 1,000 responses. The collective input from all the above-mentioned initiatives formed the basis for the objectives and actions that follow.

Over the next two years, PACTS will track progress towards these goals, objectives, and actions using an implementation tracking template (see [Appendix F](#)). In 2024-2025, PACTS will revisit — and likely revise — the goals, objectives, and actions as part of our next long-range transportation plan update.

GOAL



Provide Equitable Access

Our mainland and island transportation system allows all people to reach the places they want to go with dignity and comfort. Regardless of form of travel, purpose, or destination, trips are made affordably, conveniently, and reliably.

OBJECTIVES

Invest more equitably

1 Prioritize underserved communities

Prioritize traditionally underserved communities in planning and investments. (These communities are identified in the PACTS Civil Rights Plan).

2 Cultivate leaders

Continue to organize the Community Transportation Leaders program and designate membership in PACTS committees to members of vulnerable community groups.

3 Evaluate impacts

Conduct social impact assessments of PACTS plans, policies, and investments.

Remove barriers

4 Expand universal design

Support implementation of Americans with Disabilities Act (ADA) and All Ages and Abilities (AAA) infrastructure and operations.

5 Equitably maintain the network

Provide better routine and seasonal maintenance (snow clearing, street sweeping, re-striping, spot improvements) to the active transportation network so that sidewalks, curb ramps, transit stops, crosswalks, and bike facilities are visible and accessible year-round.

6 Explore equitable transit pricing

Explore the feasibility of subsidies to offer discounted or free passes for certain public transportation routes and services.

Plan for everyone

7 Engage meaningfully

Develop thoughtful and effective public involvement strategies for more people to easily and conveniently contribute diverse perspectives to transportation plans, projects, and policies.



GOAL

Support Great Places

Our transportation system is coordinated with land use to support and connect vibrant and healthy places where people live, work, visit, and play.

OBJECTIVES

Foster compact development

1 Create complete communities

Target planning and transportation investments to the region's priority centers and corridors to support walkable, bike-able, transit-oriented places and safe connections in between.

2 Support housing choice

Conduct a regionwide housing study and support cities and towns to implement the recommendations.

3 Manage development projects for success

Provide integrated place-based planning to help emerging large developments be the best they can be with a focus on managing traffic, parking, and emissions, and enhancing transportation choice, resilience, and broadband.

4 Encourage parking reform

Encourage and create resources for more equitable, efficient, and sustainable management of parking supply.

Design streets for everyone

5 Make streets complete

Implement a regional Complete Streets policy and provide additional resources and guidance for new projects to accommodate all users of all ages and abilities.

6 Fund demonstration projects

Encourage experimentation and innovation by investing in low-cost demonstration projects prior to design and engineering.

7 Create attractive public spaces

Support the creation of safe, welcoming, and accommodating public spaces, such as car-free streets, parks, plazas, and other placemaking amenities.



GOAL

Improve Safety

Our transportation system prioritizes real and perceived safety and has eliminated all transportation fatalities and severe injuries.

OBJECTIVES

Set ambitious targets

1 Move towards zero

PACTS is currently pursuing the adoption of a Vision Zero policy (a strategy to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, equitable mobility for all).

Understand the problem

2 Monitor/analyze the data

Routinely monitor and analyze safety and security data by mode, severity, location, and other factors to identify causes, trends, and priorities, as well as to track progress.

3 Traffic incident management

Continue convening the traffic incident management group as a forum for information sharing and emergency response and preparedness.

Calm traffic

4 Improve roadway and intersection design

Redesign roadways and intersections to calm traffic and provide safe access for all users. Improvements such as road diets, narrowing lane widths, crossing islands, raised crossings, reducing curb radii, roundabouts, speed limit reductions, contiguous sidewalks, leading pedestrian intervals at intersections, and other Complete Streets treatments can improve safety for all users, especially vulnerable users such as pedestrians and cyclists.

5 Bring awareness to the issue

Support education and enforcement programs that promote the safety of all road users.

GOAL

Expand Choices



Our transportation system offers a range of convenient options for moving people and freight. An integrated and connected system enables a shift toward more sustainable forms of travel.

OBJECTIVES

More and better public transit

1 Make transit easier

Continue to implement the "Make Transit Easier" recommendations of *Transit Tomorrow* — to improve the transit experience with innovative customer service technology, better first/last mile connections, and enhanced door-to-door options.

2 Create frequent connections

Improve transit frequency system-wide and implement the recommendations of Transit Together to create a more seamless, integrated, and efficient public transit system.

3 Invest in rapid transit

Upon the selection of a preferred alternative, secure funding and begin preliminary design and NEPA on the Gorham-Westbrook-Portland rapid transit corridor. Begin planning phases of additional corridors identified in *Transit Tomorrow*.

Connect the bicycle and pedestrian network

4 Connect gaps in local walking and biking networks

Construct appropriate on and off-street active transportation facilities (sidewalks, trails, bike lanes, bike parking) and pursue public access agreements to fill bicycle and pedestrian network gaps.

5 Support regional multi-use paths

Encourage the development of multi-use paths for mobility, recreation, and tourism and support rail-to-trail or rail-with-trail opportunities pending the recommendations of the Rail Use Advisory Councils.

Increase freight efficiency

6 Identify freight opportunities

Work collaboratively with MaineDOT, MTA and the Port Authority to identify areas of opportunities to exchange information on projects that will positively impact the movement of freight in the region.



GOAL

Protect the Environment

Our transportation system minimizes its harmful impacts on the natural environment and has sufficiently reduced emissions. Current and future generations enjoy healthy communities and move throughout the region without further damaging habitat or contributing to climate change.

OBJECTIVES

Reduce emissions

1 Reduce car-dependence

Reduce the amount of driving in the region through Transportation Demand Management (TDM) strategies with particular emphasis on high-impact strategies like large employer commuter incentives and remote work infrastructure.

2 Accelerate transition to electric vehicles

Accelerate the transition to electric, hybrid, and alternative-fuel vehicles including cars, public transportation, school buses, ferries, and trucks.

Minimize pollution

3 Minimize stormwater runoff

Incorporate natural elements and low impact development techniques into PACTS projects to protect water quality.

Build resilience

4 Evaluate vulnerability

Assess the region's vulnerability to identify infrastructure, populations, and habitat most susceptible to the impacts of climate related events such as extreme weather, higher temperatures, storm surge and sea level rise.

5 Coordinate key stakeholders

Strengthen the role of local conservation and environmental stakeholders in PACTS decision-making.

Protect habitat

6 Minimize habitat fragmentation and degradation

Minimize habitat fragmentation by incorporating best management practices such as natural buffers, stream smart crossings, and wildlife underpasses/overpasses into PACTS projects.



GOAL

Optimize Infrastructure

Our transportation system efficiently accommodates a growing region with existing infrastructure. Investments make the most of our financial resources to maintain critical infrastructure and services, while introducing new technologies and innovations to most efficiently and cleanly move people and goods.

OBJECTIVES

Expedite projects

1 Shorten project delivery

Complete all preliminary design reports — a key step in the project delivery process — within two years of signing three-party agreements. Proactively discuss pending projects with project sponsors and MaineDOT.

Maintain the assets

2 Fix-it-First

Adopt a fix-it-first approach that incorporates Complete Streets and prioritizes upgrading roads over expanding them.

Use assets efficiently

3 Move freight efficiently

Support rail and port infrastructure capacity improvements to enable a shift toward greater use of freight rail. Encourage transition to smaller and zero-emissions vehicles for local pick-ups and deliveries.

4 Reduce congestion

Implement the recommendations of the forthcoming congestion management plan.

Innovate the system

5 Enhance data collection/sharing

Provide continuous and strategic data collection and sharing for all modes to inform more effective investment prioritization.

6 Invest in intelligent transportation systems

Expand deployment of intelligent transportation systems, such as coordinated and/or adaptive signals and signals with transit priority, throughout the region.



Optimizing Infrastructure

The Deering Avenue roundabout is a PACTS-funded example of optimizing infrastructure. What used to be a five-way intersection is now a free-flowing area that no longer requires maintenance of traffic signals and includes space for drivers, cyclists, and pedestrians alike (as well as public art). Research has shown that roundabouts are safer than other intersections, resulting in a 90% reduction in fatalities, 76% reduction in injuries, and 35% reduction in all crashes (Federal Highway Administration).

From top left to lower right: a METRO bus makes its way around the roundabout. The roundabout can easily accommodate large vehicles such as transit buses and trucks and has reduced travel times on METRO's Route 4 and Husky Line routes. Photo: GPCOG

PART 2:

EVALUATING PROGRESS

Background

CONNECT 2045 ESTABLISHES a series of performance measures to help track progress towards our vision and goals. The performance measures are based on:

- Availability of regularly updated and reliable data sources,
- Use of measurable, quantitative information, and
- Compatibility with federal requirements and MaineDOT measures and targets.

For each performance measure, *Connect 2045* includes a baseline of the current state for that measure, a 2045 target, and a desired trend arrow (up or down) for a quick understanding of the direction the region needs to move in.

PACTS will revisit the full suite of performance measures as part of our next long-range transportation plan update (currently scheduled for 2024-2025). In the meantime, some of the measures are tracked more frequently through other initiatives. For example, the Transportation Improvement Program (our four-year funding program that is updated annually), includes performance measures for roadway and transit safety. Similarly, the transit agencies track ridership and vehicle revenue hours daily which is then packaged into annual reports by the National Transit Database. Other measures, like transportation greenhouse gas emissions, are more time intensive to track and lack the precision that would warrant annual updates. Where applicable, PACTS will update its implementation tracking template (see [Appendix F](#)) to report progress towards these performance measures.

Our approach to performance measurement is dynamic. Future updates to the plan may include additional (or revised) measures as new information becomes available or state, federal, or other requirements and targets change. PACTS will continue to coordinate with MaineDOT, regional transit agencies, and other relevant stakeholders to integrate their performance measures into our planning process. We will also continue to direct our investments to plans and projects that have the potential to support the performance measures included here.

PERFORMANCE MEASURE	BASELINE	2045 TARGET	DESIRED TREND
Transit ridership (NTD Profiles)	3,524,222 annual unlinked trips	7,048,444 annual unlinked trips	↑
Transit ridership per capita (NTD Profiles)	11.9 rides per capita	23.7 rides per capita	↑
Transit service provided (NTD Profiles)	320,807 annual vehicle revenue hours	641,614 annual vehicle revenue hours	↑
Transit service provided per capita (NTD Profiles)	1.08 vehicle revenue hours per capita	2.16 vehicle revenue hours per capita	↑
Percent of PACTS investments in/near equitable target areas (PACTS Equity Data Portal)	N/A	40%	↑
Percent of PACTS investments in priority centers/corridors	N/A	80%	↑
Percent of commuters who drive alone to work (US Census)	77% drive alone	50% drive alone	↓
Vehicle Miles Traveled (VMT) per capita (2019 VMT from Streetlight Data)	11,013 annual VMT per capita	5,507 annual VMT per capita	↓
Transportation greenhouse gas emissions (SMPDC GHG Emissions Calculator)	1.58 MMTCO _{2e}	0.465 MMTCO _{2e}	↓
Percentage of electric light-duty vehicles (MaineDEP and Bureau of Motor Vehicles)	12%	60%	↑
Percentage of electric transit and municipal fleet	N/A	100%	↑
Number of fatalities (2022-2025 PACTS TIP)	16/year	0/year	↓
Rate of fatalities per 100 million VMT (2022-2025 PACTS MPO TIP)	0.53	0	↓
Number of serious injuries (2022-2025 PACTS MPO TIP)	120	0	↓
Rate of serious injuries per 100 million VMT (2022-2025 PACTS MPO TIP)	3.96	0	↓
Percent of Preliminary Design Review's completed within two years of signing three-party agreements	N/A	100%	↑

05

Connect 2045

FUNDING THE PLAN

ANTICIPATED FUNDING & PRIORITY PROJECTS



WE HAVE LIMITED RESOURCES. The projects we choose to fund reflect the region's priorities and values. The next section details how we will align our future spending with the shared vision and goals of Connect 2045. With insufficient funding, it is a challenge to maintain what we have, let alone build for the future. We must make the most of every dollar to balance investments that take care of today's needs with those that move us in the direction we want to go. The fiscally constrained financial plan attempts this balance.

The region will also pursue additional funding to supplement available resources. New funding can be used for aspirational projects, separately listed in this chapter. These projects, if funded, will help us more quickly realize the region's vision while better positioning the region for federal discretionary grants and state funds.



Woodfords Corner in Portland, a recent PACTS-sponsored intersection redesign project. Note the neighborhood-led demonstration crosswalk project upper left. Photo: GPCOG

Background

THE *CONNECT 2045* FINANCIAL PLAN is how the region intends to deliver capital projects that align with the regional transportation vision and goals, while adequately operating and maintaining the existing transportation system. The financial plan must show how this can be accomplished using committed, available, or reasonably available revenue sources; in other words, it must be “fiscally constrained.”

The financial plan is a requirement for all long-range transportation plans. The short-term list of projects — the four-year Transportation Improvement Program — must also be fiscally constrained. In the PACTS urbanized area, all projects receiving federal funding must be selected from the Transportation Improvement Program. In most cases, the projects must be selected by the Policy Board in consultation with the State and any affected public transportation provider(s) (23 USC 134-135). Consultation is not required in two cases: projects on the national highway system which are selected by the state in cooperation with PACTS, and projects funded through Tribal Transportation, Federal Lands Transportation, and Federal Lands Access programs (23 U.S.C. 201, 202, 203, and 204).

The following pages highlight federal funding available from the Federal Highway Administration and the Federal Transit Administration. The first section details formula funding. These funds are typically stable annual allocations for PACTS-administered projects determined by federal formulas. The next section details other funding the region can pursue. This funding is “discretionary.” In other words, it is not guaranteed.

The Project Funding Journey

“Projects begin the journey toward funding eligibility when the metropolitan planning organization [PACTS] includes them in the long-range transportation plan [*Connect 2045*] that creates the 20-25 year framework of policies, goals and recommended investments. They move a step closer when included in the Transportation Improvement Program, which lists projects to be funded in the upcoming four or five years. Metropolitan planning organizations lead the process for shaping and approving both documents. The challenge is to make sure these are not just ‘stapling exercises’ — merely compiling local and state wish lists with little attempt to shape the complete package to make the most efficient and beneficial use of resources for the region as a whole.”

~ *The Innovative MPO, Transportation for America*

Federal Highway Administration Formula Funding

The following programs are provided by the Federal Highway Administration and made available through standard annual allocations. These funds can be used for roads, public transportation, and active transportation such as bike lanes and sidewalks.

PROGRAM	DETAILS
National Highway Performance Program (NHPP)	Provides support for the condition and performance of the National Highway System (NHS), for the construction of new facilities on the NHS, and to ensure that investments of Federal-aid funds in highway construction are directed to support progress toward the achievement of performance targets established in a State's asset management plan for the NHS. (23 USC 119)
Surface Transportation Block Grant Program (STBG)	Provides flexible funding that may be used by States and local agencies for projects to preserve and improve the conditions and performance on any Federal-aid highway, bridge and tunnel projects on any public road, pedestrian and bicycle infrastructure, and transit capital projects, including intercity bus terminals. (23 USC 133)
Highway Safety Improvement Program (HSIP)	Seeks to help achieve a significant reduction in traffic fatalities and serious injuries on all public roads (not just highways), including non-State-owned public roads and roads on tribal lands. The HSIP requires a data-driven, strategic approach to improving highway safety on all public roads that focuses on performance. (23 USC 130 and 148)
Congestion Mitigation Air Quality Program (CMAQ)	Provides a flexible funding source to states and MPOs for transportation projects and programs to help meet the requirements of the Clean Air Act. Funding is available to reduce congestion and improve air quality for areas that do not meet the National Ambient Air Quality Standards for ozone, carbon monoxide, or particulate matter (nonattainment areas) and for former nonattainment areas that are now in compliance (maintenance areas). (23 USC 149)
Transportation Alternatives Program (TAP)	Provides for a variety of alternative transportation projects, including many that were previously eligible activities under separately funded programs. The TAP replaces the funding from pre-MAP-21 programs including Transportation Enhancements, Recreational Trails, and Safe Routes to School, wrapping them into a single funding source. (23 USC 101, 206, 213)
Carbon Reduction Program	Provides funds for projects designed to reduce transportation emissions, defined as carbon dioxide (CO ₂) emissions from on-road highway sources. This program is new under the Infrastructure Investment and Jobs Act.

Federal Transit Administration Formula Funding

The following programs are provided by the Federal Transit Administration and made available through standard annual allocations. These funds are exclusively to support public transportation.

PROGRAM	DETAILS
Urbanized Area Formula (5307)	Provides grants to urbanized areas for public transportation capital, planning, and operating assistance. The program serves as the core investment in the operations, maintenance, enhancement and revitalization of transit systems in the nation's urbanized areas which depend on public transportation to improve mobility and manage congestion.
Enhanced Mobility of Seniors and the Disabled Program (5310)	Provides funding for the purpose of assisting transit agencies and private nonprofit groups in meeting the transportation needs of older adults and people with disabilities when the transportation service provided is unavailable, insufficient, or inappropriate to meeting these needs. The program aims to improve mobility for seniors and individuals with disabilities by removing barriers to transportation service and expanding transportation mobility options. Eligible projects include both "traditional" capital investment and "nontraditional" investment beyond the Americans with Disabilities Act (ADA) complementary paratransit services.
State of Good Repair Program (5337)	Provides capital assistance for maintenance, replacement, and rehabilitation projects of high-intensity fixed guideway and bus systems to help maintain assets in a state of good repair. Additionally, grants are eligible for developing and implementing Transit Asset Management plans.
Grants for Buses and Bus Facilities Program (5339)	Provides capital funding to replace, rehabilitate and purchase buses and related equipment and to construct bus-related facilities including technological changes or innovations to modify low or no emission vehicles or facilities. A sub-program, the Low- or No-Emission Vehicle Program (highlighted later), provides competitive grants for bus and bus facility projects that support low and zero emission vehicles.

Additional Funding Sources

Our region cannot entirely depend on annual allocations of Federal formula funds to maintain and improve our transportation system. Competitive grants are critical to ensuring we achieve the *Connect 2045* vision and goals. It is also important to develop non-federal funding streams including public-private partnerships, local option sales taxes (if permitted), payroll taxes, transit related tax increment financing (TIF) districts, parking and impact fees, and other sources of local revenue. These funding streams can match and build upon federal apportionments. The table below provides examples of competitive grant programs for urbanized areas like Greater Portland (for more information on these and other programs see [Appendix B](#)).

FEDERAL HIGHWAY ADMINISTRATION	FEDERAL TRANSIT ADMINISTRATION
Rebuilding American Infrastructure with Sustainability and Equity (RAISE)	Passenger Ferry Grant Program - Section 5307
Nationally Significant Multimodal Freight and Highway Projects (INFRA)	Electric or Low-Emitting Ferry Pilot Program - IJJA § 71102
National Infrastructure Project Assistance Program (MEGA)	Low or No Emission Vehicle Program - 5339(c)
Safe Streets and Roads for All	Grants for Buses and Bus Facilities Program
Reconnecting Communities Pilot Program — Planning Grants	Consolidated Rail Infrastructure and Safety Improvements (CRISI) Program
Reconnecting Communities Pilot Program — Capital Construction Grants	Railroad Crossing Elimination Grant Program
Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation (PROTECT) Discretionary Grants	Capital Investment Grants - 5309
Bridge Investment Program	Pilot Program for Transit-Oriented Development Planning – Section 20005(b)
Charging and Fueling Infrastructure Grants Program (Community Charging)	Public Transportation Innovation - 5312
Charging and Fueling Infrastructure Grants Program (Corridor Charging)	All Stations Accessibility Program
Nationally Significant Federal Lands and Tribal Projects (NSFLTP) Program	Areas of Persistent Poverty Program
Wildlife Crossings Safety Pilot Program	Community Project Funding/Congressionally Directed Spending
Advanced Transportation Technology and Innovation (ATTAIN) Program	Enhancing Mobility Innovation
Accelerated Innovation Deployment (AID) Demonstration Program	Expedited Project Delivery Pilot Program - Section 3005(b)
Prioritization Process Pilot Program	Innovative Coordinated Access and Mobility Grants
Strategic Innovation for Revenue Collection	Integrated Mobility Innovation
	Mobility, Access & Transportation Insecurity: Creating Links to Opportunity Research and Demonstration Program

Revenue & Expenditures

Federal Highway Administration Revenue Assumptions and Estimates

Connect 2045's Federal Highway Administration revenue assumptions were developed in close consultation with MaineDOT whose guidance was to use historic funding levels as a foundation for anticipated future funding. Formula funds are the predominant source of funding, but state, local, and private sources (often included as “match” to the federal formula funds) also contribute to transportation in our region. MaineDOT also suggested increasing these baseline levels by approximately 29% to account for the recent passage of the Infrastructure Investment and Jobs Act. Acknowledging these assumptions, the adjusted anticipated annual funding levels, shown below, represent the “universe of FHWA funding” (in 2022 dollars) for the PACTS region, regardless of the project sponsor (e.g. MaineDOT or PACTS).

FUNDING SOURCE	ANTICIPATED ANNUAL FUNDING (in 2022 dollars)	ANTICIPATED FUNDING 2026-2045 (in 2022 dollars)
Federal	\$23,190,100	\$463,802,000
State	\$26,553,900	\$531,087,000
Local	\$9,437,700	\$188,754,000
Private	\$1,555,700	\$31,114,000
Anticipated Discretionary	\$1,250,000	\$25,000,000
Total	\$61,987,400	\$1,239,748,000

[1] Funding is based on historic revenues with consideration for additional funding made available through IJA/BIL. Information on specific Federal grant programs and associated funding levels was not available. Amounts may not sum due to rounding.

[2] Discretionary funding assumes \$5.0 million in awards, every four years (or \$1.25 million per year), a reasonable estimate given prior/recent awards.

[3] Anticipated Funding (2026-2045) is intended to reflect the plan's horizon beyond the PACTS 2022-2025 Transportation Improvement Program, the short-term investment plan that includes all federally funded projects (and anticipated funding sources) in the PACTS region over the next four years. The projects for the years 2023, 2024, and 2025 have already been selected by PACTS.

Federal Highway Administration Revenues with Inflation

To account for inflation, *Connect 2045* assumes an annual inflation rate of two percent for roadway/multimodal revenues. As shown in the table below, the \$1.24 billion in anticipated Federal Highway Administration funding shown in the table below becomes \$1.63 billion after inflation.

YEAR	CURRENT YEAR REVENUES	YEAR-OF-EXPENDITURE REVENUES	5-YEAR TOTAL REVENUES
2022			
2023			
2024		Funding already committed*	
2025			
2026	\$61,987,400	\$67,097,155	
2027	\$61,987,400	\$68,439,098	
2028	\$61,987,400	\$69,807,880	\$349,176,291
2029	\$61,987,400	\$71,204,038	
2030	\$61,987,400	\$72,628,119	
2031	\$61,987,400	\$74,080,681	
2032	\$61,987,400	\$75,562,295	
2033	\$61,987,400	\$77,073,541	\$385,518,839
2034	\$61,987,400	\$78,615,011	
2035	\$61,987,400	\$80,187,312	
2036	\$61,987,400	\$81,791,058	
2037	\$61,987,400	\$83,426,879	
2038	\$61,987,400	\$85,095,417	\$425,643,950
2039	\$61,987,400	\$86,797,325	
2040	\$61,987,400	\$88,533,271	
2041	\$61,987,400	\$90,303,937	
2042	\$61,987,400	\$92,110,016	
2043	\$61,987,400	\$93,952,216	\$469,945,314
2044	\$61,987,400	\$95,831,260	
2045	\$61,987,400	\$97,747,885	
Total 2026-2045:	\$1,239,748,000	\$1,630,284,394	

*MaineDOT produces a Three-Year Work Plan describing all work planned by MaineDOT and its partners for three calendar years. In order to include PACTS projects in the Work Plan, MaineDOT provides PACTS with its estimated allocation of federal and state capital improvement funding — and requires that the PACTS Policy Board approve its list of projects for that funding — approximately three years in advance. Therefore, PACTS roadway/multimodal funds have already been committed to projects through 2025. The PACTS Policy Board will approve an allocation of 2026 funds in the summer of 2023.

Federal Transit Administration Funding Assumptions and Estimates

PACTS annually receives funding from the Federal Transit Administration for the programs shown below. *Connect 2045* anticipates \$31.7 million per year and \$729.1 million over the plan's financial planning horizon.

FUNDING SOURCE	ANTICIPATED ANNUAL FUNDING (in 2022 dollars)	ANTICIPATED FUNDING 2023-2045 (in 2022 dollars)
Section 5307, Urbanized Area Formula Grants	\$13,883,170	\$319,312,910
Section 5310, Enhanced Mobility of Seniors & Individuals with Disabilities Formula Grants	\$309,700	\$7,123,100
Section 5337, State of Good Repair Grants	\$13,213,700	\$303,915,100
Section 5339, Buses and Bus Facilities Grants	\$291,800	\$6,711,400
Anticipated Discretionary	\$4,000,000	\$92,000,000
Total	\$31,698,370	\$729,062,500

[1] Figures reflect the passage of IIJA/BIL. Amounts may not sum due to rounding.

[2] For planning purposes, the planning horizon for FTA is 2023-2045. This varies from the FHWA horizon (above) because the selection of transit projects occurs on an annual basis.

[3] Discretionary funding assumes \$4.0 million in awards per year, which is conservative given the region's recent success in winning discretionary grants for vehicle and vessel replacements, which include efforts to electrify fleets.

Connect 2045 assumes that most of the Federal Transit Administration formula funding will be dedicated to preventive maintenance, capital, and operations with some funding (12% of 5307 funding) made available for projects, initiatives, or campaigns that are designed to advance the goals of *Transit Tomorrow*: make transit easier; create frequent connections; improve rapid transit; and create transit-friendly places. (PACTS' goal, however, is to commit 20% of 5307 resources to projects that advance the vision of *Transit Tomorrow*). See the "Fiscally Constrained Plan" section of *Connect 2045* for more information on the anticipated funding levels for transit improvement projects.

Federal Transit Administration Revenues with Inflation

Connect 2045 assumes an inflation rate of 2% for Federal Transit Administration revenues, which are also inflated annually. As shown in the table below, the \$729.1 million in funding anticipated for 2023-2045 becomes \$932.6 million after inflation.

YEAR	CURRENT YEAR REVENUES	YEAR-OF-EXPENDITURE REVENUES	3- OR 5-YEAR TOTAL REVENUES
2023	\$31,698,370	\$32,332,337	
2024	\$31,698,370	\$32,978,984	\$98,949,885
2025	\$31,698,370	\$33,638,564	
2026	\$31,698,370	\$34,311,335	
2027	\$31,698,370	\$34,997,562	
2028	\$31,698,370	\$35,697,513	\$178,557,566
2029	\$31,698,370	\$36,411,463	
2030	\$31,698,370	\$37,139,693	
2031	\$31,698,370	\$37,882,486	
2032	\$31,698,370	\$38,640,136	
2033	\$31,698,370	\$39,412,939	\$197,141,981
2034	\$31,698,370	\$40,201,198	
2035	\$31,698,370	\$41,005,222	
2036	\$31,698,370	\$41,825,326	
2037	\$31,698,370	\$42,661,833	
2038	\$31,698,370	\$43,515,069	\$217,660,676
2039	\$31,698,370	\$44,385,371	
2040	\$31,698,370	\$45,273,078	
2041	\$31,698,370	\$46,178,540	
2042	\$31,698,370	\$47,102,110	\$240,314,974
2043	\$31,698,370	\$48,044,153	
2044	\$31,698,370	\$49,005,036	
2045	\$31,698,370	\$49,985,136	
Total 2023-2045:	\$729,062,510	\$932,625,083	



Mosher Road in Gorham. A recently funded PACTS project. Photo: Tom Bell

Anticipated Expenditures

In addition to estimating revenues, this plan estimates project costs. The fiscally constrained project list balances the estimated revenues with estimated costs.

Connect 2045 generally relied on project sponsors (e.g. municipalities and transit agencies) to develop and submit project costs. In some cases, *Connect 2045* reflects adjusted cost estimates to account for project modifications. For example, several transit projects that were initially submitted by one transit agency were subsequently expanded to

include the needs of other agencies, as well. This regionwide approach was developed in close coordination with the region's transit agencies. It is also important to acknowledge that costs may significantly change as projects move through the development and design process.

Project Priorities in the Fiscally Constrained Plan

IN ADDITION TO ESTIMATING future funding, Federal regulations require *Connect 2045* to include a list of projects that are within our fiscal constraints over the next 20 years. What follows is a description of the process PACTS undertook to meet this requirement and develop a “fiscally constrained” project list. Because the region’s needs exceed our predicted resources, a list of “aspirational” projects is also included. These projects are worthy of implementation as additional funding becomes available.

The inclusion of a project in *Connect 2045* is a critical first step in the funding process. However, inclusion in the plan does not guarantee a project will be funded. Funding decisions are ultimately made when PACTS and MaineDOT select projects for the Transportation Improvement Program. The processes for selecting projects vary widely depending on the funding sources. For example, some projects are selected through PACTS multimodal Funding Framework process while others are independently prioritized by MaineDOT. PACTS and MaineDOT are working on a memorandum of agreement that will specify the roles and responsibilities for project selection and prioritization, among other things.

Most projects that are added to the Transportation Improvement Program should be selected from the fiscally constrained list. However, circumstances change. For example, a project on the aspirational list may receive

a discretionary grant or perhaps the project’s implementation becomes time sensitive. Or vice versa, a project on the fiscally constrained list may not be a priority two-to-three years later. For these reasons, projects on the aspirational list would also be eligible for inclusion in the Transportation Improvement Program if the PACTS Policy Board selects them.

The inclusion of a project in *Connect 2045* is a critical first step in the funding process. However, inclusion in the plan does not guarantee a project will be funded.

PACTS will revisit these funding projections and project priorities with each subsequent update to the long-range transportation plan.

Call for Projects

In April 2022, PACTS issued a “call for projects,” which remained open for two months between April and June 2022. The application form, reviewed by the Regional Transportation Advisory Committee, asked applicants to show how their proposed projects aligned with the six *Connect 2045* goals. The opportunity to submit a project was widely publicized to our municipal members and

transit agencies (the project sponsors and recipients of Federal transportation funds). In total, 65 projects were submitted.

Project sponsors also had the option to submit regionally significant projects that fall outside the PACTS Capital Management Area (or within the Capital Management Area but not seeking PACTS funding). These projects were not scored or prioritized but are included for informational purposes and to ensure regional connections are accounted for.

Project Evaluation Criteria

While sponsors submitted eligible projects, the project team consulted with the *Connect 2045* Project Advisory Committee, as well as the Regional Transportation Advisory Committee, to develop evaluation criteria and a process for selecting projects.

Evaluation criteria were developed around the six *Connect 2045* goals, as well as other relevant state and federal policy directives. This is a best practice among metropolitan planning organizations and a way to ensure a strong connection between *Connect 2045's* vision and goals and the projects selected for funding.

As the table to the right shows, the six *Connect 2045* goals accounted for 75 of the 100 possible points. However, the maximum points for each goal were adjusted according to their rank in a public survey open during May and June of 2022. Weighting the goals in this manner was a way to incorporate public input into the project scoring process.

Project Evaluation Committee

With input from the Regional Transportation Advisory Committee and the PACTS Executive Board, staff formed a project evaluation committee composed of staff and community volunteers with professional expertise and/or lived experience in the six goal areas. Including community volunteers was another way to incorporate public input in the evaluation process. Volunteers were selected based on their application in response to PACTS advertisements. Projects were evaluated in July and August. The resulting evaluations were then used by staff, along with project timelines, cost, and other factors, to develop the fiscally constrained and vision project lists.

SCORING CATEGORY	MAX POINTS	SCORED BY
Project References	5	Staff
Goal 1: Provide Equitable Access	12	Volunteers/Staff
Goal 2: Support Great Places	11	Volunteers/Staff
Goal 3: Improve Safety	12	Volunteers/Staff
Goal 4: Expand Choices	12	Volunteers/Staff
Goal 5: Protect the Environment	15	Volunteers/Staff
Goal 6: Optimize Infrastructure	13	Volunteers/Staff
Regional Significance	20	Staff
Total	100	--

Project Evaluation Criteria

The table above shows the categories included in the evaluation criteria. Each project was evaluated by a team of volunteers and staff based on alignment with the six *Connect 2045* goals as well as project references and regional significance. The six goals accounted for 75 of the 100 points. However, the maximum points for each goal were weighted based on the results of a public survey. Weighting the goals, and inviting community volunteers to evaluate projects, were intentional ways to broaden the review process.

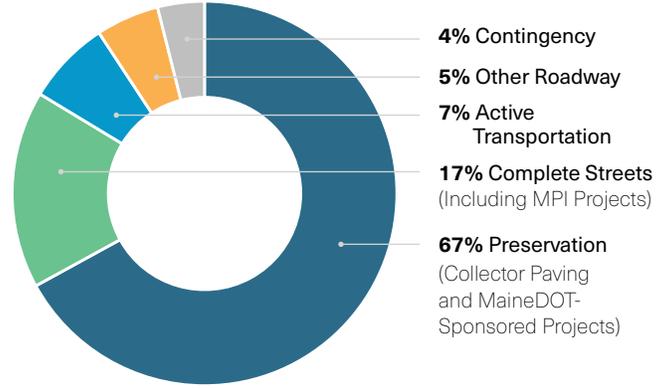
Fiscally Constrained Projects

The pages that follow show the list of fiscally constrained projects. The lists are organized by funding source. Roadway/multimodal projects would likely receive Federal Highway Administration funding, while transit projects would likely receive Federal Transit Administration funding. There are some cases in which a project could be eligible for both funding sources. For example, an intersection redesign project that includes updating traffic signals to give priority to transit vehicles could potentially receive funding from both sources. Ultimately, these decisions will be made in later phases of the project selection process.

As mentioned previously, it is also possible that projects on the fiscally constrained lists could receive funding from other sources such as Federal discretionary grants or Congressionally Directed Spending, sometimes called earmarks.

Please read before continuing

- The fiscally constrained project lists are for planning purposes and to help guide future discretionary grant pursuits. They are not guaranteed funding and project sponsors may wish to pursue various funding opportunities for design and construction.
- Projects are grouped in five-year phases to show fiscal constraint while still providing some flexibility in project implementation. Project costs are inflated to the mid-point of the five-year phase.
- The five-year phases do not necessarily determine when a project will get funded. Project sponsors can submit a project for funding at any time regardless of the timeframe shown in Connect 2045.
- Projects in the aspirational list can also be submitted for funding at any time.
- PACTS will conduct another “call for projects” and revisit the project lists in fall 2024.
- For more information on the projects see [Appendix C](#). For more information on procedures for making minor/major changes to the project lists and frequently asked questions see [Appendix D](#).



Roadway/Multimodal Investment Mix
The graph above shows anticipated roadway/multimodal expenditures by project type for the fiscally constrained plan.

Roadway/Multimodal Fiscally Constrained Projects

5-YEAR PHASE	PROJECT NAME	SPONSOR	CURRENT YEAR COST	YEAR-OF-EXPENDITURE COST	5-YEAR TOTAL YOY COST
2022-2025	Projects programmed in the PACTS 2022-2025 TIP				
Programmatic Expenses 2026-2030	MaineDOT Bridges & Pavement Preservation	MaineDOT	\$200,000,000	\$225,232,484	\$270,031,844
	PACTS Collector Paving Program	PACTS	\$11,000,000	\$12,387,787	
	PACTS Municipal Partnership Initiative	PACTS	\$16,400,000	\$18,469,064	
	Contingency	PACTS	\$12,380,550	\$13,942,510	
Currently Funded Projects	Brighton Ave. Preservation and Multimodal Modernization	Portland	\$10,975,800	\$12,360,533	\$43,537,664
	Elm St., Spruce St., Pearl St. Intersection Improvements	Biddeford	\$7,625,000	\$8,586,988	
	Forest Ave. (Marginal to Park) Multimodal Improvements	Portland	\$3,261,000	\$3,672,416	
	Libbytown Safety and Accessibility	Portland	\$6,193,200	\$6,974,549	
	Beth Condon Multi-Use Path Extension	Yarmouth	\$1,400,000	\$1,576,627	
	Main St. Sidewalk Improvement	Yarmouth	\$775,000	\$872,776	
	Traffic Adaptive Signals and Pedestrian Lighting	Gorham	\$390,200	\$439,429	
	Saco Island Multimodal Bridge	Saco/Biddeford	\$8,040,000	\$9,054,346	
Selected Projects 2026-2030 (Projects evaluated as part of Connect 2045)	Franklin St. Urban Street Conversion Project Phase I	Portland	\$9,000,000	\$10,135,462	\$35,474,567
	Forest Ave. Modernization and Complete Streets Project	Portland	\$10,200,000	\$11,486,857	
	Morrill's Corner Modernization and Complete Streets Redesign	Portland	\$7,200,000	\$8,108,369	
	Transforming Rt. 1 into a Complete Street	Yarmouth	\$3,000,001	\$3,378,488	
	Casco Bay Bridge Separated Bike Lane	South Portland	\$25,200	\$28,379	
	Completing the Southern Extension of the Beth Condon Multi-Use Path	Yarmouth	\$1,600,000	\$1,801,860	
	PACTS RTMS Phase II	Portland	\$475,200	\$535,152	

Continued on the next page.

Roadway/Multimodal Fiscally Constrained Projects (Continued)

5-YEAR PHASE	PROJECT NAME	SPONSOR	CURRENT YEAR COST	YEAR-OF-EXPENDITURE COST	5-YEAR TOTAL YOE COST
Programmatic Expenses 2031-2035	MaineDOT Bridges & Pavement Preservation	MaineDOT	\$200,000,000	\$248,674,862	\$298,136,976
	PACTS Collector Paving Program	PACTS	\$11,000,000	\$13,677,117	
	PACTS Municipal Partnership Initiative (MPI)	PACTS	\$16,400,000	\$20,391,339	
	Contingency	PACTS	\$12,380,550	\$15,393,658	
Selected Projects 2031-2035 <small>(Projects evaluated as part of Connect 2045)</small>	Franklin St. Urban Street Conversion Project Phase II	Portland	\$28,080,000	\$34,913,951	\$80,963,033
	Commercial St. Modernization and Complete Streets Project	Portland	\$9,000,000	\$11,190,369	
	Casco Bay Trail, Phase I	Casco Bay Trail Alliance	\$11,178,014	\$13,898,456	
	Outer Congress St. Johnson Rd. Modernization and Complete Streets Project	Portland	\$7,920,000	\$9,847,525	
	Mountain Division Rail-Trail - Sebago to the Sea (Windham to Bridge St. in Westbrook)	Westbrook	\$5,160,000	\$6,415,811	
	Mountain Division Rail-Trail - Sebago to the Sea (Westbrook Downtown to Portland)	Westbrook	\$1,754,401	\$2,181,377	
	Preble St. Extension Modernization Blvd. Project	Portland	\$2,160,000	\$2,685,689	
	Main St. - Downtown Streetscaping Project	Westbrook	\$3,780,000	\$4,699,955	
	Reconnecting the Waterfront	Yarmouth	\$658,737	\$819,057	
Stroudwater St. Bike-Ped Connection to Portland	Westbrook	\$250,001	\$310,845		
Programmatic Expenses 2036-2040	MaineDOT Bridges & Pavement Preservation	MaineDOT	\$200,000,000	\$274,557,141	\$329,167,311
	PACTS Collector Paving Program	PACTS	\$11,000,000	\$15,100,643	
	PACTS Municipal Partnership Initiative (MPI)	PACTS	\$16,400,000	\$22,513,686	
	Contingency	PACTS	\$12,380,550	\$16,995,842	
Selected Projects 2036-2040 <small>(Projects evaluated as part of Connect 2045)</small>	I-295 Forest Ave. Single-Point Urban Interchange (Exit 6)	Portland	\$15,600,000	\$21,415,457	\$96,517,392
	Rt. 1 North Infrastructure Improvements	Falmouth	\$10,600,000	\$14,551,528	
	Over the River — Connecting Biddeford and Saco with the Eastern Trail	Eastern Trail Management District	\$10,800,000	\$14,826,086	
	Citywide (Portland) ADA Ramps and Arterial Crossings	Portland	\$6,000,000	\$8,236,714	
	City-wide (Portland) Separated Bikeway Network Projects	Portland	\$14,400,000	\$19,768,114	
	Main St. Streetscape Improvements, Marina Rd to Railroad Square	Yarmouth	\$4,027,690	\$5,529,155	
	Rt. 1 South Multi-use Path	Freeport	\$7,200,000	\$9,884,057	
Spring Streets Modernization and Complete Streets Project Phase II	Portland	\$1,680,000	\$2,306,280		

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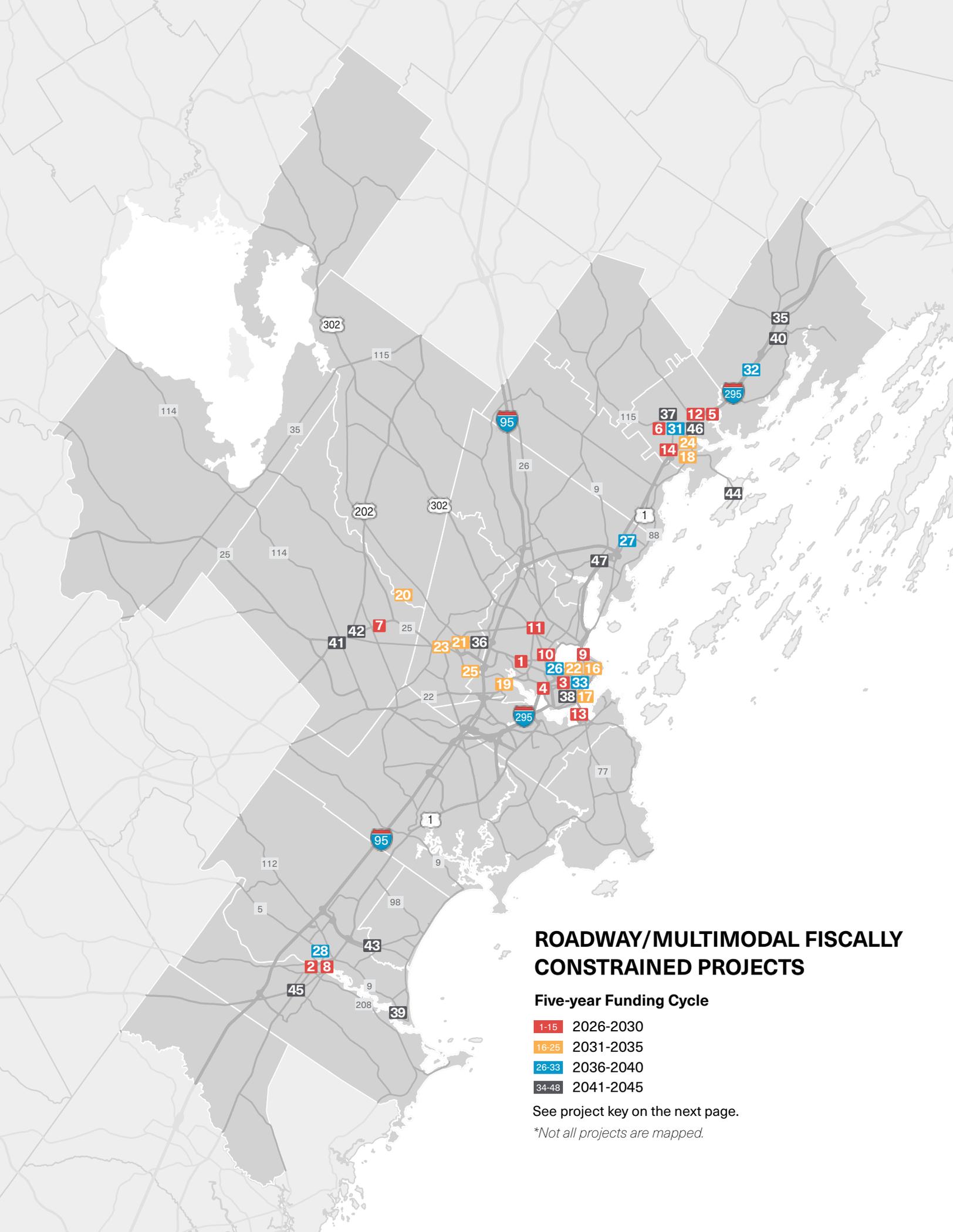
Roadway/Multimodal Fiscally Constrained Projects (Continued)

5-YEAR PHASE	PROJECT NAME	SPONSOR	CURRENT YEAR COST	YEAR-OF-EXPENDITURE COST	5-YEAR TOTAL YOY COST
Programmatic Expenses 2041-2045	MaineDOT Bridges & Pavement Preservation	MaineDOT	\$200,000,000	\$303,133,269	\$363,427,310
	PACTS Collector Paving Program	PACTS	\$11,000,000	\$16,672,330	
	PACTS Municipal Partnership Initiative (MPI)	PACTS	\$16,400,000	\$24,856,928	
	Contingency	PACTS	\$12,380,550	\$18,764,783	
Selected Projects 2041-2045 (Projects evaluated as part of Connect 2045)	City-wide (Portland) Shared Use Pathway Network Projects	Portland	\$15,900,000	\$24,099,095	\$100,809,788
	Mallett Dr. Complete Street	Freeport	\$4,200,000	\$6,365,799	
	Main St. - East Streetscaping Project	Westbrook	\$2,062,001	\$3,125,306	
	Supporting the Casco Bay Trail Through Yarmouth	Yarmouth	\$3,477,313	\$5,270,446	
	Multi-modal and connected signal technology updates: State and High Sts.	Portland	\$5,000,000	\$7,578,332	
	Ferry Rd. (Rt. 9) Sidewalk	Saco	\$2,300,000	\$3,486,033	
	Main St. Redesign	Freeport	\$5,000,000	\$7,578,332	
	Intersection Realignment Project Rt. 202/4 (Narragansett Rd.) at Rt. 25	Gorham	\$1,440,000	\$2,182,560	
	Intersection Realignment Project Rt. 202/4 (Gray Rd.) at Rt. 25	Gorham	\$2,880,000	\$4,365,119	
	I-195 and Ocean Park Rd. Transition	Saco / Old Orchard Beach	\$4,800,000	\$7,275,198	
	Constructing the Cousins Island Safeway	Yarmouth	\$898,000	\$1,361,068	
	5 Points Intersection Improvement	Biddeford	\$15,054,545	\$22,817,668	
	Traffic Signal Optimization on Rt. 1	Yarmouth	\$1,200,000	\$1,818,800	
Falmouth Corners Intersection Improvements	Falmouth	\$1,800,000	\$2,728,199		
Creating First and Last Mile Connections	Yarmouth	\$500,001	\$757,835		
			\$1,236,043,505	\$1,624,065,886	

Additional Details about the Selection Process

Connect 2045 assumes an inflation rate of two percent for roadway/multimodal projects. Project costs are inflated to the median year of the five-year period during which the project is implemented. As there are more potential projects than anticipated revenues, only projects that can be implemented within the projected revenues are included in the fiscally constrained list. Projects are listed in priority order, as funding allows. The list is constrained overall, and within each five-year period. Implementation of these projects will likely depend on federal revenue sources traditionally-administered by MaineDOT. The process used to select projects for inclusion in the list is described below:

1. Within each five-year period, first take funding off the top for:
 - a. MaineDOT Bridges & Pavement Preservation (MaineDOT estimate)
 - b. PACTS Collector Paving Program
 - c. PACTS Municipal Partnership Initiative
 - d. 15% contingency (reflecting potential for additional cost escalation)
2. Add projects to which PACTS is already committed to funding in the order in which they were selected for funding. These projects include the first eight projects listed in the 2026-2030 timeframe (marked by asterisks). PACTS has provided Preliminary Design Report (PDR) funding for these projects and is committed to funding them for construction once PDR is complete. The costs shown in this table are for construction.
3. Fund remaining projects in priority order (highest score to lowest score). If Project X is too expensive for a five-year period, skip to the next highest scoring project(s) that can be funded with the revenues anticipated during that period. If possible, fund Project X first in the next five-year period.



ROADWAY/MULTIMODAL FISCALLY CONSTRAINED PROJECTS

Five-year Funding Cycle

- 1-15 2026-2030
- 16-25 2031-2035
- 26-33 2036-2040
- 34-48 2041-2045

See project key on the next page.

**Not all projects are mapped.*

Roadway/Multimodal Fiscally Constrained Projects

2026-2030 Projects [SPONSOR]

- 1 Brighton Ave. Preservation and Modernization [PORTLAND]
- 2 Elm, Spruce, Pearl Intersection Improvements [BIDDEFORD]
- 3 Forest Ave. Improvements (Marginal to Park) [PORTLAND]
- 4 Libbytown Safety and Accessibility [PORTLAND]
- 5 Beth Condon Multi-Use Path Extension [YARMOUTH]
- 6 Main St. Sidewalk Improvement Phase 2 [YARMOUTH]
- 7 Traffic Adaptive Signals/Pedestrian Lighting [GORHAM]
- 8 Saco Island Multimodal Bridge [SACO]
- 9 Franklin St. Urban Street Conversion Phase 1 [PORTLAND]
- 10 Forest Ave. Modernization and Complete Streets Project [PORTLAND]
- 11 Morrill's Corner Modernization and Complete Streets Redesign [PORTLAND]
- 12 Transforming Rt. 1 into a Complete Street [YARMOUTH]
- 13 Casco Bay Bridge Separated Bike Lane [SOUTH PORTLAND]
- 14 Completing the Southern Extension of the Beth Condon Multi-Use Path [YARMOUTH]
- 15 PACTS RTMS Phase 2 [PORTLAND]*

2031-2035 Projects [SPONSOR]

- 16 Franklin St. Urban Street Conversion Phase 2 [PORTLAND]
- 17 Commercial St. Modernization and Complete Streets Project [PORTLAND]
- 18 Casco Bay Trail, Phase I [CASCO BAY TRAIL ALLIANCE]
- 19 Outer Congress St. Johnson Rd. Modernization and Complete Streets Project [PORTLAND]
- 20 Mountain Division Rail-Trail - Sebago to the Sea (Windham to Bridge St. in Westbrook) [WESTBROOK]
- 21 Mountain Division Rail-Trail - Sebago to the Sea (Westbrook Downtown to Portland) [WESTBROOK]
- 22 Preble St. Extension Modernization Blvd. Project [PORTLAND]
- 23 Main Street Streetscaping Project [WESTBROOK]
- 24 Reconnecting the Waterfront [YARMOUTH]
- 25 Stroudwater St. Bike-Ped connection to Portland [WESTBROOK]

2036-2040 Projects [SPONSOR]

- 26 I-295 Forest Ave. Single-Point Urban Interchange (Exit 6) [PORTLAND]
- 27 Rt. 1 North Infrastructure Improvements [FALMOUTH]
- 28 Over the River — Connecting Biddeford and Saco with the Eastern Trail [EASTERN TRAIL MANAGEMENT DISTRICT]
- 29 Citywide ADA Ramps and Arterial Crossings [PORTLAND]*
- 30 Citywide Separated Bikeway Network Projects [PORTLAND]*
- 31 Main St. Streetscape Improvements, Marina Rd. to Railroad Sq. [YARMOUTH]
- 32 Rt. 1 South Multi-use Path [FREEPORT]
- 33 Spring Sts. Modernization and Complete Streets Project Phase 2 [PORTLAND]

2041-2045 Projects [SPONSOR]

- 34 City-wide Shared Use Pathway Network Projects [PORTLAND]*
- 35 Mallett Dr. Complete Street [FREEPORT]
- 36 Main St. - East Streetscaping Project [WESTBROOK]
- 37 Supporting the Casco Bay Trail Through Yarmouth [YARMOUTH]
- 38 Multi-modal and connected signal technology updates: State and High Sts. [PORTLAND]
- 39 Ferry Rd. (Rt. 9) Sidewalk [SACO]
- 40 Main St. [FREEPORT]
- 41 Intersection Realignment Project Rt. 202/4 (Narragansett Rd.) at Rt. 25 [GORHAM]
- 42 Intersection Realignment Project Rt. 202/4 (Gray Rd.) at Rt. 25 [GORHAM]
- 43 I-195 and Ocean Park Rd. Transition [SACO]
- 44 Constructing the Cousins Island Safeway [YARMOUTH]
- 45 5 Points Intersection Improvement [BIDDEFORD]
- 46 Traffic Signal Optimization on Rt. 1 [YARMOUTH]
- 47 Falmouth Corners Intersection Improvements [FALMOUTH]
- 48 Creating First and Last Mile Connections [YARMOUTH]*

[1] The first four projects in each funding cycle are not included in the map.

1. MaineDOT Bridges & Pavement Preservation (Five-Year Cost)
2. PACTS Collector Paving Program (Five-Year Cost)
3. PACTS Municipal Partnership Initiative (MPI) (Five-Year Cost)
4. Contingency (Five Years)

[2] Projects with asterisks (*) are not shown on the map.

[3] See [Appendix C](#) for more information on all projects received.

Transit Fiscally Constrained Projects

3- OR 5-YEAR PHASE	PROJECT NAME	CURRENT YEAR COST	YEAR-OF- EXPENDITURE COST	5-YEAR TOTAL YOY COST
Programmatic Expenses 2023-2025	Section 5307, Urbanized Area Formula Grants – Operations & Maintenance (88% of 5307 funds)	\$36,651,569	\$38,132,292	\$81,252,294
	Section 5310, Enhanced Mobility of Seniors & Individuals with Disabilities Formula Grants	\$929,100	\$966,636	
	Section 5337, State of Good Repair Grants	\$39,641,100	\$41,242,600	
	Section 5339, Buses and Bus Facilities Grants	\$875,400	\$910,766	
Selected Projects 2023-2025	Systemwide transit frequency and service upgrades	\$4,967,940	\$5,168,645	\$16,943,830
	Expansion of transit service to new locations in the region	\$4,967,940	\$5,168,645	
	Transit signal priority	\$2,500,000	\$2,601,000	
	Biddeford-Saco-Portland rapid transit corridor analysis	\$800,000	\$832,320	
	Regional Microtransit	\$2,250,000	\$2,340,900	
	Real-time information signage	\$800,000	\$832,320	
Programmatic Expenses 2026-2030	Section 5307, Urbanized Area Formula Grants – Operations & Maintenance (88% of 5307 funds)	\$61,085,948	\$68,792,699	\$146,583,494
	Section 5310, Enhanced Mobility of Seniors & Individuals with Disabilities Formula Grants	\$1,548,500	\$1,743,863	
	Section 5337, State of Good Repair Grants	\$66,068,500	\$74,403,862	
	Section 5339, Buses and Bus Facilities Grants	\$1,459,000	\$1,643,071	
Selected Projects 2026-2030	Systemwide transit frequency and service upgrades	\$4,967,940	\$5,594,707	\$31,460,338
	Expansion of transit service to new locations in the region	\$4,967,940	\$5,594,707	
	Transit stop improvements	\$5,032,060	\$5,666,917	
	Downtown Portland transit hub	\$8,000,000	\$9,009,299	
	Transit mobility hubs	\$4,967,940	\$5,594,707	
Programmatic Expenses 2031-2035	Section 5307, Urbanized Area Formula Grants – Operations & Maintenance (88% of 5307 funds)	\$61,085,948	\$75,952,698	\$161,840,022
	Section 5310, Enhanced Mobility of Seniors & Individuals with Disabilities Formula Grants	\$1,548,500	\$1,925,365	
	Section 5337, State of Good Repair Grants	\$66,068,500	\$82,147,875	
	Section 5339, Buses and Bus Facilities Grants	\$1,459,000	\$1,814,083	
Selected Projects 2031-2035	Systemwide transit frequency and service upgrades	\$4,967,940	\$6,177,009	\$30,885,045
	Expansion of transit service to new locations in the region	\$4,967,940	\$6,177,009	
	Transit stop improvements	\$4,967,940	\$6,177,009	
	Transit mobility hubs	\$4,967,940	\$6,177,009	
	Transit operations and maintenance facilities	\$4,967,940	\$6,177,009	

Continued on the next page.

Transit Fiscally Constrained Projects (Continued)

3- OR 5-YEAR PHASE	PROJECT NAME	CURRENT YEAR COST	YEAR-OF- EXPENDITURE COST	5-YEAR TOTAL YOY COST
Programmatic Expenses 2036-2040	Section 5307, Urbanized Area Formula Grants – Operations & Maintenance (88% of 5307 funds)	\$61,085,948	\$83,857,916	\$178,684,462
	Section 5310, Enhanced Mobility of Seniors & Individuals with Disabilities Formula Grants	\$1,548,500	\$2,125,759	
	Section 5337, State of Good Repair Grants	\$66,068,500	\$90,697,892	
	Section 5339, Buses and Bus Facilities Grants	\$1,459,000	\$2,002,894	
Selected Projects 2036-2040	Systemwide transit frequency and service upgrades	\$4,967,940	\$6,819,917	\$34,099,585
	Expansion of transit service to new locations in the region	\$4,967,940	\$6,819,917	
	Transit operations and maintenance facilities	\$4,967,940	\$6,819,917	
	On-route charging infrastructure	\$4,967,940	\$6,819,917	
	Peaks Island ferry landing improvement	\$4,967,940	\$6,819,917	
Programmatic Expenses 2041-2045	Section 5307, Urbanized Area Formula Grants – Operations & Maintenance (88% of 5307 funds)	\$61,085,948	\$92,585,915	\$197,282,084
	Section 5310, Enhanced Mobility of Seniors & Individuals with Disabilities Formula Grants	\$1,548,500	\$2,347,009	
	Section 5337, State of Good Repair Grants	\$66,068,500	\$100,137,802	
	Section 5339, Buses and Bus Facilities Grants	\$1,459,000	\$2,211,357	
Selected Projects 2041-2045	Systemwide transit frequency and service upgrades	\$7,451,910	\$11,294,609	\$41,413,567
	Expansion of transit service to new locations in the region	\$4,967,940	\$7,529,739	
	Transit operations and maintenance facilities	\$4,967,940	\$7,529,739	
	On-route charging infrastructure	\$4,967,940	\$7,529,739	
	Peaks Island ferry landing improvement	\$4,967,940	\$7,529,739	
		\$719,969,791	\$920,444,721	

Additional Details about the Selection Process

Connect 2045 assumes an inflation rate of two percent for transit expenses. Project costs are inflated to the median year of the five-year period during which the project is implemented. As there are more potential projects than anticipated revenues, only projects that can be implemented within the projected revenues are included in the fiscally constrained list. Projects are listed in priority order, as funding allows. The list is constrained overall, and within each five-year period (or three-year period, for 2023-2025). The process used to select projects for inclusion in the list is described below:

1. Within each 3-to 5-year period, first take funding off the top for:
 - a. Section 5307, Urbanized Area Formula Grants – Operations & Maintenance (88% of 5307 funds)
 - b. Section 5310, Enhanced Mobility of Seniors & Individuals with Disabilities Formula Grants
 - c. Section 5337, State of Good Repair Grants
 - d. Section 5339, Buses and Bus Facilities Grants
2. Fund remaining projects in score order (highest to lowest) with Section 5307 — Urbanized Area Formula Grants — System Enhancement (12% of 5307 funds) and anticipated discretionary funding. If Project X is too expensive for a five-year period, skip to the next highest scoring project(s) that can be funded with anticipated revenue for that time period. If possible, fund Project X first in the next five-year period.
3. Many of the transit projects have cost estimates that significantly exceed anticipated annual revenues. Cap these projects at three years' worth of 5307 System Enhancement Funding (12%). Finally, since many of these projects have been scaled to reflect regional needs, they can be implemented in phases; fund them in multiple five-year periods.
4. In the final five-year period, as revenues allow, fund regional-scale projects at more than three years' worth of 12% of 5307 funds. Note: the fiscally constrained plan assumes a 12% distribution for System Enhancement projects; however, PACTS' goal is to commit 20% of 5307 resources to transit enhancement/improvement projects.

Aspirational Projects

FEDERAL REGULATIONS allow for the financial plan to include additional projects (“aspirational” projects) that would be included, or fully funded, in the fiscally constrained plan if additional resources were identified. The *Connect 2045* aspirational list of projects is provided below.

Roadway/Multimodal & Transit Aspirational Projects

PROJECT NAME	CURRENT YEAR COST
Systemwide transit frequency and service upgrades	\$23,176,330
Expansion of transit service to new locations in the region	\$109,160,300
Downtown Portland transit hub	\$12,000,000
Downeaster Portland Station relocation	\$20,000,000
Downeaster West Falmouth Station	\$3,000,000
Transit operations and maintenance facilities	\$25,096,180
Rapid transit implementation <i>(four corridors identified in Transit Tomorrow)</i>	TBD
Rt. 115 shoulders for cyclists (Yarmouth)	N/A
Elm St improvements phase 1 (Biddeford)	\$15,000,000
Elm Street improvements phase 2 and 3 (Biddeford)	\$21,054,545
Rt. 302 corridor upgrade (Westbrook)	\$6,180,000
Alfred St. (Rt. 111) improvements (Biddeford)	\$15,818,182
Expanding EV infrastructure (Yarmouth)	N/A
	\$250,485,537

Other Regionally Significant Projects

THE PREVIOUS PROJECT LISTS do not include all projects in the region. Municipalities, transit agencies, and the Maine Turnpike Authority also independently develop projects without PACTS funding, sponsorship, or administration. In some cases, projects are not eligible because they are located outside the PACTS funding area, or on local roads that are not eligible for federal funding. In other cases, projects are known priorities but not submitted during the *Connect 2045* “call for projects” because they are not far enough along in the planning process.

These projects may or may not be consistent with *Connect 2045*'s goals and are included

as “other regionally significant projects” for context only. Although they are not expected to move into the fiscally constrained or aspirational project lists (at least in the short term), it is important to include them to provide a more complete picture of the region’s transportation projects and PACTS member priorities.

Previously funded PACTS projects that are now underway (or soon-to-be underway) are also shown in the table below. These projects were not submitted or evaluated as part of *Connect 2045* because they have already received funding. They are included due to their regional significance and denoted with asterisks.

Other Regionally Significant Projects (Non-Municipal Sponsors)

PROJECT NAME	STATUS	SPONSOR
Terminal renovation	Future	Casco Bay Lines
Online ticketing	Future	Casco Bay Lines
Lewiston/Auburn to Portland bus or rail transit connection	Future	MaineDOT
I-95 mainline widening	Current	Maine Turnpike Authority
I-95 Exit 45 interchange reconstruction	Current	Maine Turnpike Authority
I-95 EV charging stations	Current	Maine Turnpike Authority
I-95 Gorham connector	Future	Maine Turnpike Authority
I-95 High Speed EZ Pass lanes	Future	Maine Turnpike Authority
I-95 Exit 35 park and ride	Current	Maine Turnpike Authority
Positive Train Control upgrades	Current	NNEPRA
Wells area improvement project	Current	NNEPRA
Jetport baggage claim expansion	Future	Portland Jetport
Jetport runway rehabilitation	Current	Portland Jetport
Vehicle fleet/vessel electrification	Future	Transit Agencies
Creative bus shelters*	Current	Transit Agencies

*Projects PACTS has committed funding to.

The projects above were discussed during stakeholder outreach.

Other Regionally Significant Projects (Municipal Sponsors)

PROJECT NAME	STATUS	SPONSOR
Route 111/South St. connector	Future	Biddeford
Rt. 77 rebuild	Current	Cape Elizabeth
Town center intersection redesign	Current	Cape Elizabeth
Shore Rd. improvements*	Future	Cape Elizabeth
Tuttle Rd. and Main St. improvements	Current	Cumberland
I-295 park & ride	Future	Falmouth
Falmouth Rd. sidewalk	Future	Falmouth
Rt. 100 infrastructure improvements	Future	Falmouth
Blackstrap Rd. infrastructure improvements	Future	Falmouth
I-295 Exit 20 bridge and multi-use path	Current	Freeport
Bracket St. and Saco St. roundabout	Current	Gorham
New Portland Rd. paved shoulder	Current	Gorham
Crosstown Trail*	Current	Gorham
West Grand Ave. improvements	Current	Old Orchard Beach
Union/Saco Ave. improvements	Current	Old Orchard Beach
Rt. 1 reconstruction over Scarborough marsh	Current	Scarborough
"Close the Gap" Eastern Trail project*	Current	Scarborough
Gorham Rd. rebuild	Current	Scarborough
Cash Corner multi-use path extension	Current	South Portland
Westbrook St. multi-use path	Current	South Portland
Cottage Rd. pedestrian safety improvements*	Current	South Portland
Standish Village intersection redesign	Current	Standish
Spring St. improvements	Future	Westbrook
Saco St. improvements	Future	Westbrook
Stroudwater St. rebuild	Future	Westbrook
North Windham Moves improvements	Future	Windham
I-295 Exit 15 bridge replacement project	Current	Yarmouth

*Projects PACTS has committed funding to.

The projects above were either submitted as part of the Connect 2045 "call for projects" (separate application for projects outside the funding area) or discussed during stakeholder outreach.

Acronyms & Abbreviations

AAA	All Ages and Abilities	SMPDC	Southern Maine Planning and Development Commission
AADT	Annual Average Daily Traffic	SPBS	South Portland Bus Service
ACS	American Community Survey	TAP	Transportation Alternatives Program
ADA	Americans with Disability Act	TCRP	Transit Cooperative Research Program
AIM	Accelerating Innovative Mobility	TDM	Transportation Demand Management
AV	Autonomous Vehicle	TIP	Transportation Improvement Program
BAU	Business as Usual	TMA	Transportation Management Association
BIL	Bipartisan Infrastructure Law	TNC	Transportation Network Companies
BRT	Bus Rapid Transit	TOD	Transit-Oriented Development
BSOOB	Biddeford Saco Old Orchard Beach	TSP	Transit Signal Priority
BUILD	Better Utilizing Investments to Leverage Development	USM	University of Southern Maine
CBL	Casco Bay Lines	UZA	Urbanized Areas
CMAQ	Congestion Mitigation and Air Quality	VMT	Vehicle Miles Traveled
CO2	Carbon Dioxide	YCCAC	York County Community Action Corporation
EPA	Environmental Protection Agency		
ETA	Equitable Target Areas		
EV	Electric Vehicle		
eVTOL	Electric Vertical Take-Off and Landing		
FAST	Fixing America's Surface Transportation		
FHWA	Federal Highway Administration		
FTA	Federal Transit Administration		
GHG	Greenhouse Gas Emissions		
GPCOG	Greater Portland Council of Governments		
HUD	Department of Housing and Urban Development		
HSIP	Highway Safety Improvement Program		
IJA	Infrastructure Investment and Jobs Act		
ISTEA	Intermodal Surface Transportation Efficiency Act		
ITS	Intelligent Transportation Systems		
LEHD	Longitudinal Employer-Household Dynamics		
LRT	Light Rail Transit		
MaaS	Mobility-as-a-Service		
MaineDOT	Maine Department of Transportation		
MAP-21	Moving Ahead for Progress in the 21st Century Act		
MCC	Maine Clean Communities		
MMTCO2e	Metric Tons of Carbon Dioxide Equivalent		
MPO	Metropolitan Planning Organization		
MTA	Maine Turnpike Authority		
NHS	National Highway System		
NHTSA	National Highway Traffic Safety Administration		
NEPA	National Environmental Policy Act		
NNEPRA	Northern New England Passenger Rail Authority		
NTD	National Transit Database		
PAC/PAG	Project Advisory Committee/Group		
PACTS	Portland Area Comprehensive Transportation System		
PDR	Preliminary Design Report		
PTC	Portland Transportation Center		
RTP	Regional Transportation Program		
SGR	State of Good Repair		

