MAINE STATE TRANSIT PLAN

Needs Assessment

March 2023

MaineDOT

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Needs Assessment

prepared for

MaineDOT

prepared by

CAMBRIDGE SYSTEMATICS

date

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ADA	Americans with Disabilities Act
ARTS	Aroostook Regional Transportation System
BSOOB	Biddeford | Saco | Old Orchard Beach Transit
CAD/AVL	Computer-Aided Dispatch/Automatic Vehicle Location
COAST	Cooperative Alliance for Seacoast Transportation
DCP Rides	Downeast Community Partners Rides
DHHS	Department of Health and Human Services (Maine)
FTA	Federal Transit Administration
GTFS	General Transit Feed Specification
GTFS-Flex	General Transit Feed Specification for Flexible Service
KVCAP	Kennebec Valley Community Action Program
LATC	Lewiston—Auburn Transportation Committee (CityLink)
LCP	Locally Coordinated Plan
O-D	Origin—Destination
PACTS	Portland Area Comprehensive Transportation System
Penquis CAP	Penquis Community Action Program
RTP	Regional Transportation Program (Referring to the Portland area designated Regional Transportation Program)
RTP(s)	Regional Transportation Programs (Referring to Maine's eight statewide regional transit providers)
SPBS	South Portland City Bus Service
Waldo CAP	Waldo Community Action Partners
WMTS	Western Maine Transportation Services
YCCAC	York County Community Action Corporation

1. INTRODUCTION

Following an examination of existing conditions, the needs assessment identifies key shortcomings, and corresponding needs of the statewide public transit system using:

- **Existing Conditions Assessment:** Insight from the general service structures, performance measures, and land use/economic characteristics of Maine's communities.
- **Surveying Process:** A public survey was open between April 2nd and 30th, 2022 with 627 respondents answering questions about priorities for transit, allocation of funds between program areas, frequency and reason for use of transit, and demographic information. These survey results are detailed in Appendix A.
- **Public and Stakeholder Outreach**: Feedback received during a series of public meetings for the MaineDOT Family of Plans during the first half of 2022; input from the project steering committee made up of key transit stakeholders throughout the state; prior work in related studies including the 2019-2023 *Locally Coordinated Plan*; and a series of meetings with various transit stakeholders throughout the planning process.
- **Implementation of Quantitative and Geographic Methodology:** Travel patterns throughout the state were examined to identify areas of high transit propensity that are not currently served adequately by transit, based on an analysis of StreetLight Location-Based Services data and demographics. The results are incorporated into the needs identified in this document, and the process is documented in Appendix B.

Informed by these key sources of information and insight, this needs assessment represents a comprehensive listing of needs and shortcomings of the current statewide public transit system. This includes needs related to geography, the environment, service structure, COVID-19, labor shortages and supply chain issues, funding, and technology.

2. NEEDS ASSESSMENT

The results of the needs assessment are organized around the focus areas for Maine's public transportation system identified in the existing conditions assessment.

2.1 Rural Transit Demand and Accessibility Needs

The existing conditions assessment and insight from multiple outreach efforts identified rural transit accessibility as an especially important need for the statewide public transit network to address. The challenges related to rural transit planning and delivery include:

- **Physical Accessibility:** Physical geographic challenges such as steep terrains, narrow or unpaved roads, and a lack of sidewalks, bicycle, or pedestrian infrastructure.
- **Sparsely Populated:** In many of Maine's rural communities, the large geographic distance between users increases vehicle revenue hours and miles, and often results in long deadhead trips. This service profile incurs high costs for service providers and long travel times for riders.
- **Technology Accessibility:** Although most transit providers did not report issues with technology and Internet connectivity, this does not necessarily apply to current users and potential users within service coverage areas.

In Maine, rural public transportation is primarily provided by one of eight Regional Transportation Programs (RTPs). These RTPs provide curb-to-curb demand-response services and flex routes with levels of service that range between daily and weekly availability.

The Transit Plan addresses multiple aspects of rural public transit provision, including:

- **Identifying and quantifying all transit demand in rural areas,** with an emphasis on existing and/or emerging origin-destination (O-D) patterns. Throughout the outreach process, multiple comments were received regarding the lack of effective transit options for rural users. As such, there is a need to determine where users are located and identify the most important and significant trip generators. As the first step in this process, the needs assessment uses a quantitative approach to assess transit demand using transit propensity scores applied to statewide Census Tracts, as well as StreetLight transit ridership data, described in Appendix B.

- **Increased door-to-door service** since geography and trip densities are not conducive to scheduled and fixed-route services outside of village centers and major corridors in most parts of the state. This need acknowledges the difficulties associated with Maine's low-density regions, as well as the demand-response and flex routes format of existing transit services provided by the RTPs. This format is typically characterized by services that are not operated every weekday. Examples include services provided by the Aroostook Regional Transportation Service (ARTS), Downeast Community Partners (DCP Rides), Penquis Community Action Program (Penquis CAP), Western Maine Transportation Services (WMTS), and York County Community Action Corporation (YCCAC). While several rural communities are served once-a-week by these demand-response services, greater frequencies and additional destinations may be needed, an issue which was also highlighted in the survey.

  Door-to-door services may be improved by further examining the boundaries of each of the eight RTPs. For example, the Transit Propensity Analysis found that Brunswick and surrounding communities appear to have stronger travel pattern connections to the Lewiston/Auburn area, which is part of Region 7, than to the rest of the Midcoast communities in Region 5. As such, it is recommended that MaineDOT reassess these particular boundaries, as changes could lead to more reliable service for these communities.

- **Improving multimodal connectivity to transit service.** Connecting transit stops and stations to bicycle and pedestrian facilities encourages multimodal mobility. This should include accommodations for safety, accessibility, and comfort at transit stops, such as shelters, benches, and lighting. Transit service and connecting infrastructure need to be fully ADA-compliant and accessible to users of all ages and physical abilities. While many rural transit agencies provide demand-response services that have limited fixed infrastructure for customers, it is important that these accommodations are in place at popular destinations for demand-response travel, such as senior centers, hospitals, and grocery stores.

- **Improved technology** targeted to public transit users in rural areas, including in places where Internet connectivity could be an issue. This could include mobile apps that provide information on service availability without Internet connectivity, as well as automated messaging for trip scheduling and booking available through home landlines. While not directly identified through the outreach process, or previously published plans,

this would address any shortcomings in technological accessibility that current and potential users may face now and in the future.

» Improving **marketing and communication** of the availability of all transit services. This need was determined based on insight from multiple outreach efforts. While most inhabited areas of Maine are served by public transit, even if at relatively limited frequencies, the lack of awareness among users and potential users of available services, or a belief that services are not available to the general public, has been a frequently heard concern.

Table 2.1 Rural and Low-Density Area Transit Availability by County

County	Description of Available Services
Northern Maine Counties	
Aroostook	Frequencies of between daily weekday and weekly flexible and demand-response services to most inhabited portions of the county.
Penobscot	Weekly demand-response service available to each town.
Piscataquis	Weekly demand-response service available to each town.
Midcoast Counties	
Knox	Demand-response service available subject to geographic considerations and availability of vehicles and/or drivers. Weekday flex route service around Rockland.
Lincoln	Demand-response service available subject to geographic considerations and availability of vehicles and/or drivers.
Sagadahoc	Demand-response service available subject to geographic considerations and availability of vehicles and/or drivers.
Waldo	Demand-response service available subject to geographic considerations and availability of vehicles and/or drivers. Weekday flex route service around Belfast.
Greater Portland & South Coast Counties	
Cumberland	Weekday demand-response service available. Scheduled services into Portland.
York	Weekly demand-response service to each town. Additional transit services available in denser coastal communities.
Western Maine Counties	
Androscoggin	Demand-response service available subject to geographic considerations and availability of vehicles and/or drivers.
Franklin	Demand-response service available subject to geographic considerations and availability of vehicles and/or drivers.
Kennebec	Weekday flex route services around Augusta, Waterville, and surrounding communities.
Oxford	Flex route services on select weekdays, and demand-response service available subject to availability of vehicles and/or drivers.
Somerset	Weekday flex route services in lower portion of the county.
Eastern Maine Counties	
Hancock	Scheduled weekday services to Bar Harbor and coastal communities.
Washington	Weekday flex and demand-response services in coastal portions of the county.

Better marketing and more effective communication of services may be needed, as many potential users, and even some existing users, may not know the full extent of transit options and transit connections available to them. This particular need was exemplified following the data request to transit operators. Although each operator responded and provided information on available transportation services, an additional desk scan was conducted to gain familiarity with all additional transportation services. Some transportation services had very limited information available, and what was available was difficult to find, especially with transportation services operated by the respective Regional Transportation Programs. For example, information on some demand-response services, such as time required in advance to book trips, service area, or specific service parameters, was not readily available, and would require an additional call to the RTP, creating an obstacle for riders and requiring additional staff time for providers.

- **Increased service for the aging population.** The fastest-growing demographic in Maine is the age 65+ population, many of whom live in rural areas with auto-centric land use and community design. Many will struggle to transport themselves as they age and, if unable to find alternative transportation, may experience a higher risk of social isolation and health problems. Expanded service availability and additional support may be necessary to help these users understand their travel options and access service.
- **Key Rural Transit Needs** include:
  - Effective quantification of demand
  - Sufficient door-to-door service
  - Sufficient multimodal connectivity and accessibility
  - Effective targeted technology
  - Appropriate marketing and communication; and
  - Responsive service for the aging population.

2.2 Service Structure and Coordination Needs

The physical parameters associated with public transit services were especially highlighted through the outreach portion of the Transit Plan process. This includes:

- **Increased service frequencies**, especially for smaller transit systems and markets with frequencies of once per hour or less. The need for increased service frequencies can be applied to two aspects of public transit service:
  - Flex route and small urban and regional systems where once-per-hour or less frequencies may be insufficient. This includes many of the services provided by Biddeford Saco Old Orchard Beach (BSOOB) Transit and Bath City Bus, as well as flex route services by the RTPs, such as those provided by YCCAC in York County and the Kennebec Valley Community Action Program (KVCAP) in Augusta and Waterville.
  - Rural demand-response services where frequencies and service availability of once per day or once per week may be insufficient. Examples of these services include routes provided by ARTS, DCP Rides, Penquis CAP, WMTS, and YCCAC.
  - As a statewide plan, the *Maine State Transit Plan* process does not identify shortcomings of service frequencies related to specific routes provided by any individual agency. Many of the urban fixed routes operate on hourly or less frequencies as well, indicating that there could be a need for increased service frequencies. Individual agencies should work with their partners assess their current frequencies based on current and expected ridership and demand, and according to budget availability and vehicle and operator availability.
- **Increased hours of service** in areas where demand warrants. Many of the rural transit services, including demand-response and flex route services, have hours of service which end between approximately 3:00 p.m. and 5:00 p.m. Limited frequencies and hours may mean that customers are largely unable to use transit for afternoon or evening trips.
- **Increased coordination between adjacent transit services**. The Existing Conditions Assessment highlighted that Maine is well-covered by multiple transit systems. This is especially the case in urban areas such as Portland and Bangor, where transfers between transit systems are relatively easy. There is limited coordination, however, in route scheduling between adjacent systems in these areas. Additionally, it is unclear how many users actually make transfers between agencies, and if these users experience challenges

with transferring. Improved coordination of services and schedules among the various operators can improve transit availability, connectivity, and the overall user experience.

In particular, the quantitative analysis found that efforts towards coordination in the areas in and near Portland are clearly justified, including between Greater Portland Metro, South Portland Bus Service (SPBS), and BSOOB Transit. A large amount of travel takes place throughout this region that is served by multiple agencies. Current coordination includes a unified fare payment system, DiriGo Pass, and ongoing planning and coordination efforts. Technology initiatives such as bus electrification and the integration of General Transit Feed Specification (GTFS) provides further opportunity for coordination going forward. Given the travel patterns and high transit propensities in this area, additional and ongoing coordination in information sharing (both between agencies and for current and potential riders), scheduling, transfer locations, operations, and fare policies are warranted.

- **Increased geographic coverage of transit services** in multiple portions of the state. Derived from survey comments, this includes intercity services, transit coverage to and within some rural areas, and coverage to certain types of locations such as medical appointments, grocery stores, post offices and banks.
- Multiple survey comments indicated a need for additional transit connecting the state's urban centers, including between Greater Portland, Lewiston/Auburn, and Augusta, and improved service to Bangor and Augusta from the south. A more robust intercity service is needed connecting Portland to smaller cities and towns across Maine. Currently, intercity service consists of Amtrak service from Brunswick to points south (five daily runs); Concord Coach service between Bangor, Augusta, Portland, and points south (approximately six daily runs); Cyr Bus Line service between Bangor, Houlton, and Caribou (one daily run per direction); Greyhound Bus service between Bangor, Portland, and points south; and West's Transportation between Bangor and Calais (one daily run per direction). Based on the extent of these services, a few limitations are evident:
  - Outside of the Interstate 95 and U.S. Highway 1 corridors, intercity service is nearly non-existent. The exception to this is service provided by WMTS through multiple routes along the U.S. Highway 201 corridor.
  - Second, there are no one-seat services spanning the entire state. Instead, users are required to transfer at Bangor if traveling between points south/west and north/east. For those northbound and eastbound services from Bangor, frequencies are limited to

one daily run. These low frequencies, combined with a required transfer at Bangor, indicate a likely need for increased intercity services.

As part of the quantitative analysis, expanded transit services are recommended for certain geographic locations adjacent to existing fixed route networks, including:

- Howland and Enfield, to the north of the Bangor Community Connector service area.
- Mechanic Falls, Turner, and Sabattus, surrounding the Lewiston—Auburn CityLink service area.
- Communities surrounding Augusta and Waterville, including Winslow, China, Belgrade, Sydney, and Vassalboro.

Additional comments expressed a specific desire for better transit service in the Midcoast region, particularly in and between Rockland and Belfast. Example comments included:

'I would like to use transit more, but I live in the Midcoast and there are very limited opportunities. Local buses between neighboring towns would be nice.'

'We have no public transport on the Midcoast.'

'Better rail service and more public transit options in the Brunswick-Bath/Midcoast area would be wonderful. I am tired of having to drive so much!!'

Currently, Midcoast transit options are limited despite proximity to population and tourism destinations. Except for flex route services in and around Belfast and Rockland, transit services consist of demand-response services at $1.50 per mile, provided by Waldo CAP. Although financial assistance is available for certain users, a lack of fixed service options, combined with a high fare, make this service largely inadequate. Additional comments expressed dissatisfaction with the availability of transit service in Aroostook County, as previously highlighted. The quantitative analysis also found that additional transit services are needed in the areas of Rockland, Belfast, Camden, and surrounding communities, which would best be served by additional fixed or flex route services.

Although it was not mentioned by survey respondents, the quantitative analysis revealed a potential need for fixed or flex route service centered around the communities of Norway, Oxford, and South Paris. Located in a primarily rural/exurban area of Oxford County, and approximately 20 miles from Lewiston/Auburn, these communities have populations ranging from 2,000 to 5,000, with small but dense communities relatively close to one another. These communities also have populations with demographics and travel

patterns that appear to be well-suited to transit service and could potentially be served through the provision of a transit service centered around State Highway 26 which connects all three communities.

Lastly, some survey comments expressed the need for better transit service to certain destinations, including new housing developments and airports. The case of new housing developments may exist primarily in and around Portland's suburbs, as well as points south into York County where considerable population growth is occurring. Additional new developments which could require better transit options may exist in the outskirts of other population centers such as Lewiston/Auburn, Bangor, and Augusta.

- **Increased coordination with the Maine Department of Health and Human Services (HHS)**, which oversees the Non-Emergency Medical Transportation (NEMT) program through the Office of MaineCare Services (OMS). OMS uses a brokerage system to arrange NEMT trips for MaineCare (Medicaid) members under a reimbursement system that incentivizes the broker to select the lowest cost provider. According to the LCP, this incentive structure has shifted some NEMT trips away from public transit providers and has reduced the shared ride provision for NEMT trips. As a result, services are not used as efficiently as possible, and some public transit services that serve medical facilities, which represent high-demand service areas, are underutilized. Increased coordination on trip booking and trip provision can improve operational efficiencies and improve accessibility to non-medical locations for MaineCare patients.
- **Key Service Structure and Coordination Needs** include:
  - Effective service frequencies and hours of service
  - Effective coordination between transit agencies; and
  - Sufficient geographic coverage.

2.3 Adjusting Service for Post-COVID Needs

During the COVID-19 pandemic, ridership levels across Maine public transit systems declined dramatically. This included significant decreases in 2020 and 2021 ridership, with some systems seeing ridership drops of 50 percent or more, including: Bangor Community Connector, Greater Portland Transit District, SPBS, Bath City Bus, BSOOB Transit, ARTS, Town of Cranberry Isles Commuter Ferry, Amtrak Downeaster, KVCAP, Waldo CAP, and WMTS. Although some transit systems have recovered their pre-pandemic ridership (Downeast

Transportation, Isle at Haut Boat Service, and Maine State Ferry Service), multiple systems, including several of the urban systems which constitute the bulk of statewide transit ridership, currently operate with ridership well below pre-pandemic levels.

It is still too soon to determine if these drops in ridership are temporary or permanent. However, it is likely that given the rise of remote work, telemedicine, and other virtual appointments, current transit riders may be more dependent on public transportation to meet some or all of their transportation needs. It remains to be seen if people with other transportation options, particularly those with regular access to personal vehicles, will return to public transportation in significant numbers going forward. As such, there may be a need to structure transit services to meet the needs of transit-dependent populations rather than to maximize ridership levels.

» **Key Adjusting Service for Post-COVID Needs** include:

- Comprehensive assessment of post-COVID travel patterns and service needs, especially for particularly transit-dependent populations

2.4 Driver, Labor, and Supply Chain Shortages

Driver and labor shortages across Maine must be addressed to ensure the continued provision of reliable service and support potential expansions of service. Most transit operators indicated driver shortages were an ongoing issue, affecting service in both urban and rural areas. This shortage often includes other essential transit personnel such as maintenance workers, mechanics, and dispatchers. In the case of mechanic labor shortages, there will be an eventual need to address vehicle systems in relation to battery electric and hybrid vehicles. Several operators that have not experienced driver shortages directly expressed concern about their ability to find skilled workers.

Given current economic conditions throughout the country, the labor shortage exists beyond the transportation sector. **Skills training and wage competitiveness** are important issues for public transportation. In addition, ongoing **supply chain issues** continue to impact public transit operations, from fuel prices to procurement of vehicles and parts.

» **Key Driver, Labor, and Supply Chain Needs** include:

- Address ongoing driver, labor, and supply chain issues

2.5 Climate Change and Needs Related to the Provision of Public Transit

Needs related to climate and public transit include:

- **Continued transition to electric and other zero-emission vehicles** across the statewide transit system, consistent with the recommendations of *Maine Will not Wait*. This should address issues such as charging infrastructure, power supply, impacts on the electric grid, electricity pricing, vehicle performance in Maine's environment, and operations such as route and schedule planning.
- An efficient and effective public transportation system that provides an alternative to personal vehicles and can reduce overall vehicle-miles traveled, particularly in the state's urban areas.
- **Key Climate Change Needs** include:
  - Continued transition to electric and other zero-emission vehicles; and
  - Overall robust public transportation network

2.6 Additional Technology Needs

Transit operators were asked if their operations utilized:

- Scheduling Software
- Fare Payment Systems
- Asset Management Software
- Computer-Aided Dispatch/Automatic Vehicle Location (CAD/AVL)
- General Transit Feed Specification (GTFS) standards
- Any additional technology of significance

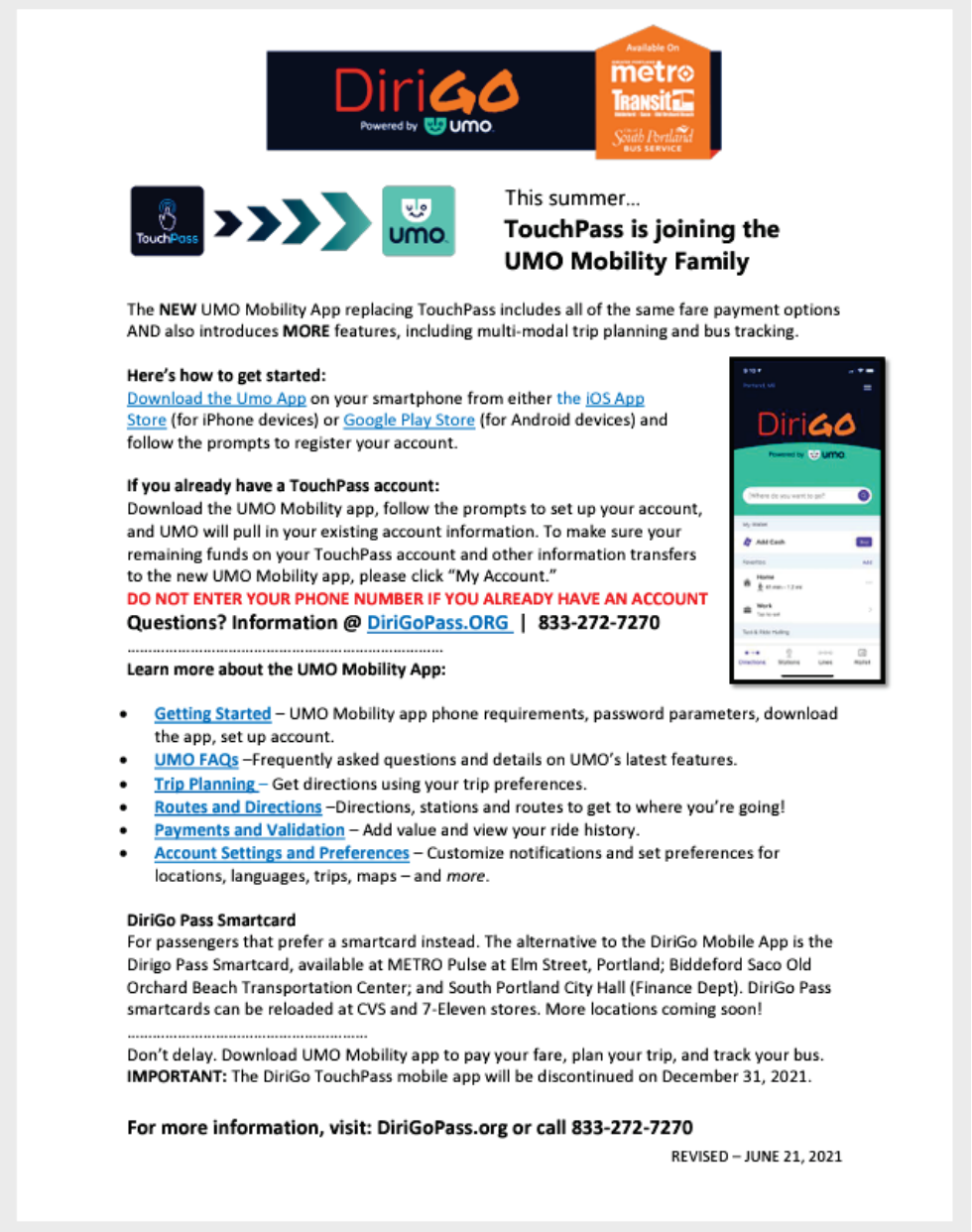
While operators indicated varying use of these technologies, particularly some degree of GTFS integration and scheduling software, their use is largely fragmented. General technology needs include:

- **Full integration of statewide transit services to GTFS and GTFS-flex**. Participation from all transit providers on the GTFS and GTFS-flex (a version of the standard designed for flexible/demand-responsive routes) standards would create a consistent platform for transit data, making it easier for current users to discover travel options across transit providers and streamlining data collection and analysis for MaineDOT and other entities. Integration would allow for better coordination of statewide transit planning efforts and better communication and marketing of services. This is especially the case for flex routes, demand-response services, and other transit options operated by the Regional Transportation Programs, where integration of GTFS and GTFS-flex will enable better coordination of services and trips, improved dissemination of information to users, the tracking of vehicles and arrival times, and the ability for users to plan their own trips more efficiently, without having to call the provider.
- **Full implementation of CAD/AVL systems on all transit vehicles**. Computer-aided dispatching/automatic vehicle location (CAD/AVL) allow transit operators to know in real time the location of all vehicles, enabling better deployment of resources and better provision of service. It also enables better customer information, including allowing for integration of GTFS Realtime, which allows trip planning apps to display and predict the actual (rather than scheduled) arrival time of vehicles to a given stop. This provides significant customer satisfaction benefits, including real-time trip planning and perceived shorter bus wait times, which help drive ridership.
- **Full implementation of scheduling software across all demand response systems** is needed to increase coordination capabilities, reduce the amount of time in advance needed to book trips, and increase the capacity of transit services. Currently, many of the demand response services require reservations of at least one day in advance. This requires users to plan ahead of time and can create an impediment for users with urgent or unexpected travel needs.
- MaineDOT would benefit from an **asset management platform** that allows state transit providers to enter their transit vehicle inventory data directly into the web, allowing MaineDOT to analyze transit fleet data such as lifecycle and maintenance needs. The department would then be able to produce Federally mandated FTA reports for easy submission, make more informed funding decisions, and better manage multi-phase, multi-year transportation project plans. This platform should include the ability to integrate with existing tools used by transit providers to allow seamless data aggregation for both

transit providers and MaineDOT. Having such a tool in place would allow MaineDOT to facilitate collaborative data management and capital planning based on agency goals and criteria. It would also give MaineDOT a forward-looking projection of capital needs for the state's transit agencies.

» Universal implementation of **modern fare payment systems** is needed across Maine's transit systems. Currently, only a few systems (Greater Portland Metro, SPBS, BSOOB Transit, and WMTS) utilize fare payment systems such as card readers. The remaining transit systems rely upon cash payment or physical passes that are purchased from community locations. Modernized fare payment systems, including contactless readers and payment by smartphone apps, allow for increased efficiency related to payments and accounting on the part of both users and transit providers. This should also include the use of single payment platforms that allow for seamless integration and use across multiple transit systems. This would better allow and accommodate transfers between more than one system. Additionally, introducing these fare payment options is important to attract additional users, including younger populations that are typically more accustomed to using cashless payment options. Lastly, implementation of modern fare payment systems could be a useful tool for increasing coordination and cohesion amongst different transit systems. As an example, the UMO fare payment system already in use for Greater Portland Metro, SPBS, and BSOOB Transit includes integrated trip planning, improved information access, and multiple fare payment options.

Figure 2.1 UMO Fare Payment System Advertisement



DiriGO Powered by umo

Available On metro Transit South Portland BUS SERVICE

TouchPass → umo

This summer...

TouchPass is joining the UMO Mobility Family

The **NEW** UMO Mobility App replacing TouchPass includes all of the same fare payment options AND also introduces **MORE** features, including multi-modal trip planning and bus tracking.

Here's how to get started:

Download the Umo App on your smartphone from either the iOS App Store (for iPhone devices) or Google Play Store (for Android devices) and follow the prompts to register your account.

If you already have a TouchPass account:

Download the UMO Mobility app, follow the prompts to set up your account, and UMO will pull in your existing account information. To make sure your remaining funds on your TouchPass account and other information transfers to the new UMO Mobility app, please click "My Account."

DO NOT ENTER YOUR PHONE NUMBER IF YOU ALREADY HAVE AN ACCOUNT

Questions? Information @ DiriGoPass.ORG | 833-272-7270

Learn more about the UMO Mobility App:

- Getting Started – UMO Mobility app phone requirements, password parameters, download the app, set up account.
- UMO FAQs –Frequently asked questions and details on UMO's latest features.
- Trip Planning – Get directions using your trip preferences.
- Routes and Directions –Directions, stations and routes to get to where you're going!
- Payments and Validation – Add value and view your ride history.
- Account Settings and Preferences – Customize notifications and set preferences for locations, languages, trips, maps – and *more*.

DiriGo Pass Smartcard

For passengers that prefer a smartcard instead. The alternative to the DiriGo Mobile App is the Dirigo Pass Smartcard, available at METRO Pulse at Elm Street, Portland; Biddeford Saco Old Orchard Beach Transportation Center; and South Portland City Hall (Finance Dept). DiriGo Pass smartcards can be reloaded at CVS and 7-Eleven stores. More locations coming soon!

Don't delay. Download UMO Mobility app to pay your fare, plan your trip, and track your bus.
IMPORTANT: The DiriGo TouchPass mobile app will be discontinued on December 31, 2021.

For more information, visit: DiriGoPass.org or call 833-272-7270

REVISED – JUNE 21, 2021

Source: UMO Transit System Fare Pass Advertisement, Usable on Greater Portland Metro, SPBS, BSOOB Transit

» **Key Additional Technology Needs** include:

- Full statewide implementation of GTFS and GTFS-flex; and
- Implementation of CAD/AVL systems, scheduling software, modern fare payment system or systems, and a statewide asset management platform

2.7 Funding

The **availability of funding** represents a key factor for the provision of public transit in Maine. The amount of state funding for public transportation is a policy decision and is not set by statute. However, the Maine State Constitution prevents Highway Fund revenues from being used for purposes other than the administration, construction, and maintenance of highways and bridges, limiting the potential sources of state funding for transit.

- **Key Funding Needs** include:
  - Sufficient public transit funding

3. SUMMARY OF NEEDS

Summarized needs identified in this needs assessment are shown in Table 3.1. These are not organized by priority, but instead by the seven categories or themes of needs. The findings shown in this needs assessment provide the basis for recommendations, solutions, and a plan for improving transit in Maine.

Table 3.1 Summary of Statewide Transit Needs

Theme	Specific Need
Rural Transit Demand and Accessibility	» Effective quantification of demand » Sufficient door-to-door service » Sufficient multimodal connectivity and accessibility » Effective targeted technology » Appropriate marketing and communication » Responsive service for the aging population
Service Structure and Coordination Needs	» Effective service frequencies and hours of service » Effective coordination between transit agencies » Sufficient geographic coverage
Adjusting Service for Post-COVID Needs	» Comprehensive assessment of post-COVID travel patterns and service needs, especially for particularly transit-dependent populations
Driver, Labor, and Supply Chain Shortages	» Address ongoing driver, labor, and supply chain issues
Climate Change	» Robust public transportation system » Continued implementation of hybrid, electric, and other low and zero-emission vehicles
Additional Technology Needs	» Full statewide implementation of GTFS and GTFS flex » Implementation of CAD/AVL systems » Scheduling software » Modern fare payment systems » Statewide asset management platform
Funding	» Sufficient public transit funding and ability to adapt to changing priorities, circumstances, and opportunities

A. NEEDS ASSESSMENT SURVEY

A.1 Survey Design and Distribution

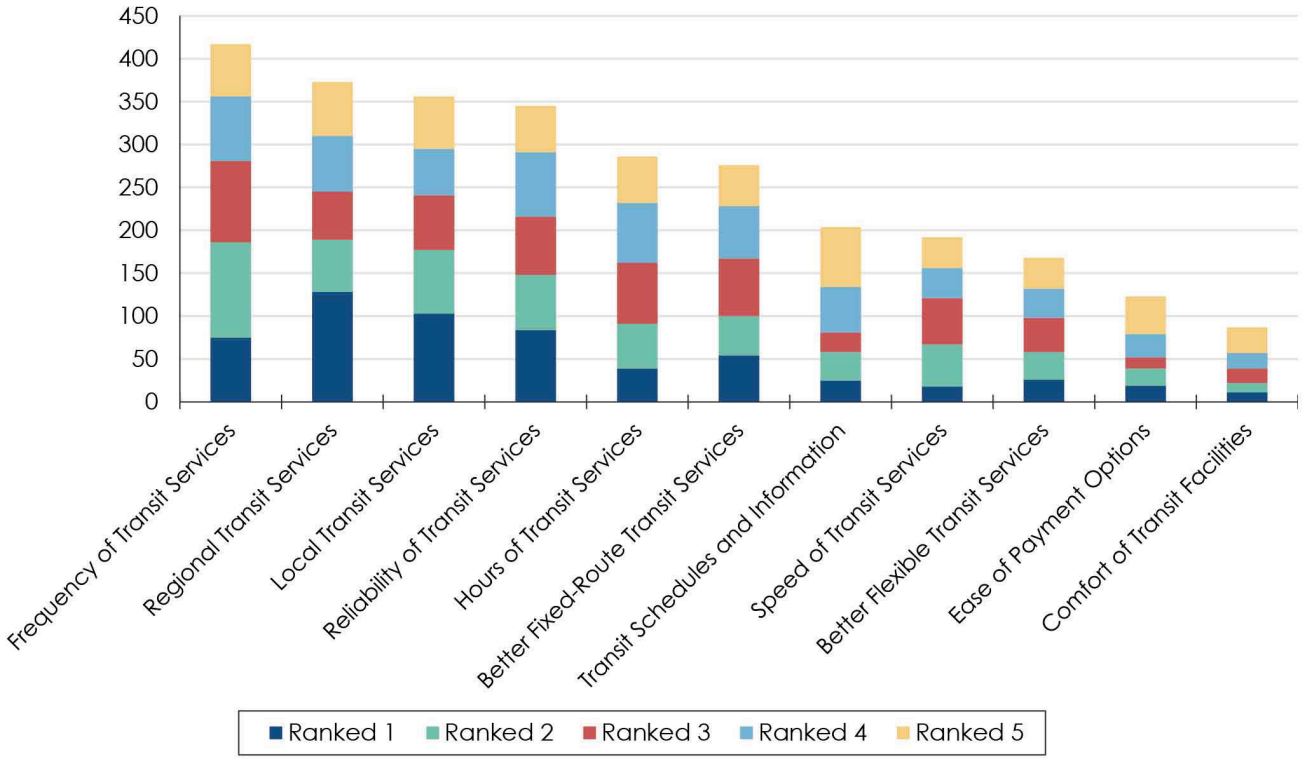
A public survey was distributed and open from April 2nd to April 30th, 2022. MaineDOT distributed the survey via an email blast and placed a link to the survey on its website. MaineDOT also promoted the survey during public meetings for this project and encouraged Steering Committee members and other stakeholders to distribute the survey to their networks. The survey asked about priorities for transit, allocation of funds between program areas, frequency and reason for use of transit, and demographic information. The survey was designed for use on the MetroQuest platform. There were 627 respondents to the survey.

A.2 Survey Results

A.2.1 Priorities for Transit

Survey respondents were asked to rank their five highest priorities for transit. Figure A.1 below shows the distribution of rankings across priority areas based on the number of times respondents selected the priority area for each of the top five rankings.

Figure A.1 Number of Instances Transit Priorities were Ranked by Survey Respondents



Based on a weighted average of responses, the five highest-rated priorities (out of a maximum score of 5.0) for transit across all survey respondents are:

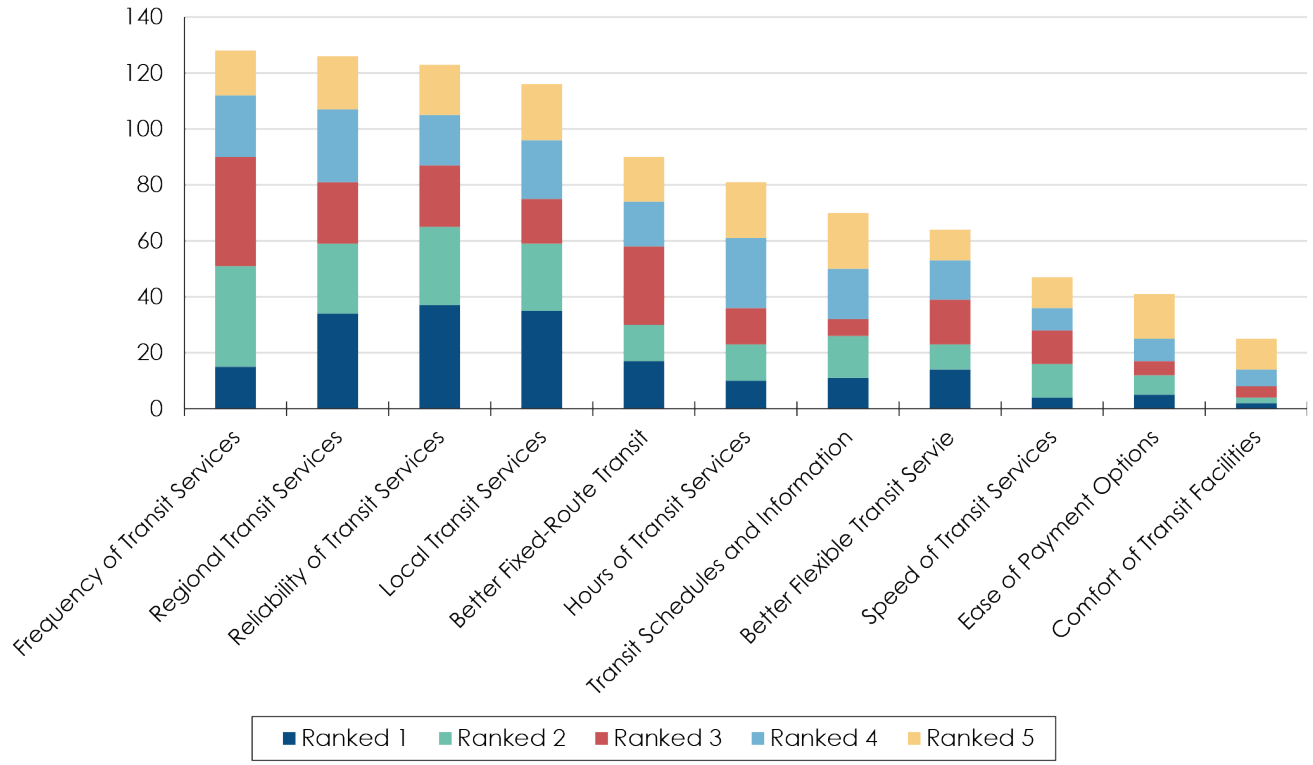
- Frequency of transit services: 2.36
- Regional transit services: 2.24
- Local transit services: 2.10
- Reliability of transit services: 1.95
- Better fixed-route transit services: 1.48

The five priorities that were listed most frequently are:

- Frequency of transit services
- Regional transit services
- Local transit services
- Reliability of transit services
- Hours of transit services

Priorities were different among respondents 65 and older, as shown in Figure A.2.

Figure A.2 Number of Instances Priorities were Ranked by Survey Respondents age 65+

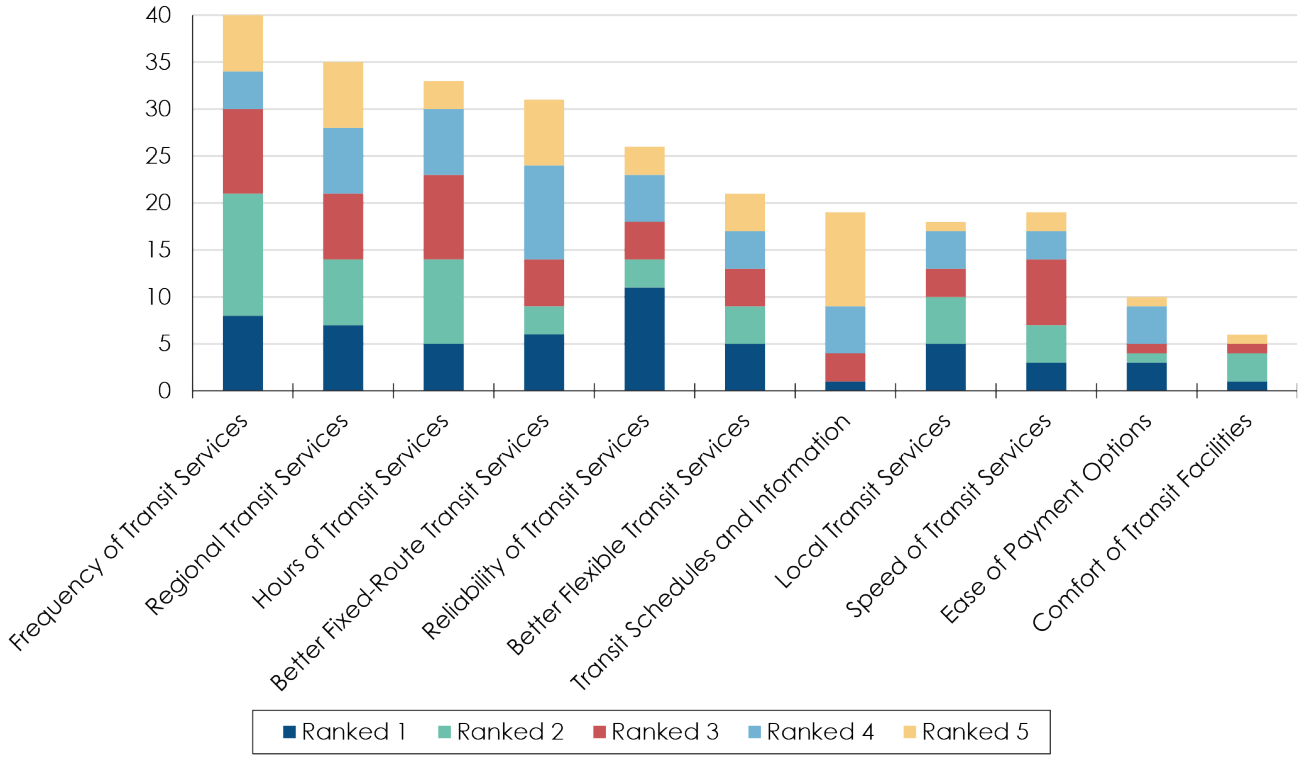


The top five priorities for respondents 65 and older (out of a maximum score of 5.0) are:

- Reliability of transit services: 2.34
- Regional transit services: 2.29
- Frequency of transit services: 2.22
- Local transit services: 2.14
- Better fixed-route transit services: 1.51

Among frequent transit users (those who indicated that they use any mode of transit at least once per week), there was little change in the ranking of priorities, as shown in Figure A.3.

Figure A.3 Number of Instances Priorities were Ranked by Frequent Transit Users



However, the highest-ranked priority, frequency of transit service, received a score of 2.96. This noticeably higher score indicates its significance to frequent transit riders. The top-five priorities among frequent transit riders (out of a maximum score of 5.0) are:

- Frequency of transit service: 2.96
- Hours of transit services: 2.33
- Regional transit services: 2.33
- Reliability of transit services: 2.04
- Better fixed-route transit services: 1.87

Survey respondents were asked to allocate a hypothetical statewide budget for different aspects of transit service by distributing 10 funding "notches" (totaling 100 percent of the statewide budget for public transportation) across five categories: geographic coverage of transit service, frequency and timing of service, quality of transit services, new transit options, and affordability and ease of payment. When budget allotments were averaged across all responses, geographic coverage, frequency and timing, and quality of transit services

received the three largest shares of the budget on average. Figure A.4 shows the average budget distribution across the five categories for all respondents:

Figure A.4 Average Percentage of Budget Allotted across Transit Spending Categories

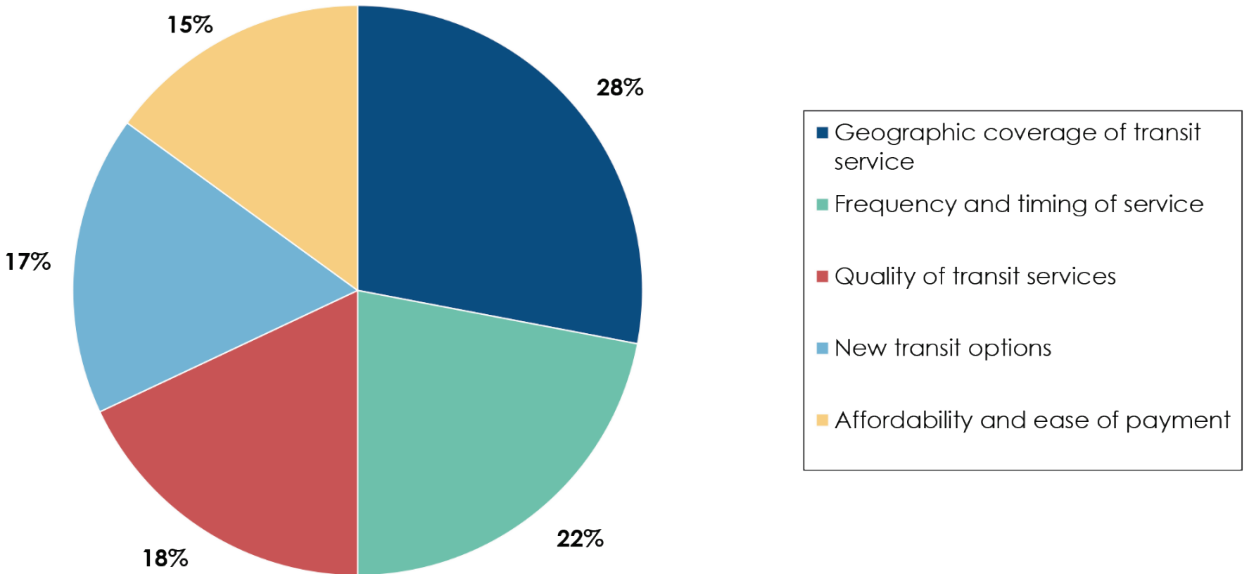
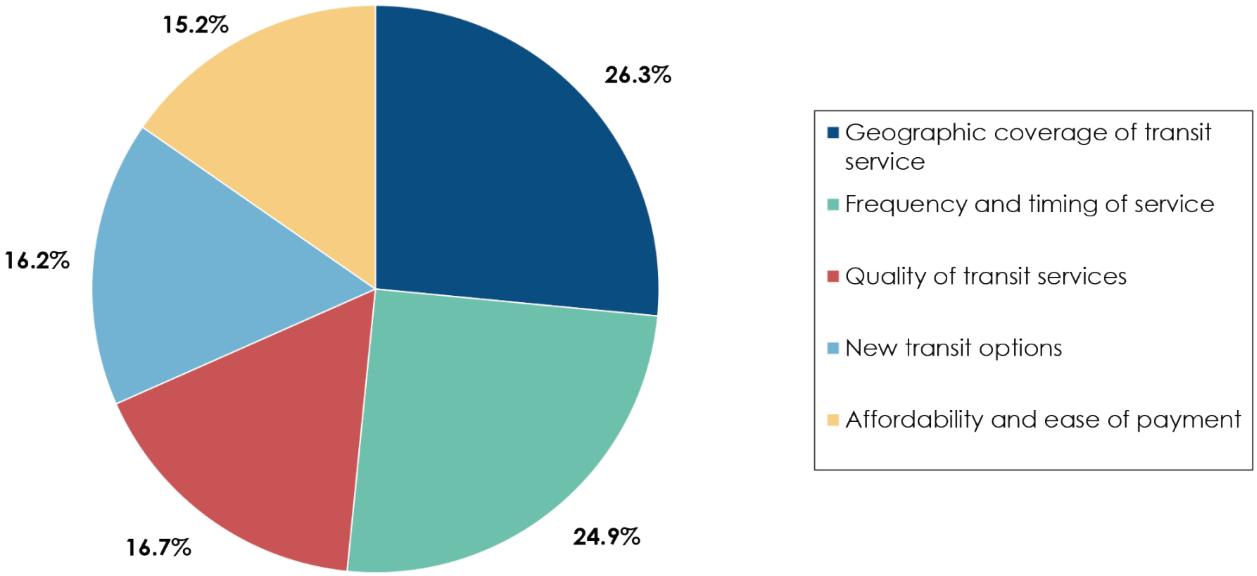


Figure A.5 shows the average budget allotments given to each of the five categories among frequent transit users. As with the total population of survey respondents, geographic coverage, frequency and timing, and quality of transit services received the three largest shares of the budget on average.

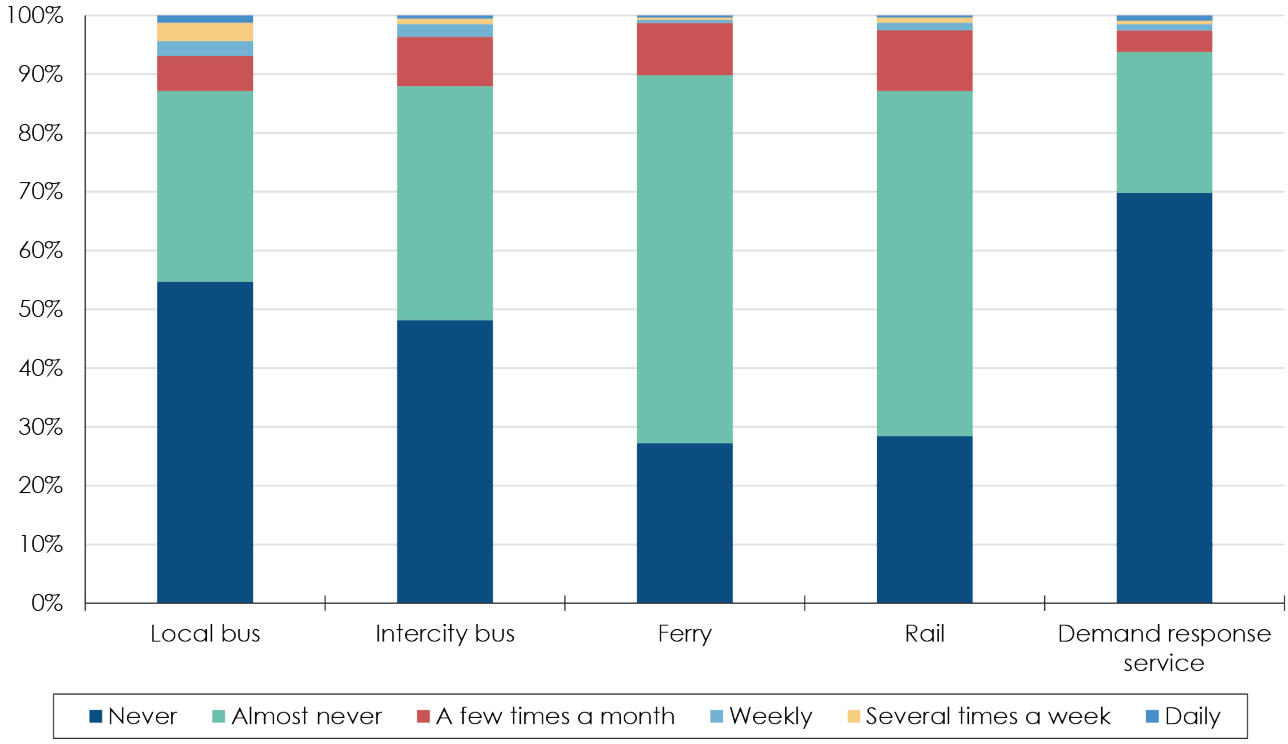
Figure A.5 Average Percentage of Budget Allotted across Transit Spending Categories among Frequent Transit Users



A.2.2 Transit Use, Value, and Purpose

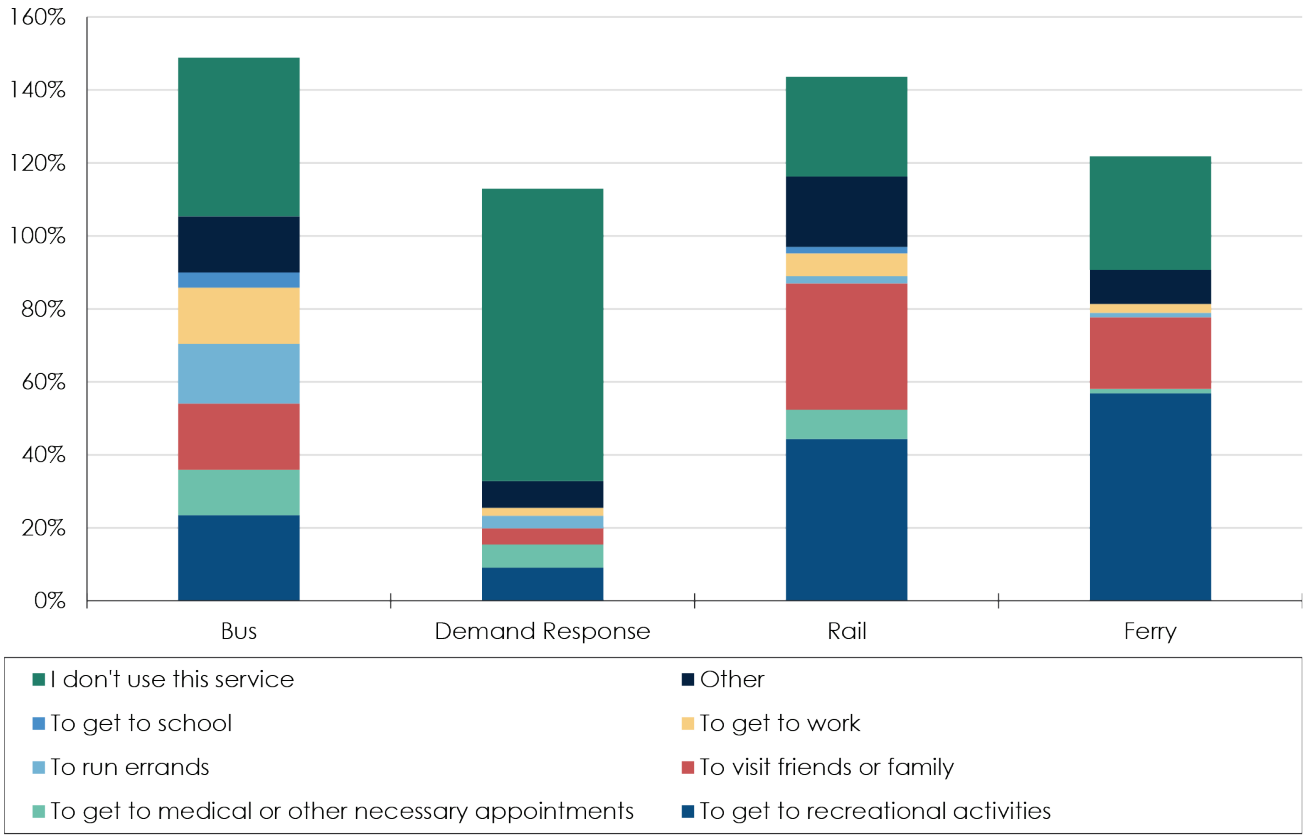
Survey participants were asked to provide input on their transit usage and trip purpose. Most respondents use transit very infrequently regardless of mode. Demand response services are used least among respondents, with nearly 70 percent indicating that they never use the service. Local bus service has the highest percentage of respondents who use the service at least weekly at 6.9 percent, nearly double the rate of intercity bus service, which is the second most-frequently used service at 3.7 percent. Figure A.6 shows the distribution of transit use frequency across all modes.

Figure A.6 Frequency of Transit Use by Mode, Total Responses



Survey participants were asked to identify the purposes for which they take transit across bus, rail, ferry, and demand response. This question focuses on what sorts of travel needs are being met by transit, including employment, medical care, education, and social or recreational activities. Participants were also able to indicate that they do not use the transit mode, which represented a plurality or majority of responses for bus and demand response modes. For all four modes, respondents were asked to select all options that applied to them, so percentages for responses can total above 100 percent. Figure A.7 shows the frequency of transit trip purposes for all respondents across the four transit modes.

Figure A.7 Trip Purposes for Transit Modes, All Respondents

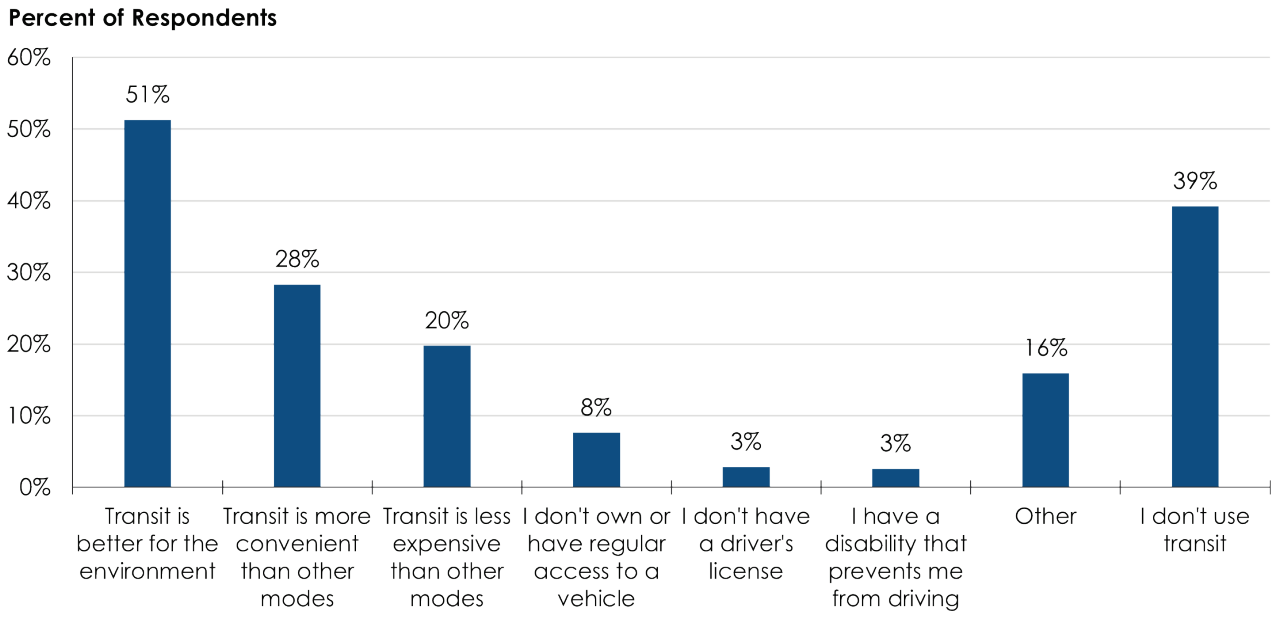


Discounting respondents who do not use transit, the most common trip purpose across all modes is accessing recreational activities, at 23 percent of all responses for bus, 9 percent for demand response, 44 percent for rail, and 57 percent for ferry. The second-most common trip purpose for all modes was visiting friends or family, with 18 percent of responses for bus, 4 percent for demand response, 35 percent for rail, and 20 percent for ferry. Getting to medical or other necessary appointments accounted for 12 percent of bus trips, 6 percent of demand response trips (the second most popular trip purpose specified for this mode after recreational activities), 8 percent of rail trips, and 1 percent of ferry trips.

The high percentage of responses for recreational trips may be due to the high percentage of respondents aged 65 or older. This age group represents 38 percent of survey respondents, but 21 percent of the state population. Older residents are more likely to use public transportation to access medical services and recreational destinations than the average respondent. Additionally, trip purposes are likely skewed by the fact that 56 percent of survey respondents earn at least $75,000, compared to the median state salary of $59,489.

Respondents were also asked why they use transit, which focuses on the values that users assign to transit relative to other modes of transportation. Here, too, respondents were asked to select all responses that applied, resulting in a total percentage greater than 100 percent. Figure A.8 shows the distribution of reasons for using transit among all survey respondents.

Figure A.8 Reasons for Using Transit, All Respondents



The most common reason for using transit is its environmental benefits. Another 28 percent of respondents use transit because it is more convenient than other modes, and 20 percent use transit because it is less expensive. It is important to note that 14 percent of respondents experience barriers that prevent them from driving.

A common theme throughout the survey comments was an emphasis on expanding transit and increasing the use of low- and zero-emission vehicles in transit service to reduce the environmental impact of Maine's transportation network. Many respondents indicated that they would prefer not to drive but feel that they must do so due to a lack of options in their area, specifically with regard to transit gaps in the Midcoast region, Washington County, and Aroostook County.

B. TRANSIT PROPENSITY ANALYSIS

The transit propensity analysis informs the State Transit Plan Needs Assessment. An overview of this analysis is illustrated in Figure B.1. The transit propensity analysis process identifies geographies with high need for transit that do not have current transit service, based on origin-destination (O-D) travel data from location-based services data.

Figure B.1 StreetLight Data/Transit Propensity Analysis Process

The analysis relies on three primary data sources:

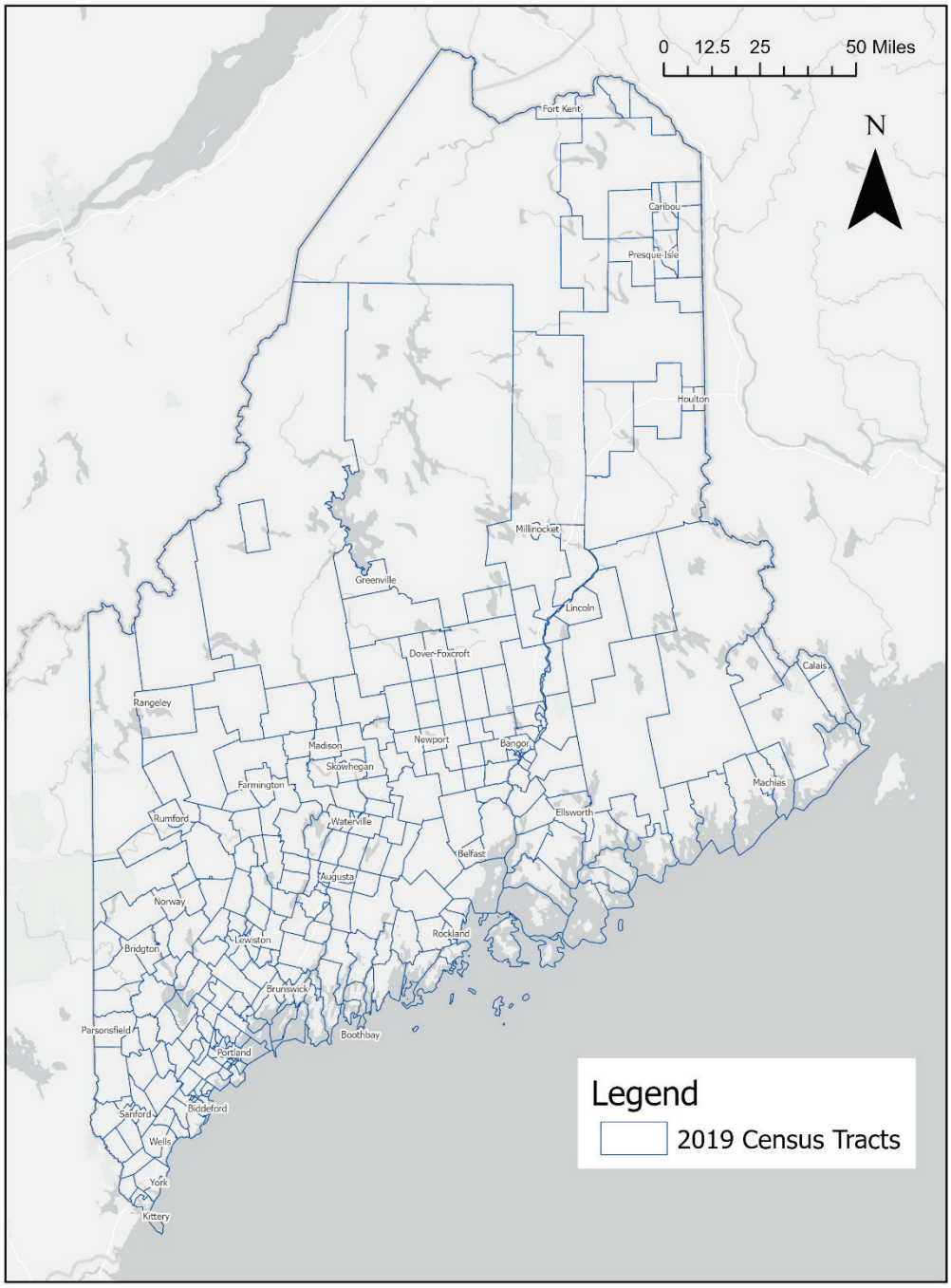
- **StreetLight Data**, which draws on proprietary machine learning algorithms to measure travel patterns by geography and time based on location-based services (LBS) data, primarily from cell phones.
- **U.S. Census and American Community Survey**, from the U.S. Census Bureau, the premier source for detailed population and housing information about our Nation.
- **Transit Agency Ridership Data** collected from each agency during the Existing Conditions Assessment phase of this Transit Plan process.

B.1 Create Origin—Destination Trip Matrix of All Travel

Census Tracts were chosen as the level of geography for this analysis. Based on the 2010 Census, Maine has 358 Census Tracts across the state. Census Tracts are small, relatively permanent statistical subdivisions of a county, which each average about 4,000 inhabitants.[1] The Tracts are based on the number of inhabitants rather than land area, so Tracts are much larger in land area in Maine's rural regions than in more populated areas. A map of Maine Census Tracts is shown in Figure B.2.

[1] https://www2.census.gov/geo/pdfs/education/CensusTracts.pdf

Figure B.2 Census Tracts in Maine



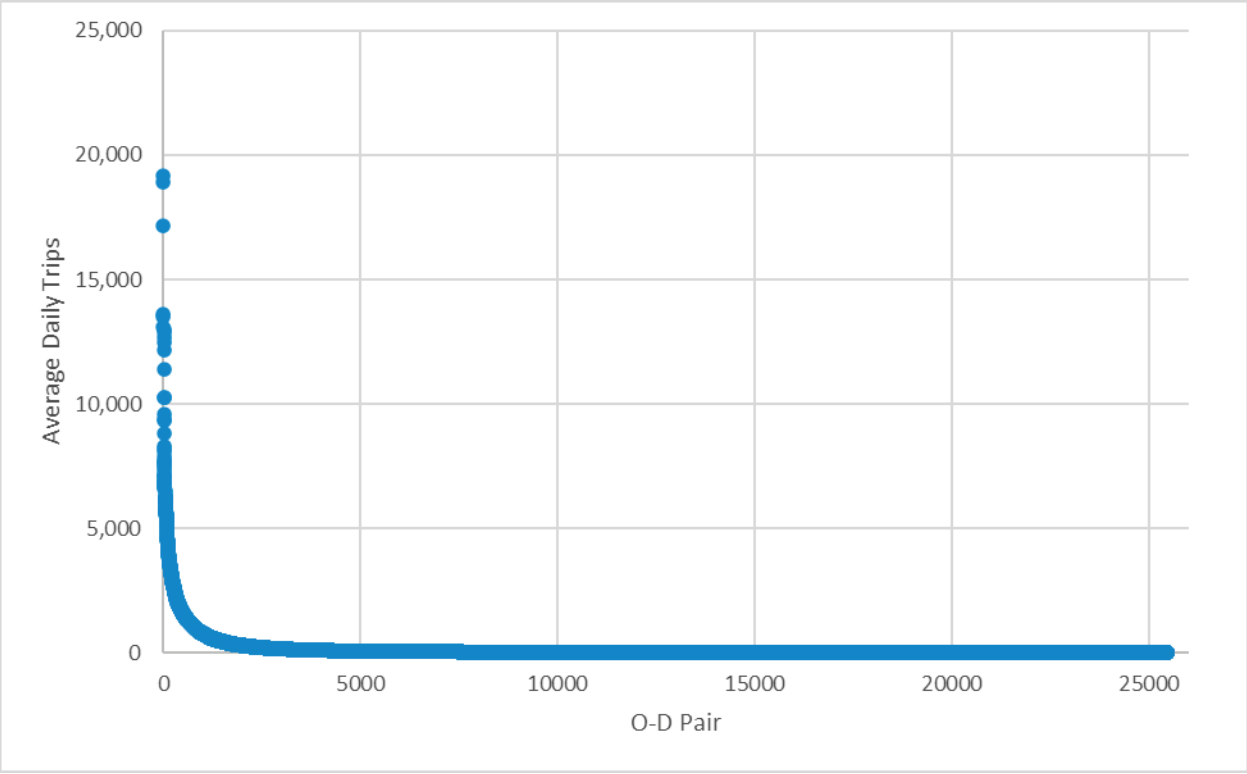
Travel data from StreetLight was organized into an O-D matrix to show travel between and within each of the 358 Census Tracts. The data were consolidated to be bi-directional; for example, the travel volumes from zone 1 to zone 2 and from zone 2 to zone 1 were added together. This resulted in a matrix with 64,261 entries. Of these entries, approximately 60 percent (38,807 pairs) of potential O-D pairs had zero average daily trips. This means that no

one traveled between that exact origin and destination pair according to StreetLight data and it is only a potential O-D pair. Conversely, 25,454 O-D pairs had at least one daily trip.

In total, the StreetLight data reported 3,377,528 average daily vehicle trips across the entire state for 2021, down from 3,932,147 average daily vehicle trips in 2019. The O-D pair with the highest volume was travel within zone 92, in Bangor, with 19,176 average daily trips. The highest amount of travel between two Census Tracts, rather than within a single Tract, is between zone 263 and zone 294, South Portland and Scarborough, with 12,866 average daily trips. Among O-D pairs with any travel between them, an average of daily 133 trips occurred.

In total, 14 O-D pairs had over 10,000 average daily trips; 90 O-D pairs had between 5,000 and 10,000 average daily trips; 797 O-D pairs had between 1,000 and 5,000 average daily trips; and 1,369 O-D pairs had between 500 and 1,000 average daily trips. This distribution is illustrated in Figure B.3.

Figure B.3 Distribution of Average Daily Trips by O-D Pair



B.2 Demographics

To identify characteristics of travelers, average socio-demographic data of travelers between each O-D pair were attached to the trips of that O-D pair. These data were collected from either StreetLight outputs or ACS datasets, with a preference to use StreetLight outputs when available due to their closer attachment to the actual ridership data.

StreetLight data are based on demographics of travelers' home locations, whereas ACS data are based on information of origin and destination Census Tracts. Since StreetLight tracks cellphones and where travelers stay during the nighttime, it can obtain travelers' socio-demographic information from the Census Tracts where they reside.

When the source of data is ACS, since O-D data have been consolidated to be bi-directional, socio-demographic information are the result of a weighted average between both the origin and destination Census Tracts. The socio-demographic data included in this analysis are presented in Table B.1.

Table B.1 Socio-Demographic Data

Data	Source
Percent of travelers whose household income was less than $35,000	» StreetLight
Percent of population that is not "white, non-Hispanic"	» StreetLight
Percent of travelers 65 years or older	» 2019 ACS 5-Year Estimates
Percent of travelers with a disability	» 2019 ACS 5-Year Estimates
Percent of travelers living in zero-vehicle households	» 2019 ACS 5-Year Estimates, Tenure by Vehicles Available
Percent of travelers who are female	» 2019 ACS 5-Year Estimate
Population density of the Origin and Destination Tracts	» 2019 ACS 5-Year Estimates and GIS analysis, Census TIGER/Line Land Area

The distribution of these values is shown in the following series of maps.

Figure B.4 Percentage of Households Earning Less than $35,000 Annually

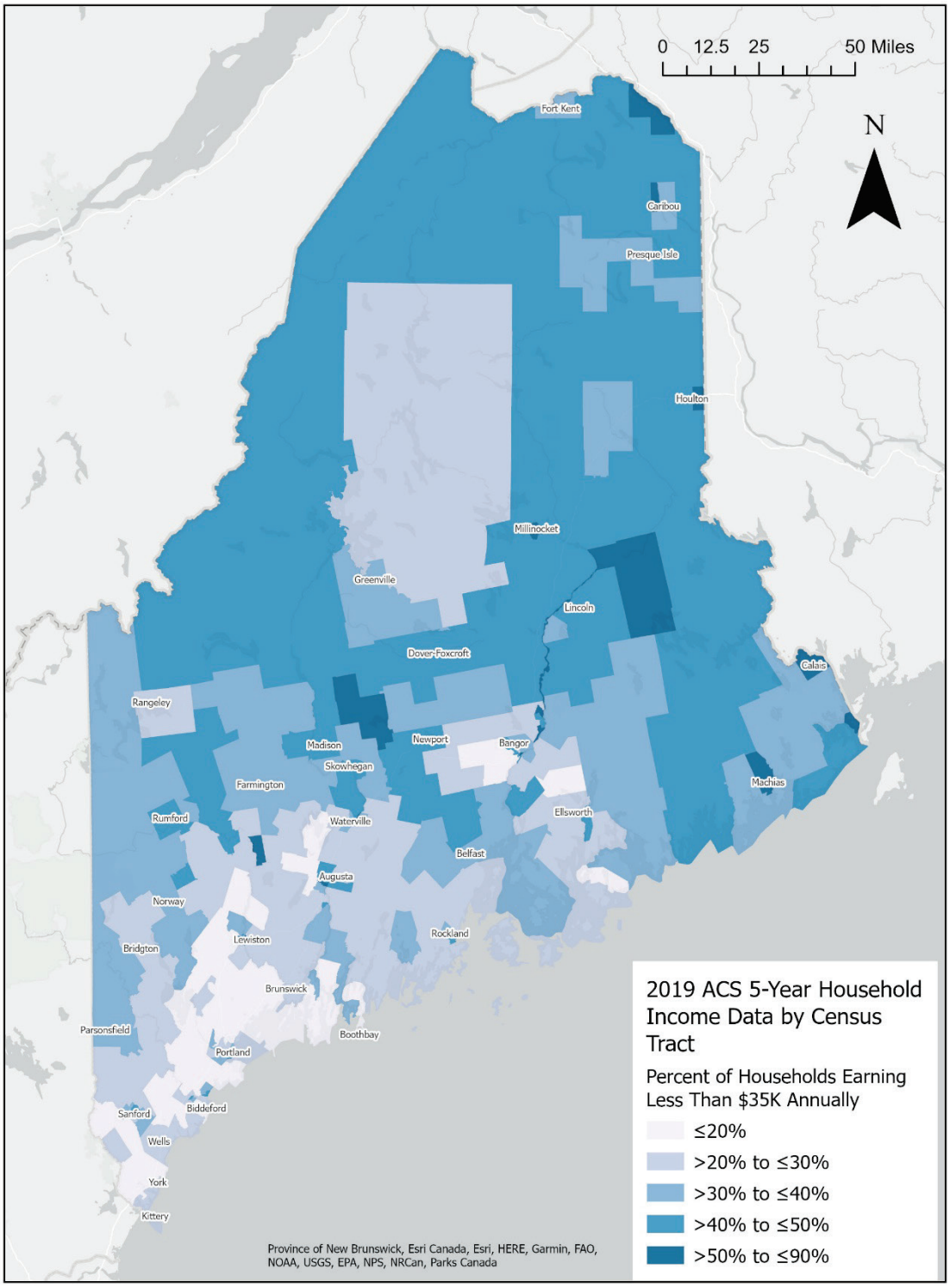


Figure B.5 Percentage of Population That is Not "White, Non-Hispanic"

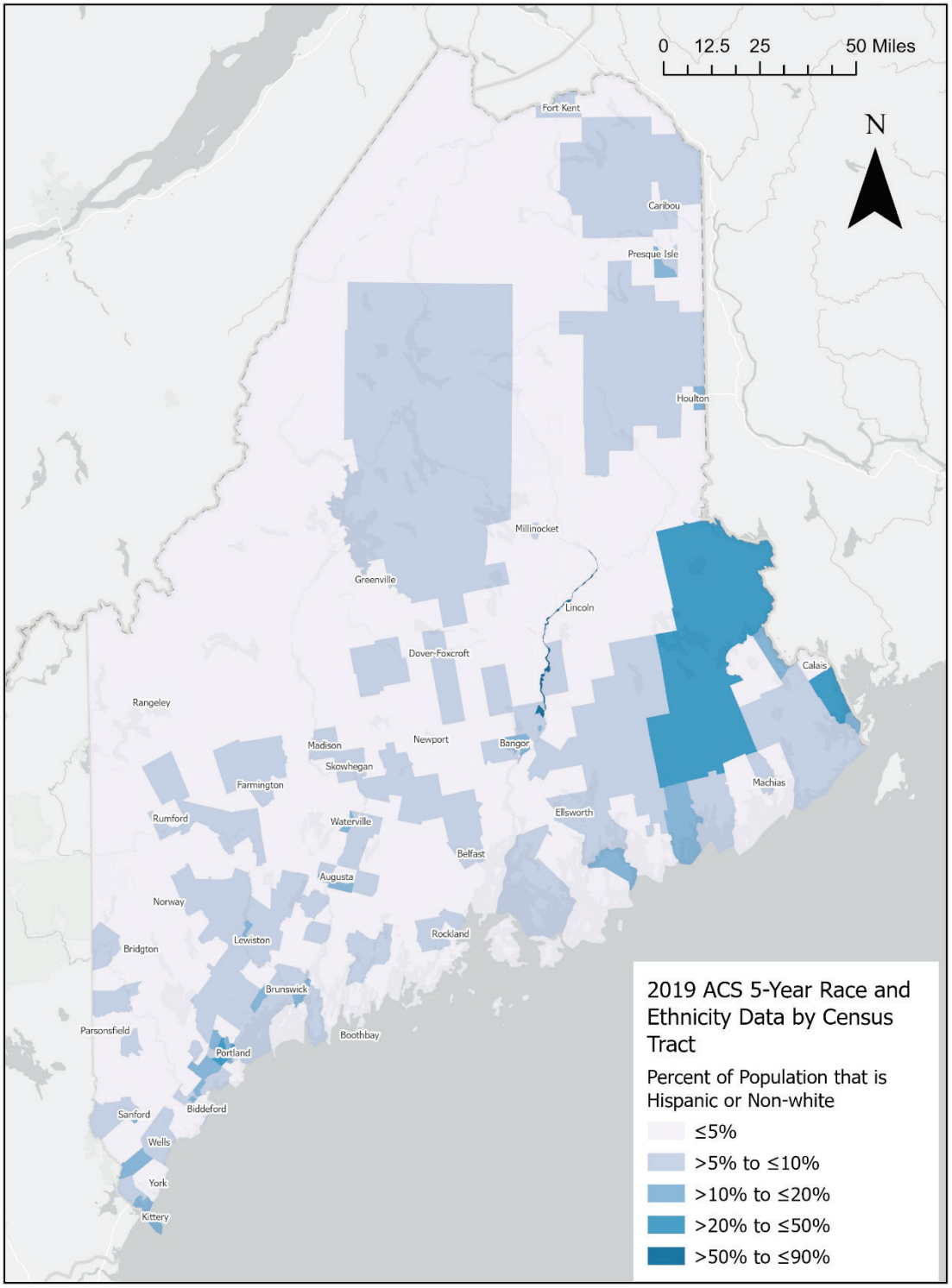


Figure B.6 Population Age 65 and Over

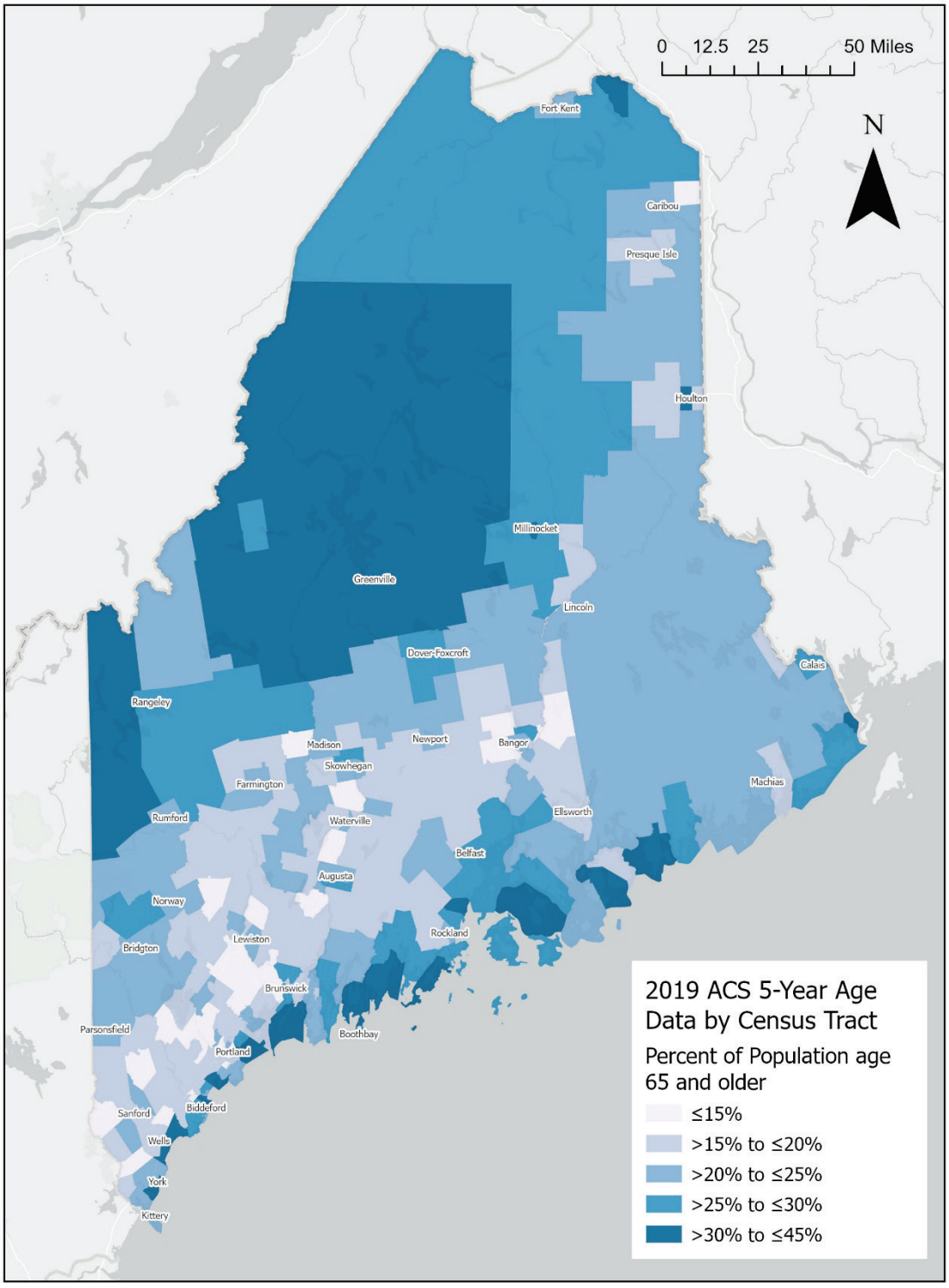


Figure B.7 Population with a Disability

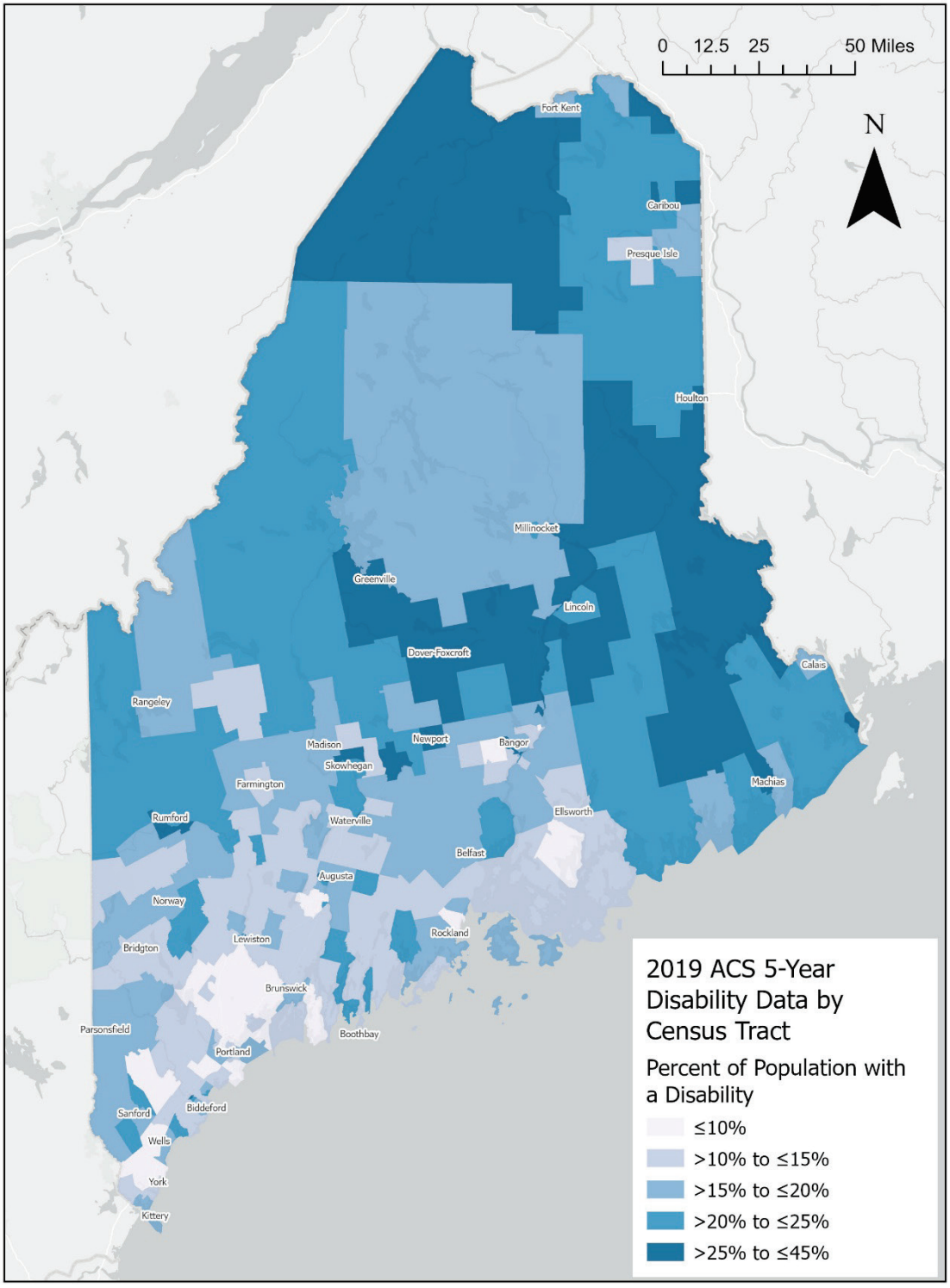


Figure B.8 Percentage of Population that is Female

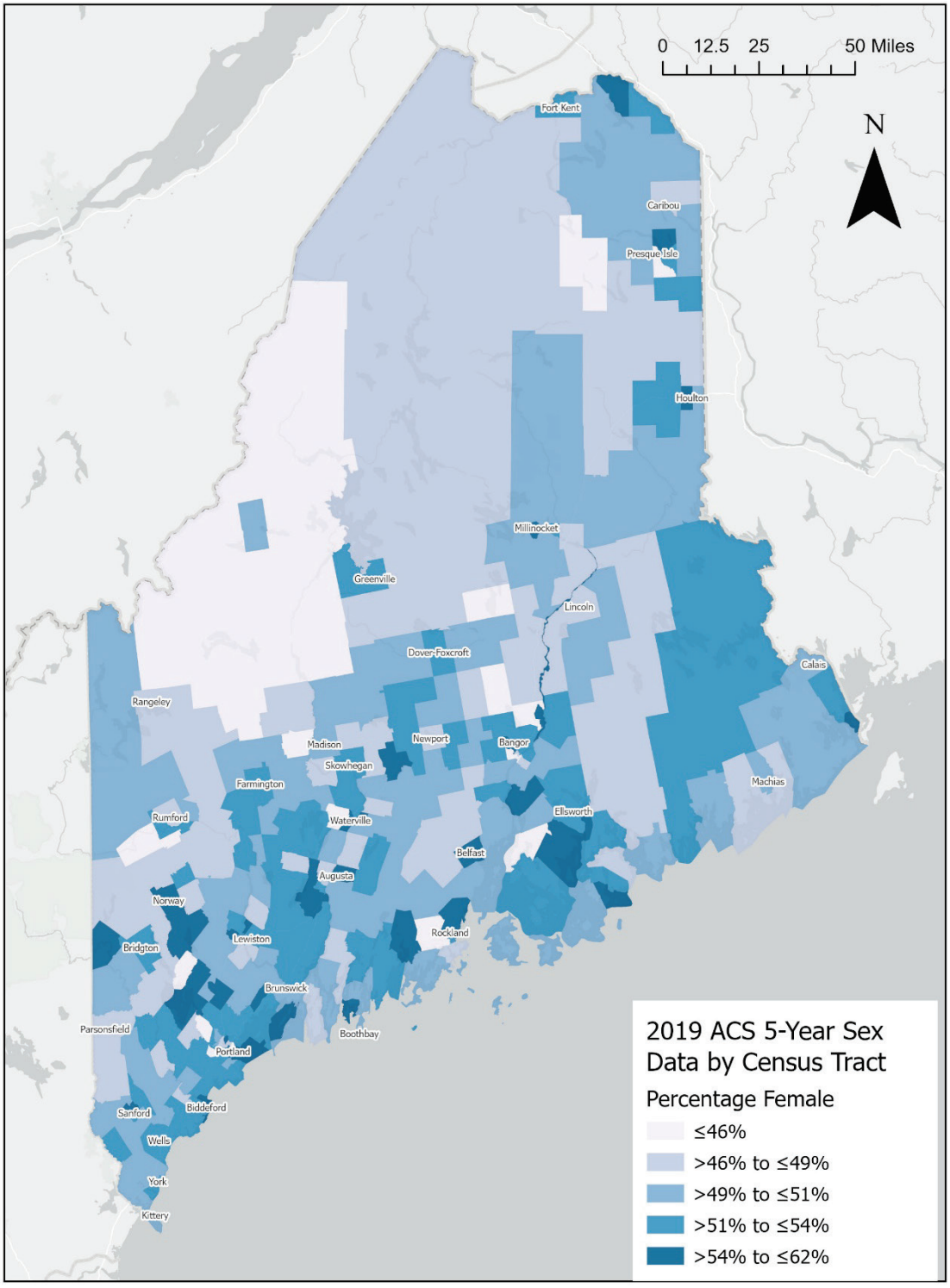
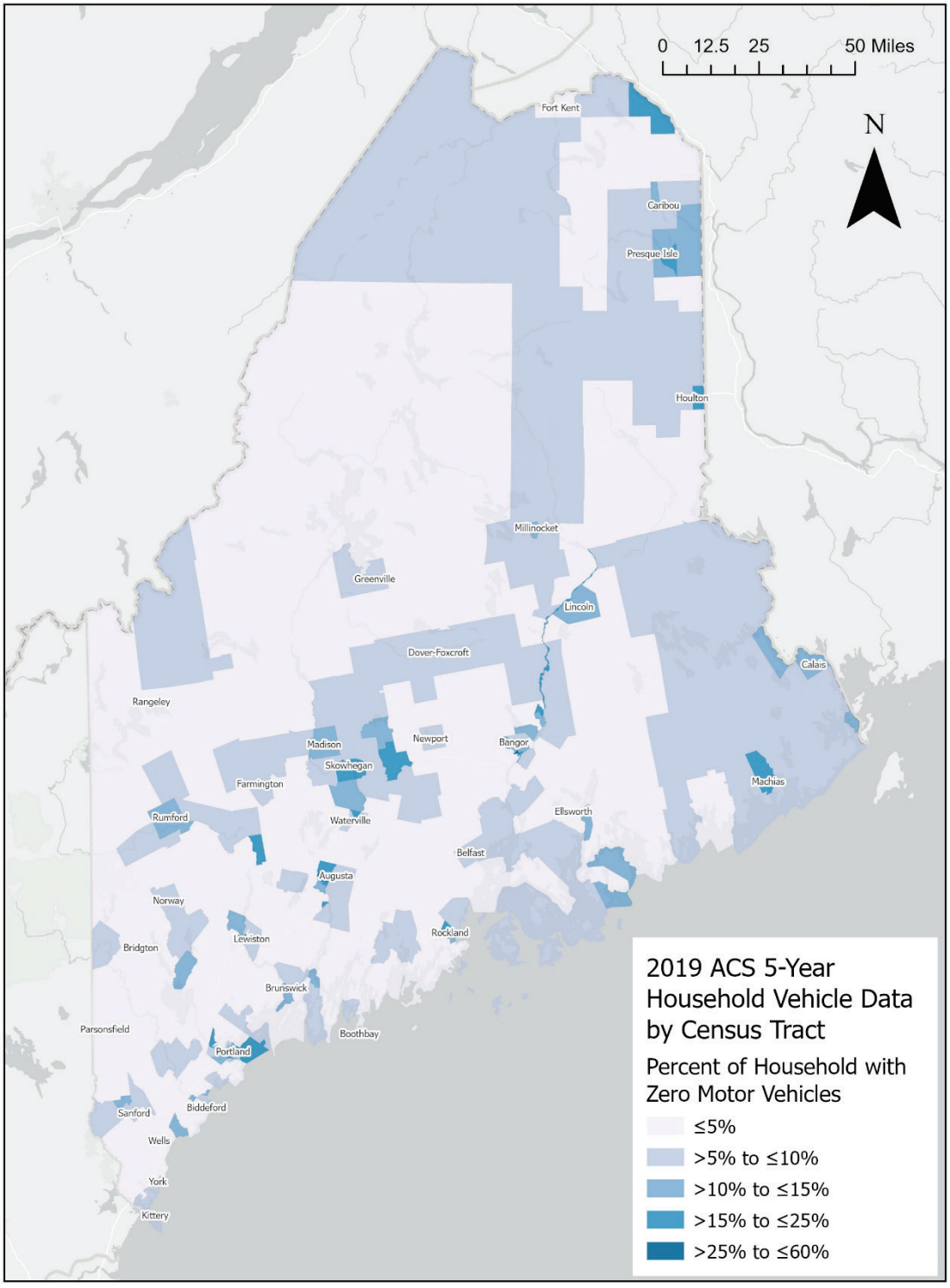


Figure B.9 Zero-Vehicle Households



B.3 Transit Propensity

B.3.1 Background

A variety of research nationally has provided insight into the different likelihoods of using public transit among various population groups. Propensity is an economic term used to measure consumer behavior, and higher transit propensities mean higher likelihoods of taking transit. A sampling of this research includes:

- Transit Cooperative Research Program (TCRP) Report 28: Transit Markets of the Future[2]
- TCRP Report 3: Workbook for Estimating Demand for Rural Passenger Transportation[3]
- TCRP Report 161: Methods for Forecasting Demand and Quantifying Need for Rural Passenger Transportation[4]
- TCRP Report 27: Building Transit Ridership[5]
- Center for Urban Transportation Research (CUTR)—Propensity For Transit Use (2012)[6]
- CUTR—Best Practices in Transit Service Planning (2009)[7]
- A Proposed Methodology for Conducting Propensity Analyses Identifying Areas of Transit Need, Robert Bush, American Public Transportation Association (APTA) (2012)[8]

2 https://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_28-a.pdf

3 https://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_03-a.pdf

4 https://www.trb.org/Publications/Blurbs/168759.aspx

5 https://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_27.pdf

6 https://www.cutr.usf.edu/wp-content/uploads/2012/08/propensity.pdf

7 https://www.nctr.usf.edu/pdf/77720.pdf

8 https://trid.trb.org/view/1224912

Transit propensity analyses have also been put into practice across the country, including in Washington, DC[9]; Nevada[10]; Charlottesville[11], VA; Los Angeles[12]; and Richmond, VA[13].

B.3.2 Included Factors

While there is no single standard methodology for determining transit propensity, the research and applications identified key factors affecting transit ridership, including:

- Population density
- Quantity of travel (number of trips, sourced from the LBS data)
- Population aged 65+ (%)
- Population with mobility limitations (%)
- Zero-vehicle housing units (%)
- Population that is not "white, non-Hispanic" (%)
- Low-income households (%)
- Female population share (%)

While several other factors have been used, this analysis focuses on these characteristics based on analysis of a consensus of approaches from the research in Section B.3.1 and data availability. Furthermore, there is no single standard process for determining the relative importance of these factors. For the purposes of the *Maine State Transit Plan*, the following weights were selected based on a review of the literature:

[9] SE/SW Mobility Vision Plan. https://ctycms.com/dc-capitol-riverfront/docs/north-south-transit-connectivity.pdf

[10] Connecting Nevada—Draft Transit Propensity Analysis and Estimate of Ridership Demand. https://www.dot.nv.gov/home/showpublisheddocument/4956/636193789055170000

[11] Transit Vision Plan for the Charlottesville Area. http://epr-pc.com/wp-content/uploads/2021/09/CTVP_Transit-Propensity-Technical-Memo_Final-20210928.pdf

[12] Developed Transit Propensity Score for Census Tracts in Los Angeles County Methodology. https://media.metro.net/projects_studies/nextgen/images/Transit_Propensity_writeup_2019-0719.pdf

[13] Assessing Richmond Transit Network Plan for Transit Oriented Development. https://wilder.vcu.edu/media/wilder/murp-studio-plans/ursp762/pdfs/fallx2fspring-2017-2018/AssessingRichmondTransitNetworkPlanforTransitOrientedDevelopment.pdf

Table B.2 Transit Propensity Weight

Factor	Weight
Population density	30
Quantity of travel	20
Zero-vehicle housing units (%)	15
Low-income households (%)	10
Population with disabilities (%)	10
Female population share (%)	5
Population that is not "white, non-Hispanic" (%)	5
Population aged 65+ (%)	5

B.3.3 Factor Scores

Each of the listed factors use different units and have different averages and distributions. To compare factors in a standardized way, each factor is converted to a standard "Z-Score," calculated using the following formula:

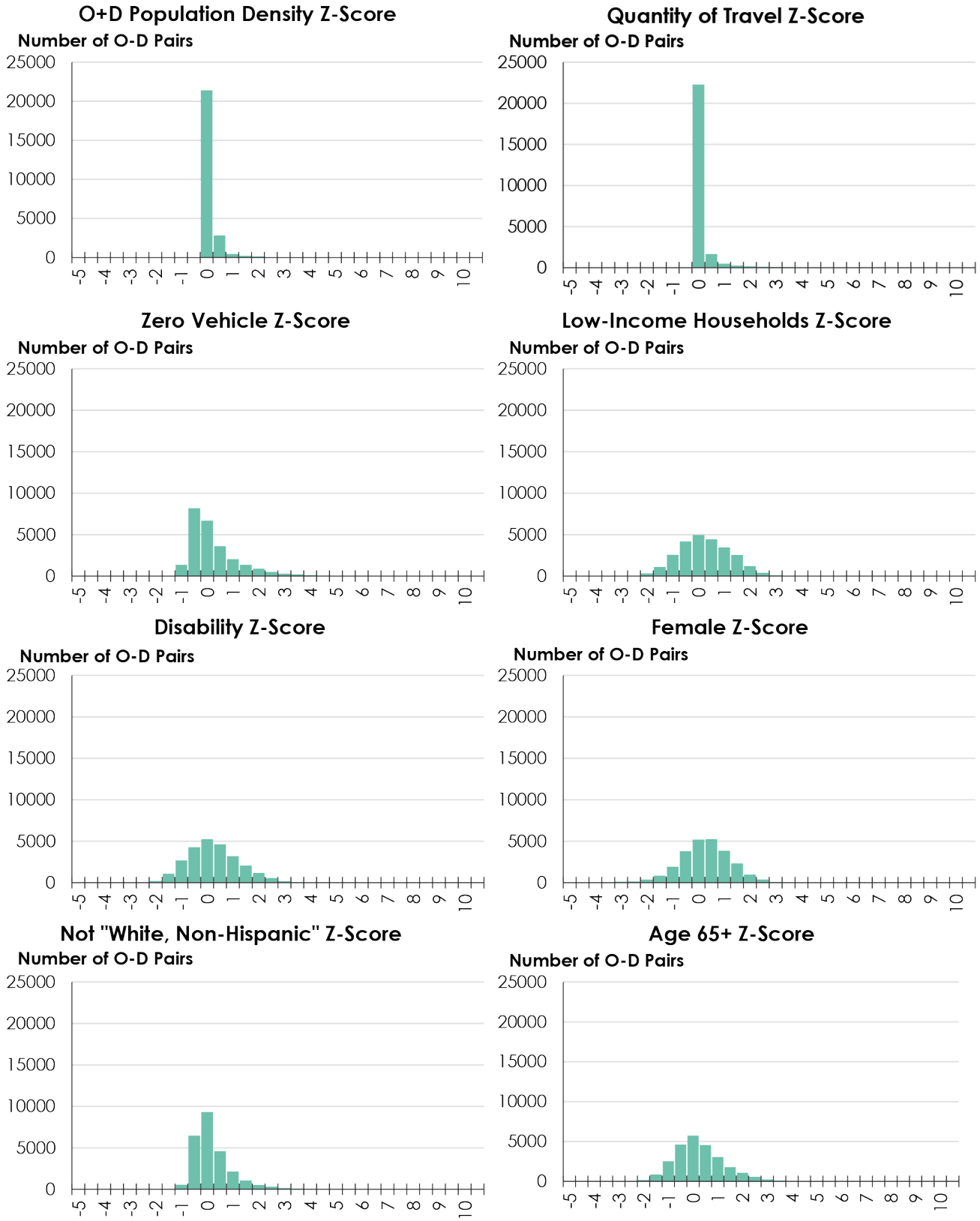
$$Z = \frac{(X - \mu)}{\sigma}$$

Where X = score, μ = mean (average), and σ = standard deviation.

A Z-Score of 0.0 for a given factor means it was equal to the average score; a Z-Score of 1.0 means it is one standard deviation higher than average; a Z-Score of -2.0 means the factor was two standard deviations below average.

The resulting distribution of scores for each factor are shown in the following figures:

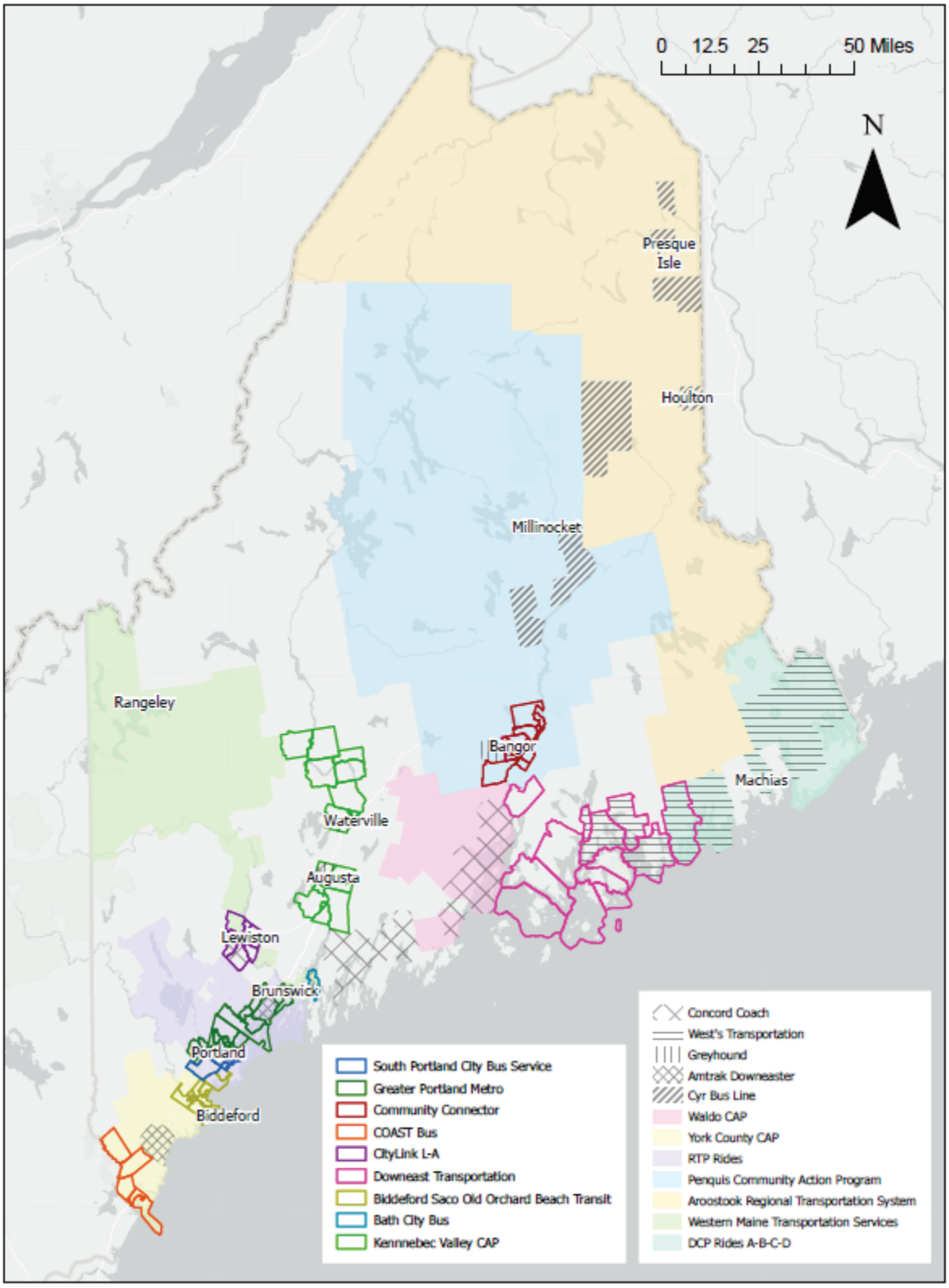
Figure B.10 Distribution of Z-Scores for Transit Propensity Components



B.4 Current Transit Service

The locations of bus routes are not currently published in a consistent manner and format amenable to analysis, such as geographic information system (GIS) shapefiles, a general transit feed specification (GTFS) format, or something similar. As a substitute, Cambridge Systematics created a shapefile and tagged each Census Tract in the state with each transit agency operating in that area. This process was based on maps or descriptions of service areas provided on agency websites or other readily available sources. These service areas are shown in Figure B.11.

Figure B.11 Service Areas of Transit Agencies in Maine



While some form of transit serves much of the land area and population of the state, this analysis focuses on the location of scheduled, fixed-route services. These include all Urban Fixed Route Service, all Small Urban and Regional Systems, and KVCAP's Transit Service which serves the Augusta and Waterville areas.

B.4.1 Overall Transit Propensity Scores

The transit propensity analysis generated a ranking of the top O-D Pairs by Transit Propensity Score. These results, shown in Figure B.12, include trips of very long distances that are not easily served by public transit. This includes long inter-city trips, such as between Portland and Lewiston/Auburn, Portland and Augusta/Waterville, and Augusta/Waterville and Lewiston/Auburn. There are also many trips from Waterboro, Stoneham, and Rumford and other municipalities in western Maine to these cities.

To limit the analysis to the O-D pairs that might more reasonably be served by public transit, any O-D Pair with a StreetLight-reported average length of 25 miles or more, or any Census Tract centroid-to-centroid distance of 50 miles or more, was excluded. The remaining top 1,000 O-D Pairs are shown in Figure B.13.

Many of these O-D Pairs are already directly served by a single transit agency. To help understand which areas with high Overall Transit Propensity are not being served, the trips beginning and ending within the service area of one of the nine larger transit agencies in the state were filtered out. The remaining top 1,000 O-D Pairs are shown in Figure B.14.

Figure B.12 Top 1,000 O-D Pairs in Maine based on Overall Transit Propensity

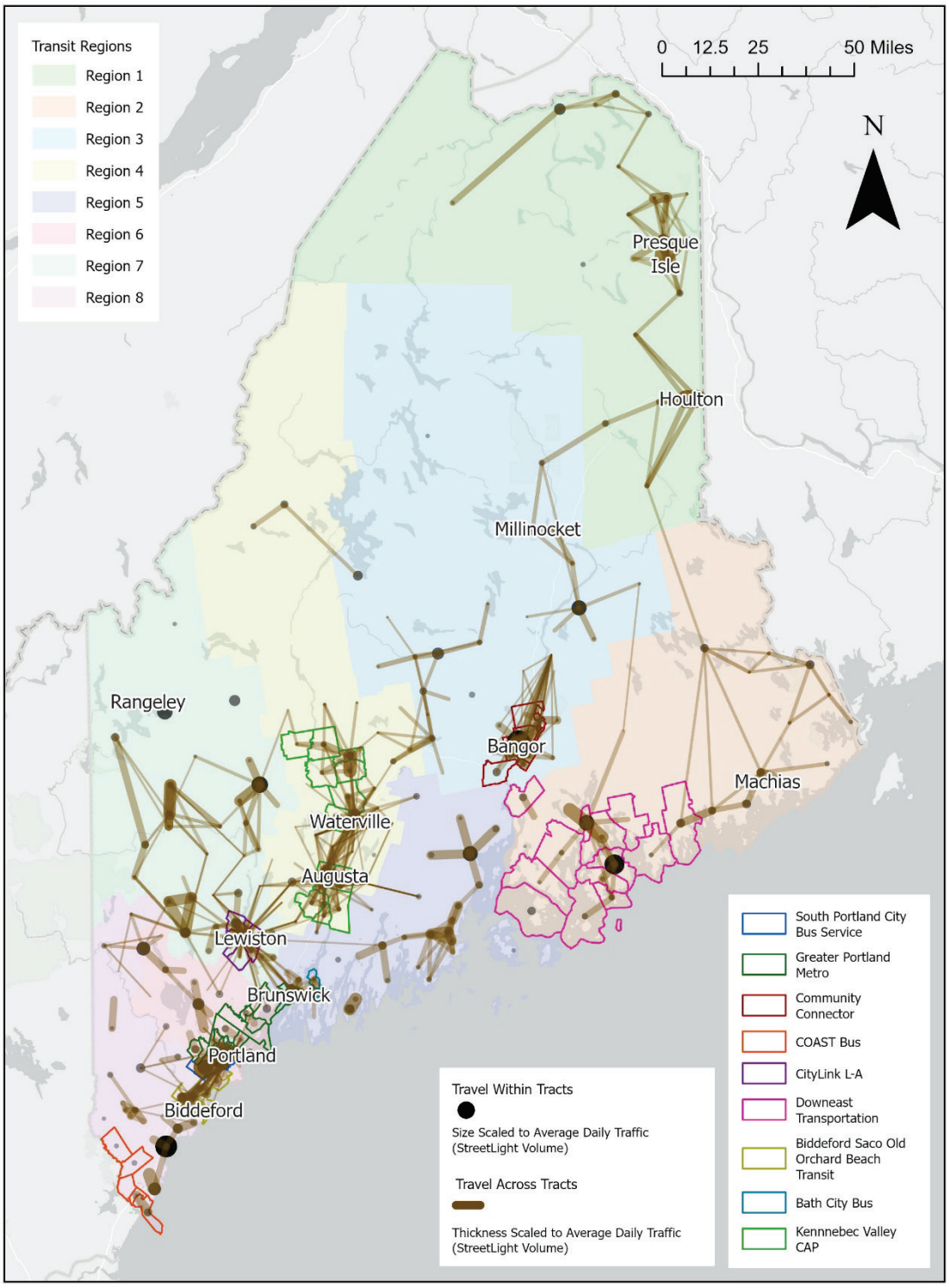


Figure B.13 Top 1,000 O-D Pairs Filtered by Distance based on Overall Transit Propensity

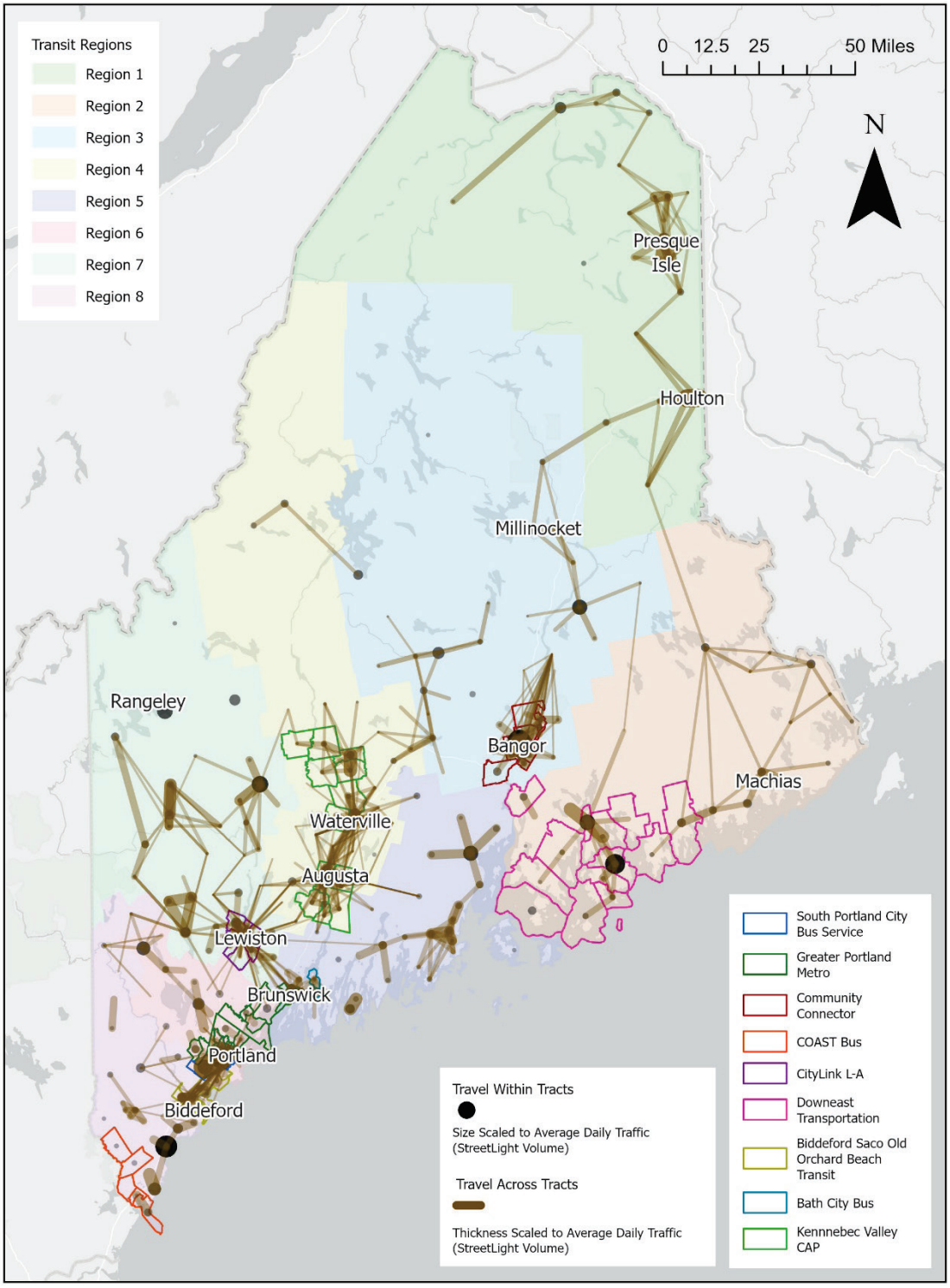
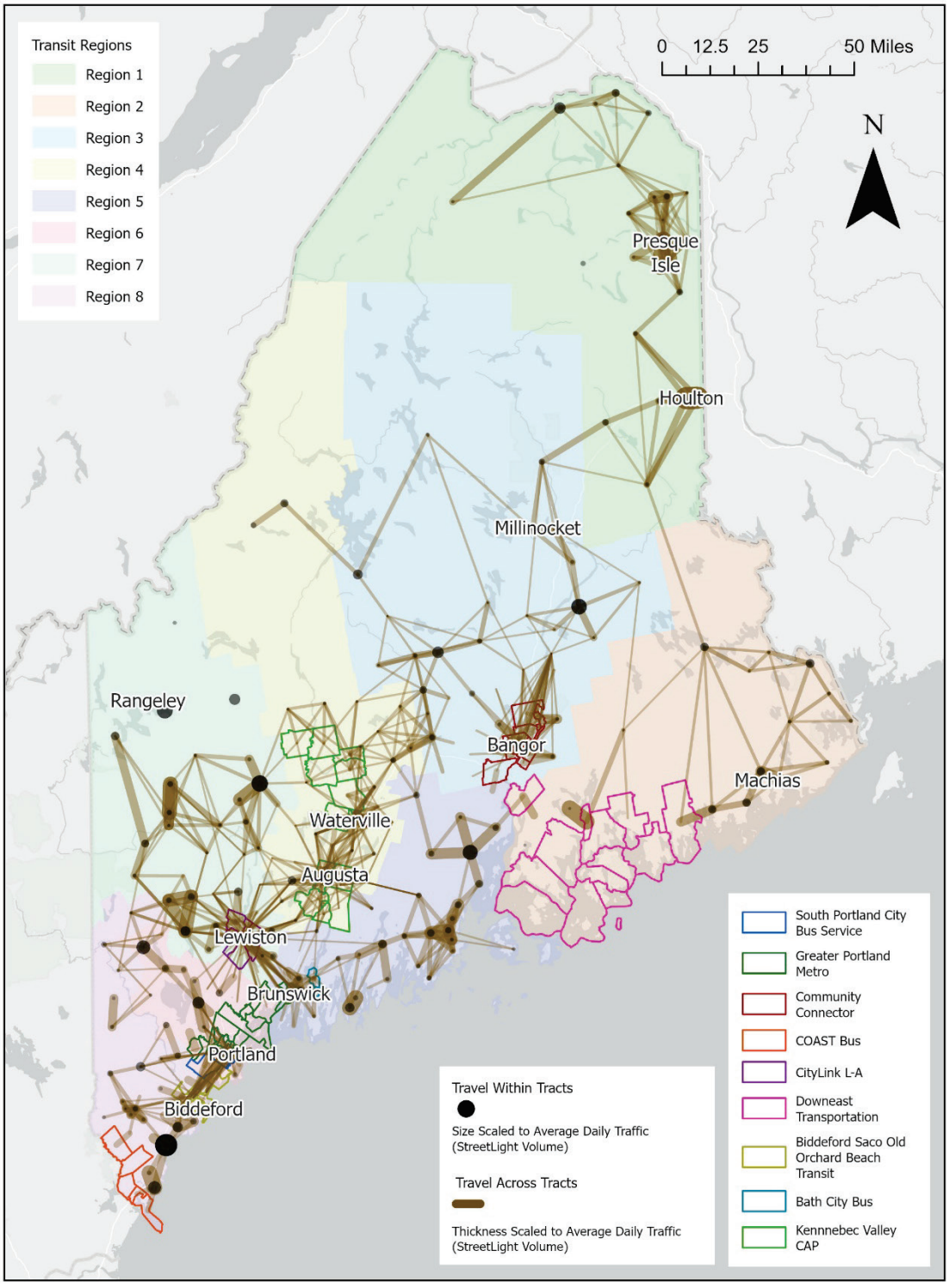


Figure B.14 Top 1,000 O-D Pairs Filtered by Distance and Existing Transit Service based on Overall Transit Propensity



Detailed versions of Figure B.14 follow for the areas surrounding Augusta, Bangor, Lewiston/Auburn, the Midcoast, and Portland.

Figure B.15 Top 1,000 O-D Pairs Filtered by Distance and Existing Transit Service based on Overall Transit Propensity (Augusta zoom)

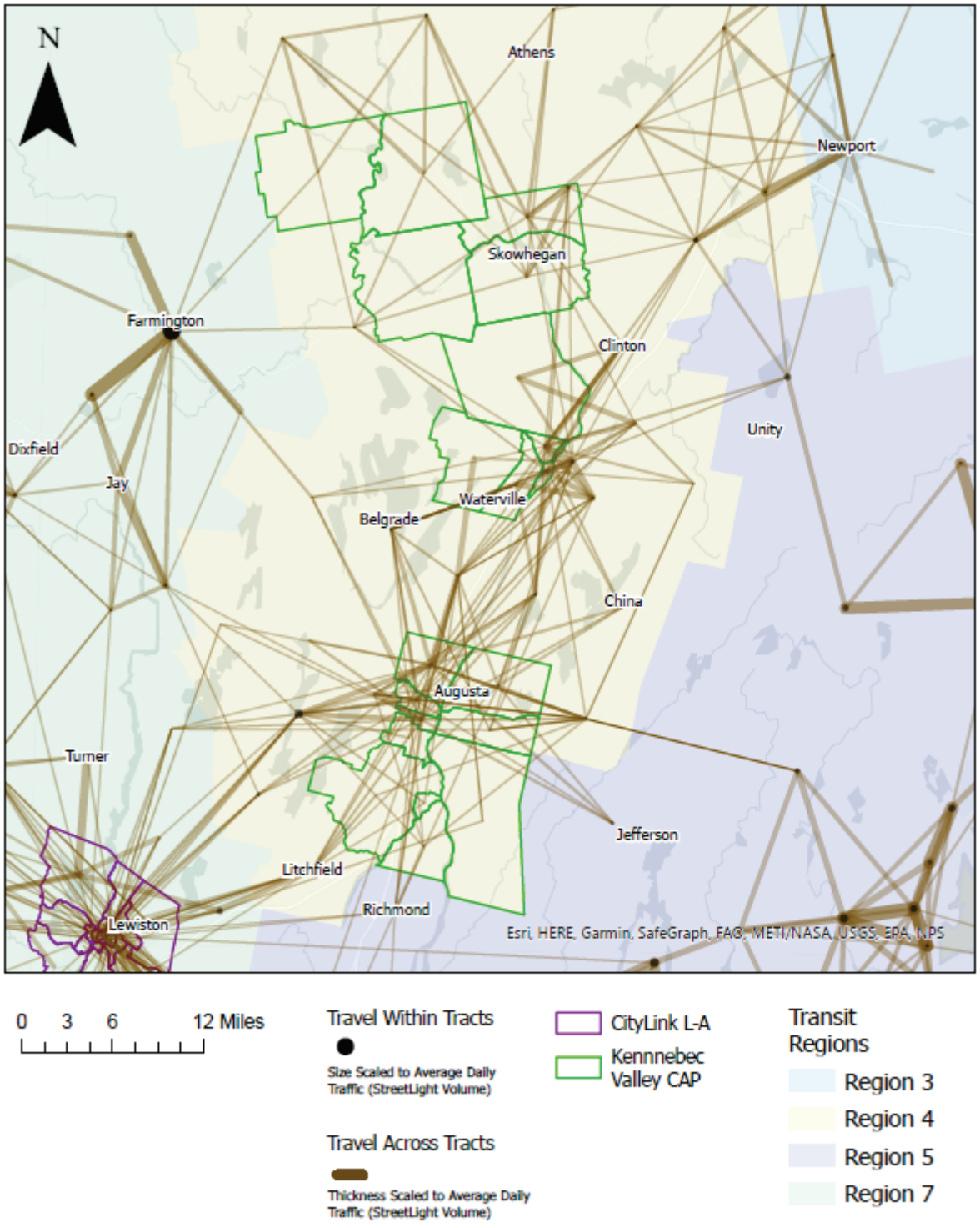


Figure B.16 Top 1,000 O-D Pairs Filtered by Distance and Existing Transit Service based on Overall Transit Propensity (Bangor zoom)

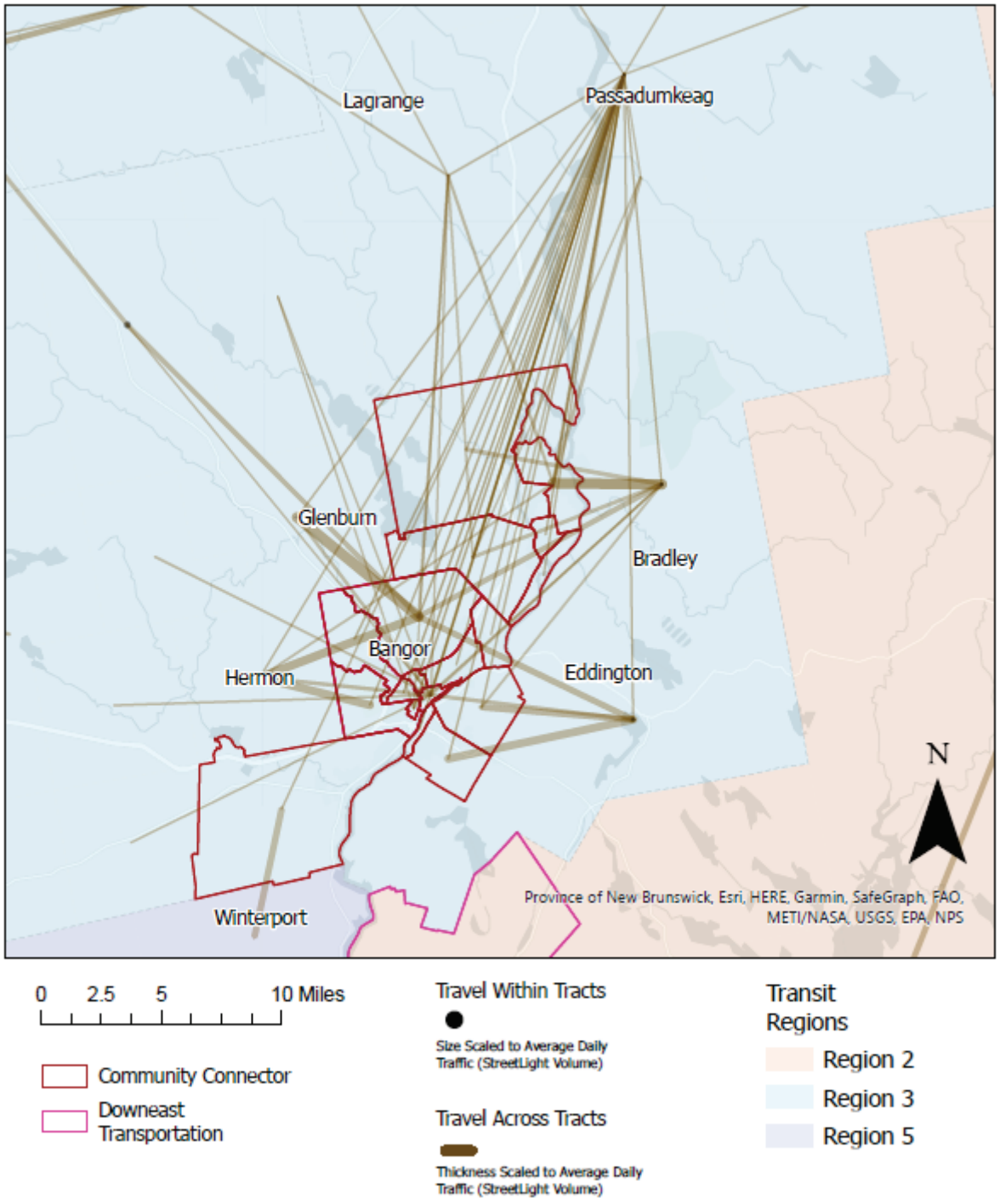


Figure B.17 Top 1,000 O-D Pairs Filtered by Distance and Existing Transit Service based on Overall Transit Propensity (Lewiston/Auburn zoom)

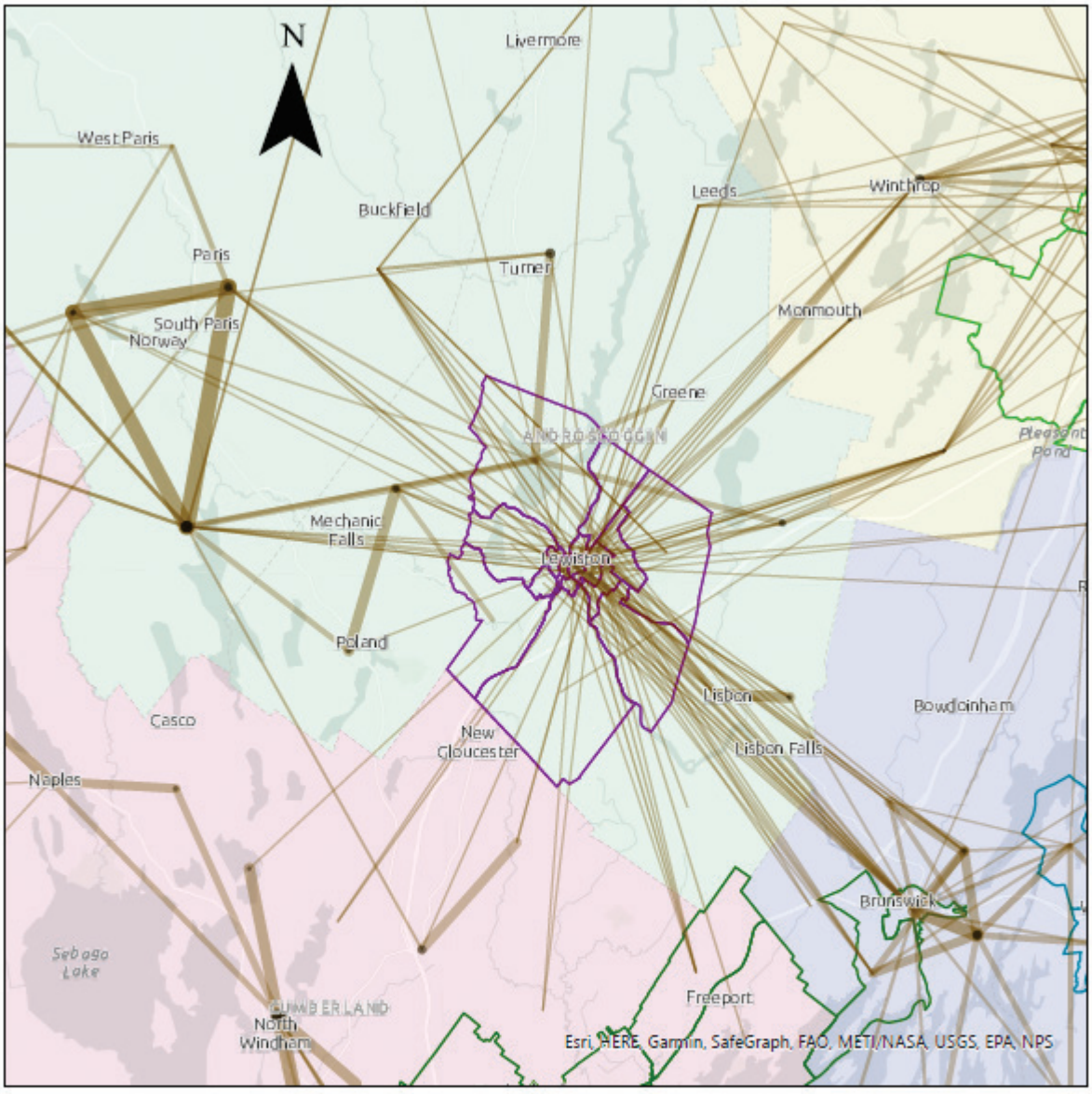


Figure B.18 Top 1,000 O-D Pairs Filtered by Distance and Existing Transit Service based on Overall Transit Propensity (Midcoast zoom)

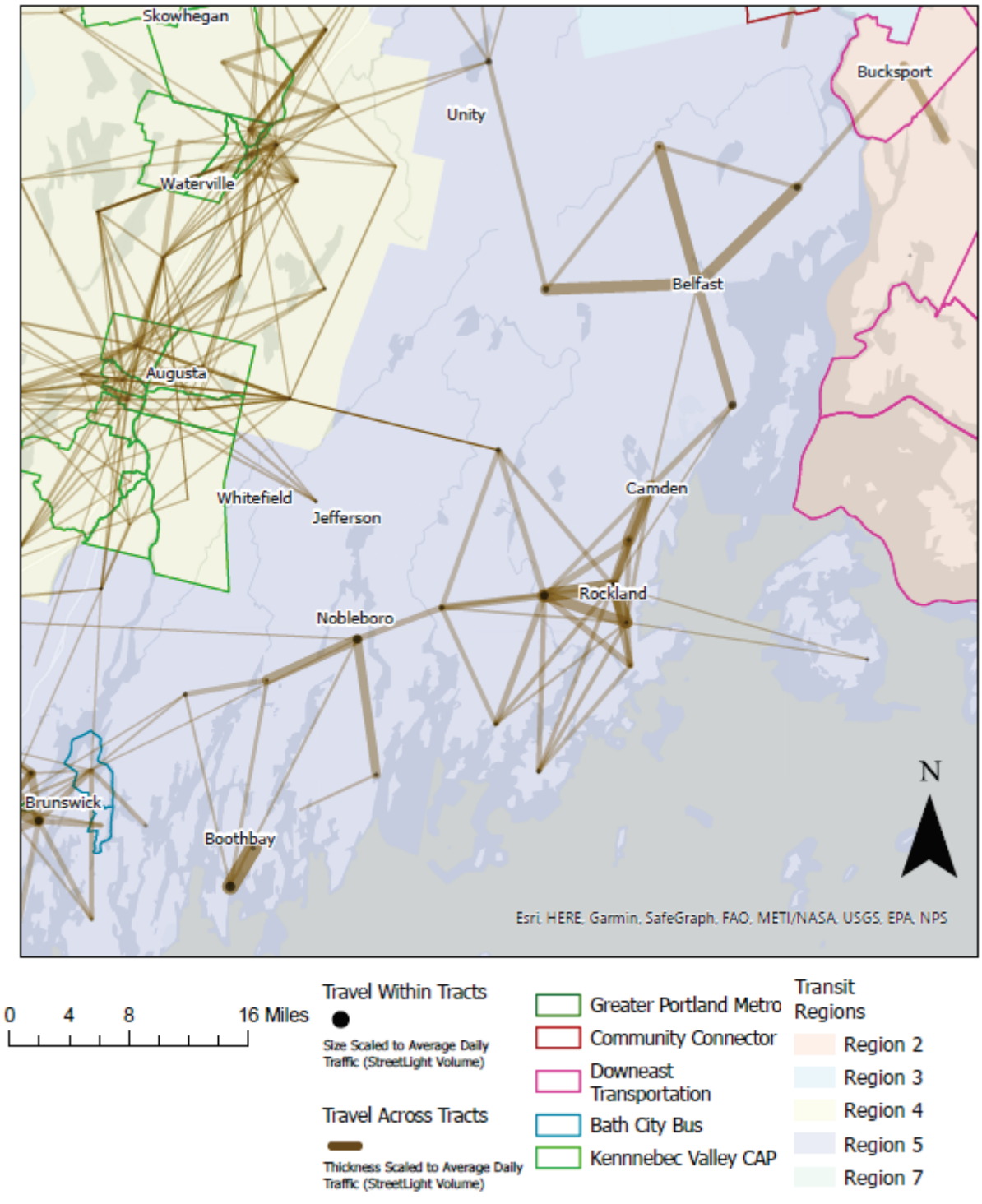
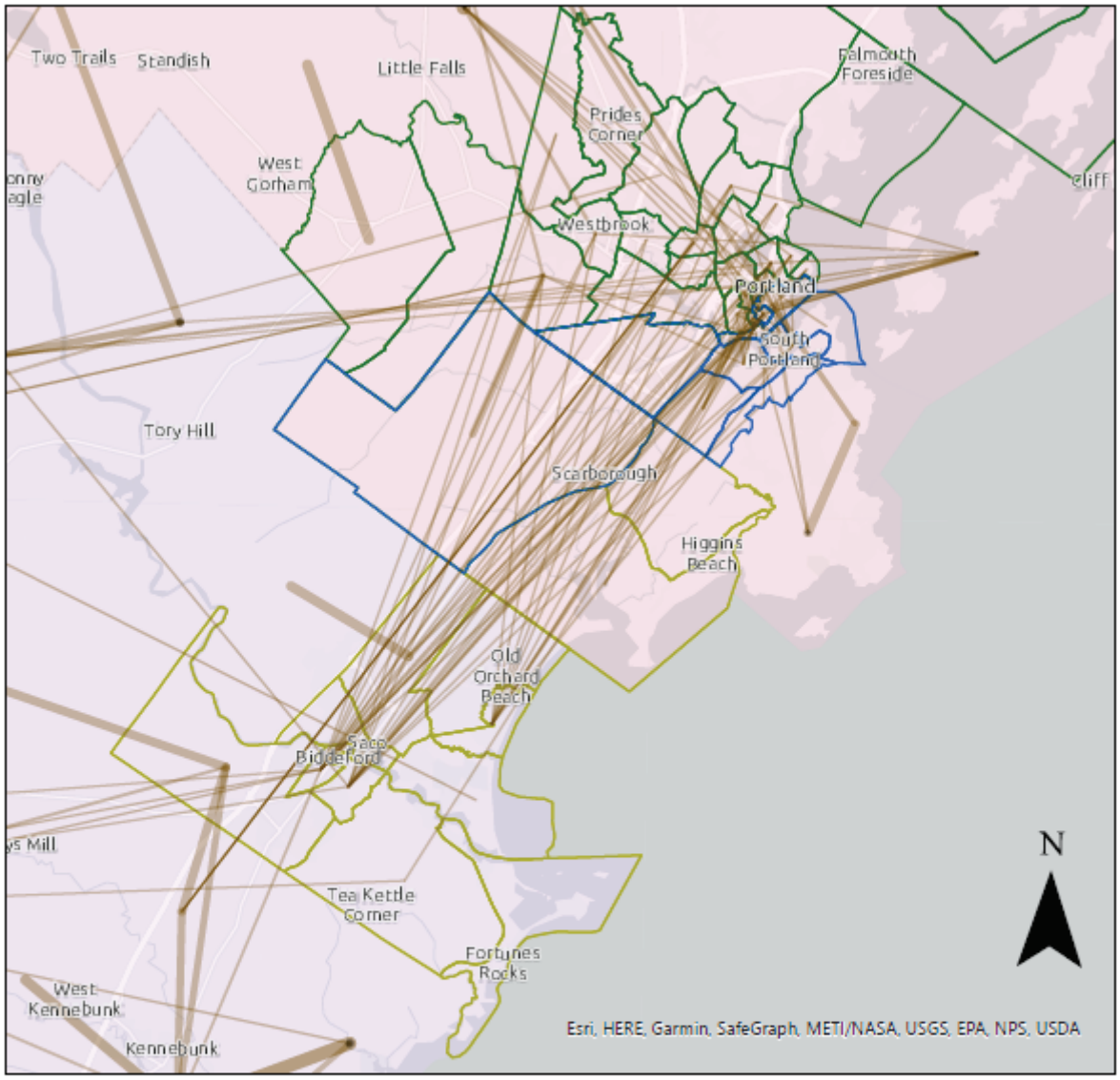


Figure B.19 Top 1,000 O-D Pairs Filtered by Distance and Existing Transit Service based on Overall Transit Propensity (Portland zoom)



B.4.2 Rural Transit Propensity Scores

The overall transit propensity score has a high weighting of the population density factor, at 30 percent of the overall score. Further, the distribution of population density in Maine Census Tracts is very skewed and unbalanced: 67 of the over 25,000 O-D pairs with non-zero travel volumes have population densities 10 or more standard deviations higher than average. This means that O-D pairs near the average population density for the state receive a much lower Z-Score than these highly dense areas and subsequently a much lower overall transit propensity score as well since population density is 30 percent of the score.

The combination of high weighting and high skew of the population density component of the overall transit propensity score can mask some of the transit needs for Maine's rural population where population density is close to or below the state average. Therefore, the rural transit propensity score was developed, an alternative version which has the same relative weights for all factors, except for weighting the population density factor at zero. Removing population density as a component of the score reveals more transit demand outside of the state's urban centers.

The rural transit propensity score identifies locations that have populations with significant needs for transit service, even if that need is not effectively served by high-frequency transit routes or other transit service designed for high-density areas. The O-D Pairs with the highest Rural Transit Propensity scores are shown in Figure B.20.

As before, any O-D Pair with a StreetLight-reported average length of 25 miles or more, or any Census Tract centroid-to-centroid distance of 50 miles or more, was removed for this analysis. The remaining top 1,000 O-D Pairs using Rural Transit Propensity are shown in Figure B.21.

Again, many of these O-D Pairs are already directly served by a single transit agency. To help understand which areas with high Rural Transit Propensity are not being served, the trips beginning and ending within the service area of one of the nine larger transit agencies in the state were filtered out. The remaining top 1,000 O-D Pairs are shown in Figure B.22.

Figure B.20 Top 1,000 O-D Pairs in Maine based on Rural Transit Propensity

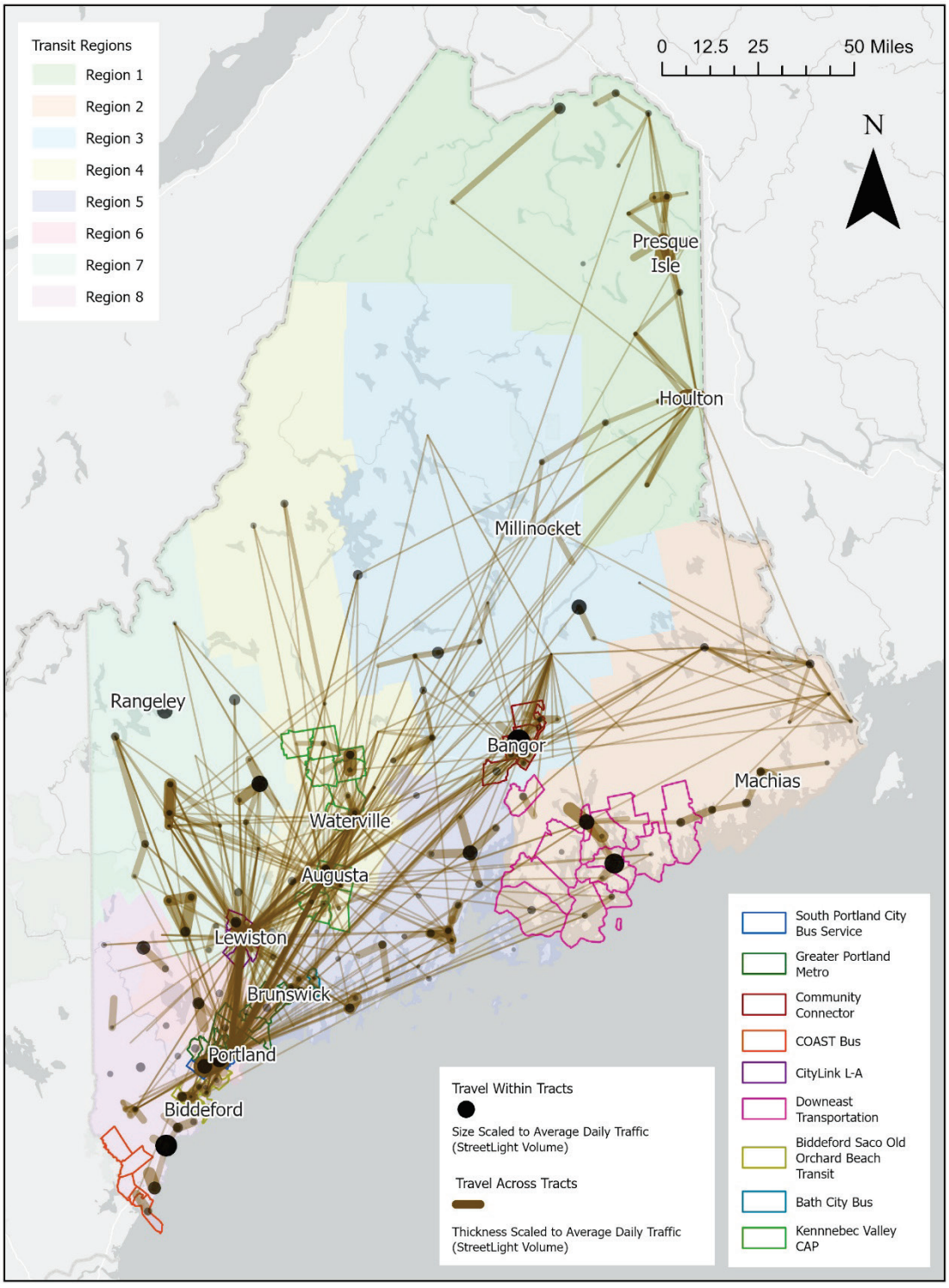


Figure B.21 Top 1,000 O-D Pairs Filtered by Distance based on Rural Transit Propensity

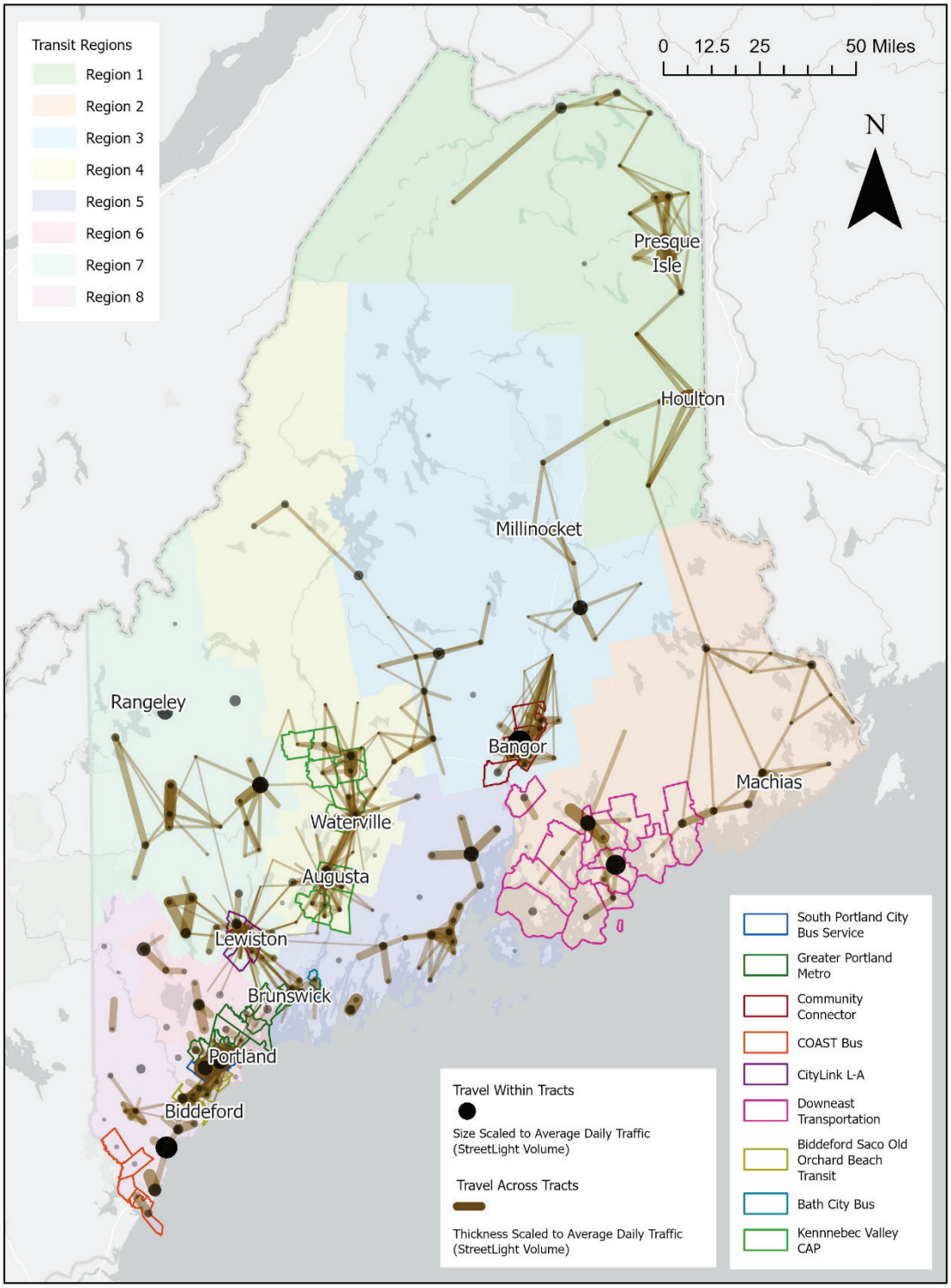
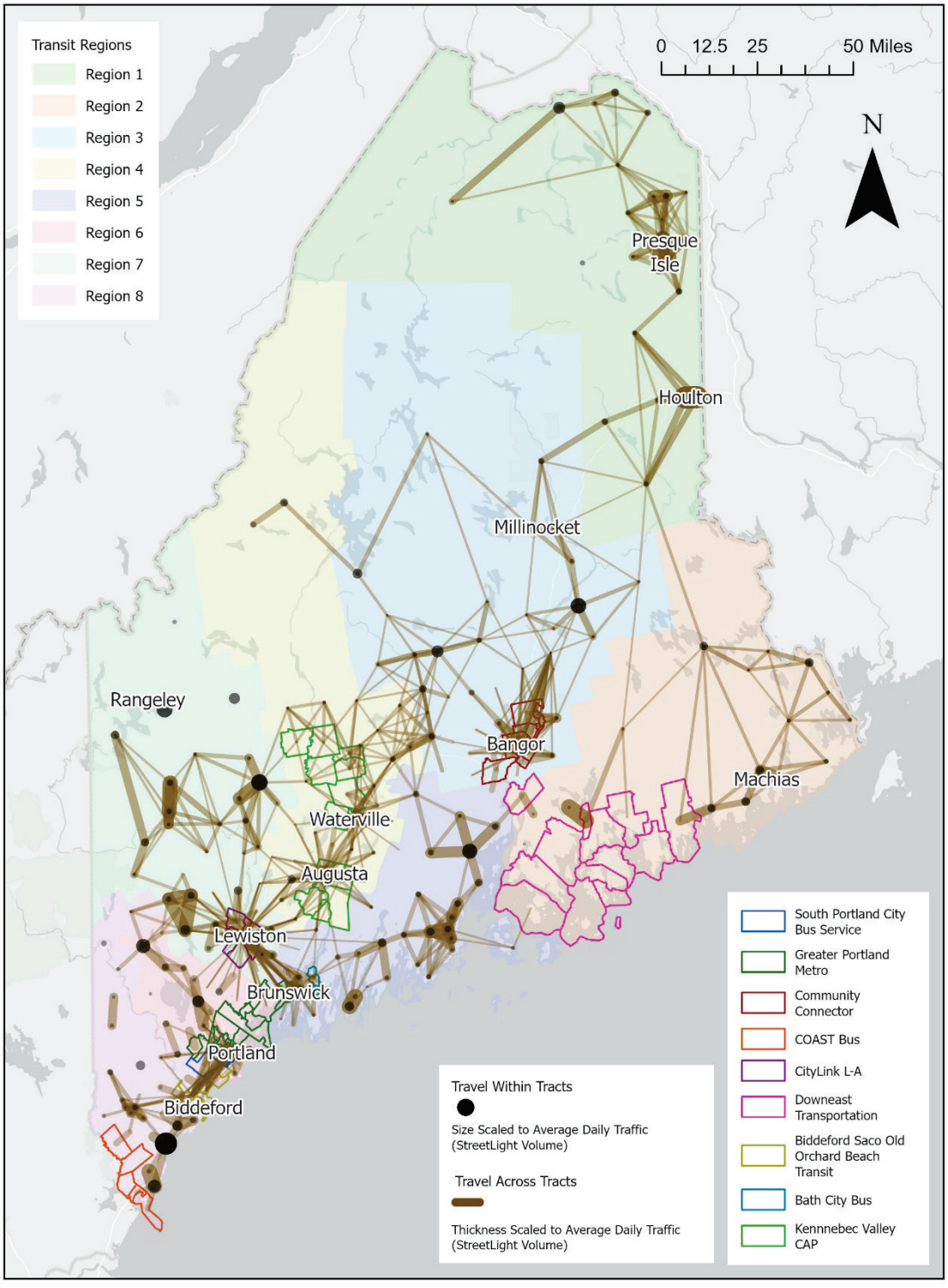


Figure B.22 Top 1,000 O-D Pairs Filtered by Distance and Existing Transit Service based on Rural Transit Propensity



Detailed versions of Figure B.22 are provided for the areas surrounding Augusta, Bangor, Lewiston/Auburn, the Midcoast, and Portland.

Figure B.23 Top 1,000 O-D Pairs Filtered by Distance and Existing Transit Service based on Rural Transit Propensity (Augusta zoom)

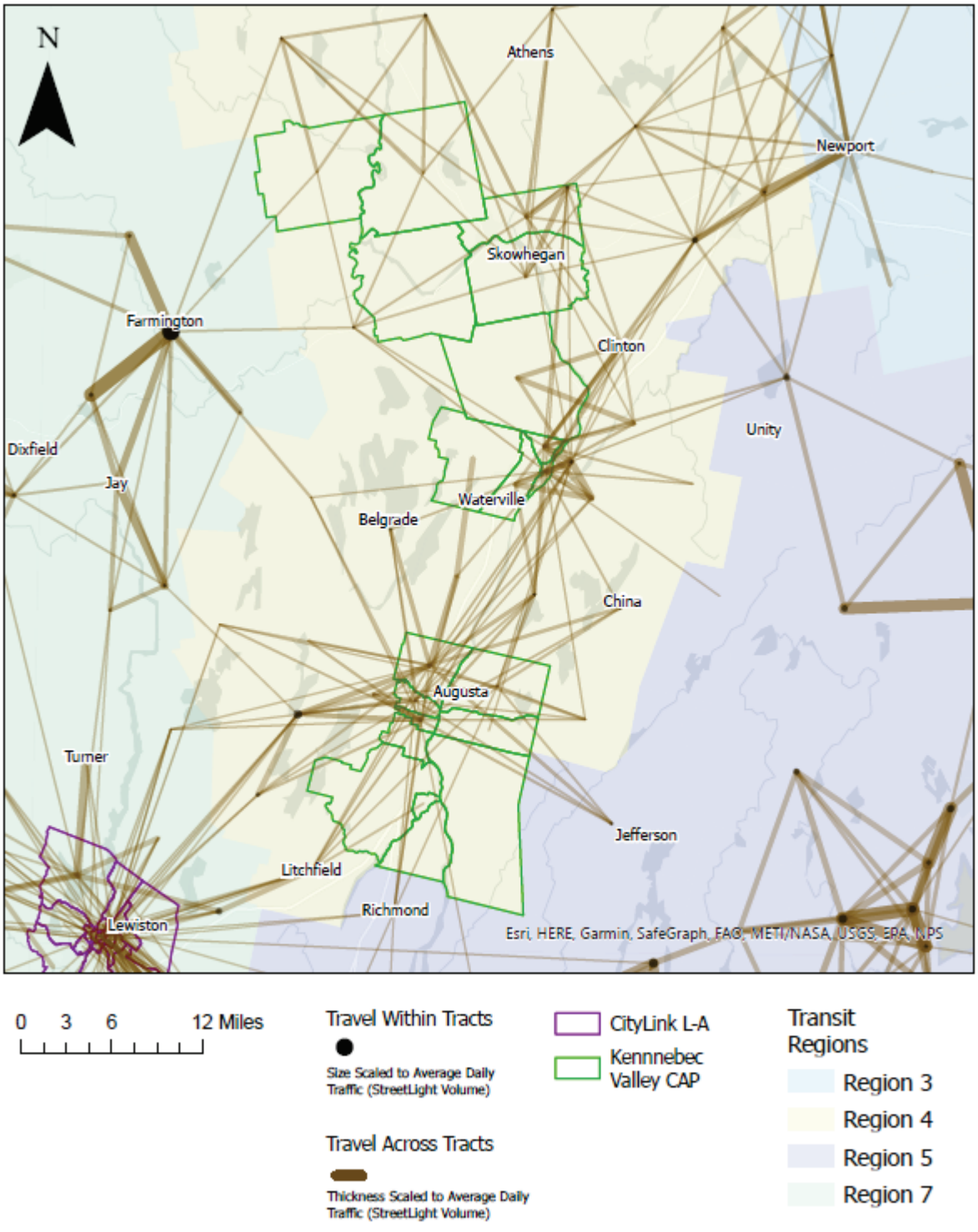


Figure B.24 Top 1,000 O-D Pairs Filtered by Distance and Existing Transit Service based on Rural Transit Propensity (Bangor zoom)

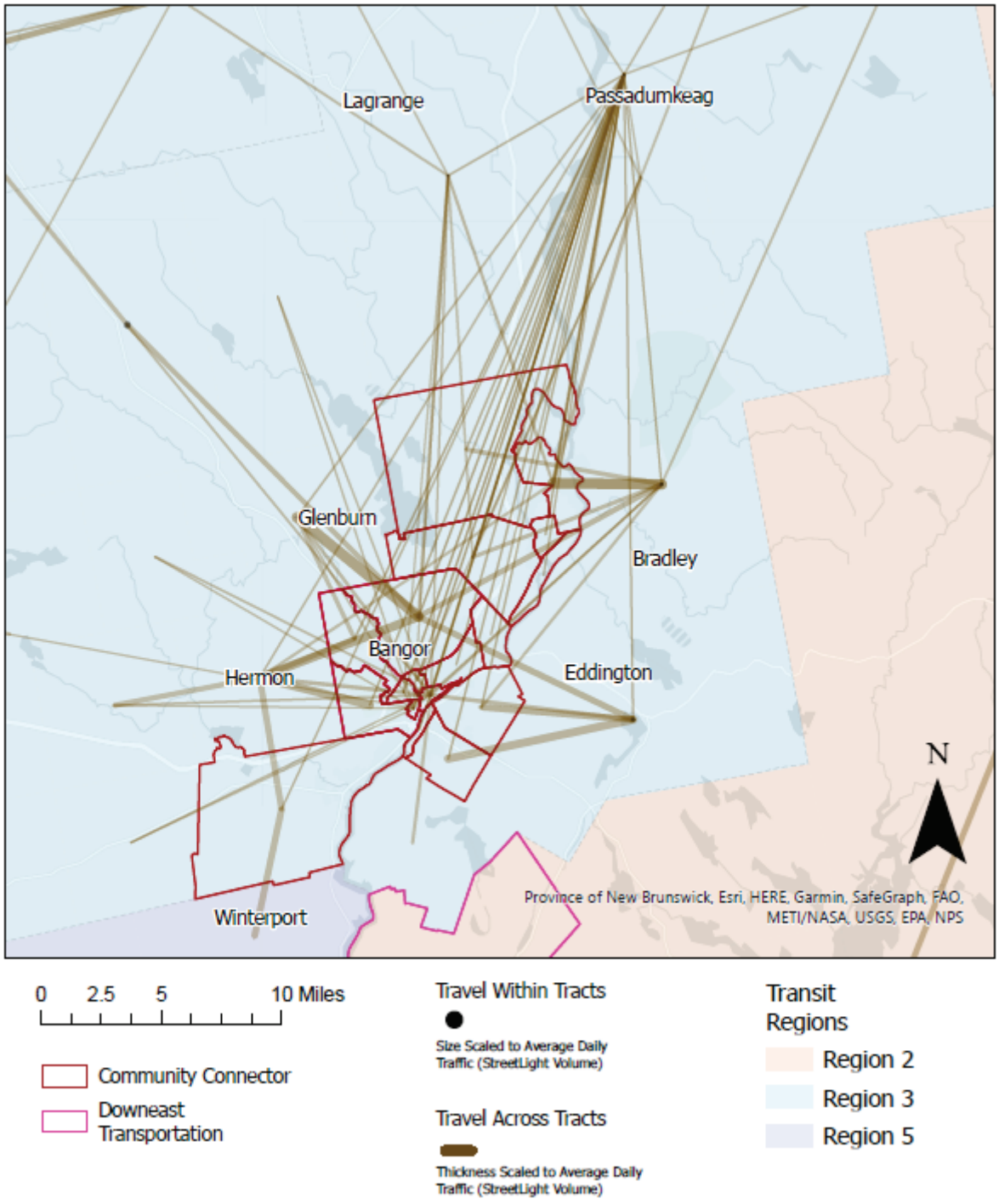


Figure B.25 Top 1,000 O-D Pairs Filtered by Distance and Existing Transit Service based on Rural Transit Propensity (Lewiston/Auburn zoom)

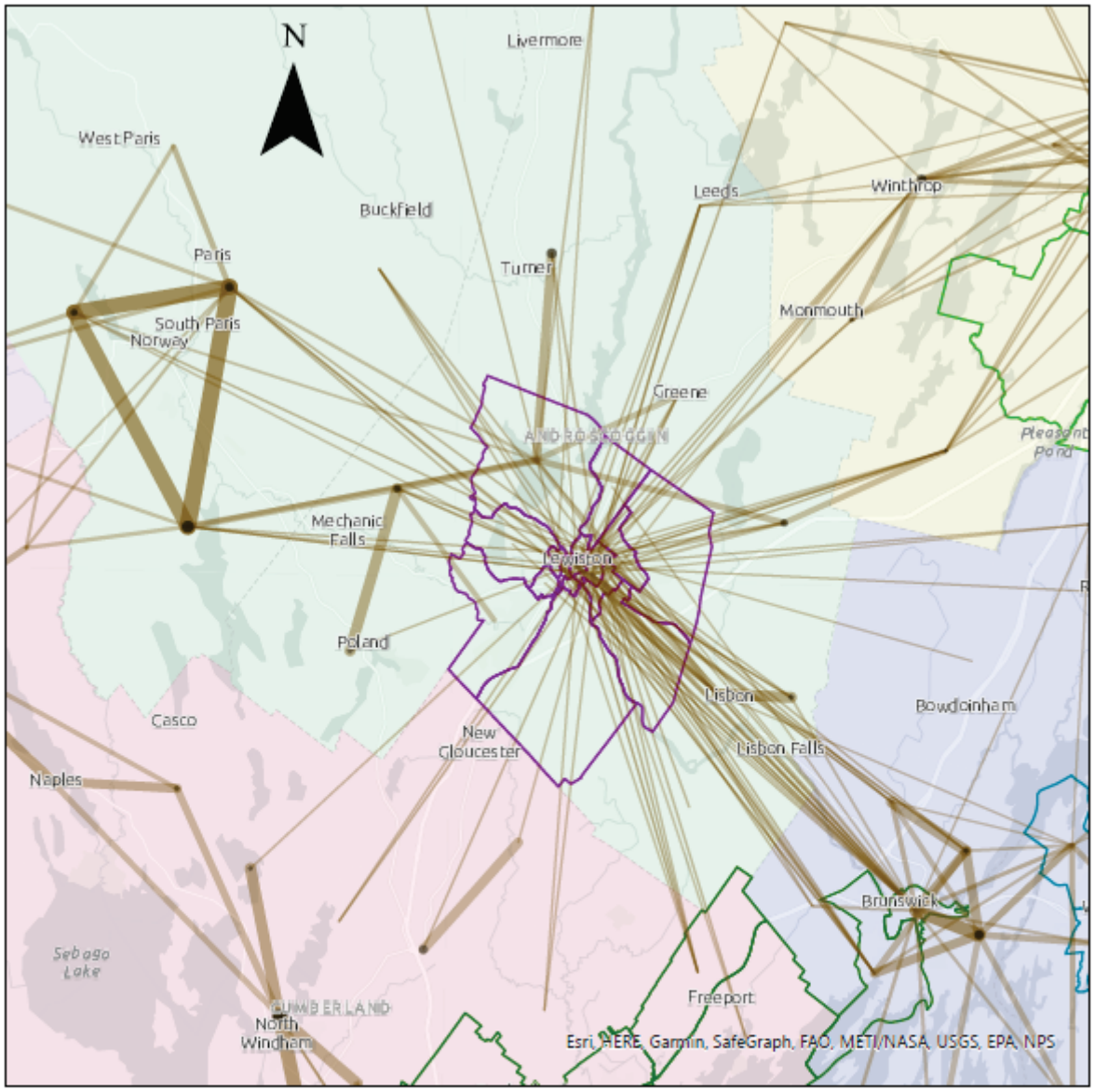


Figure B.26 Top 1,000 O-D Pairs Filtered by Distance and Existing Transit Service based on Rural Transit Propensity (Midcoast zoom)

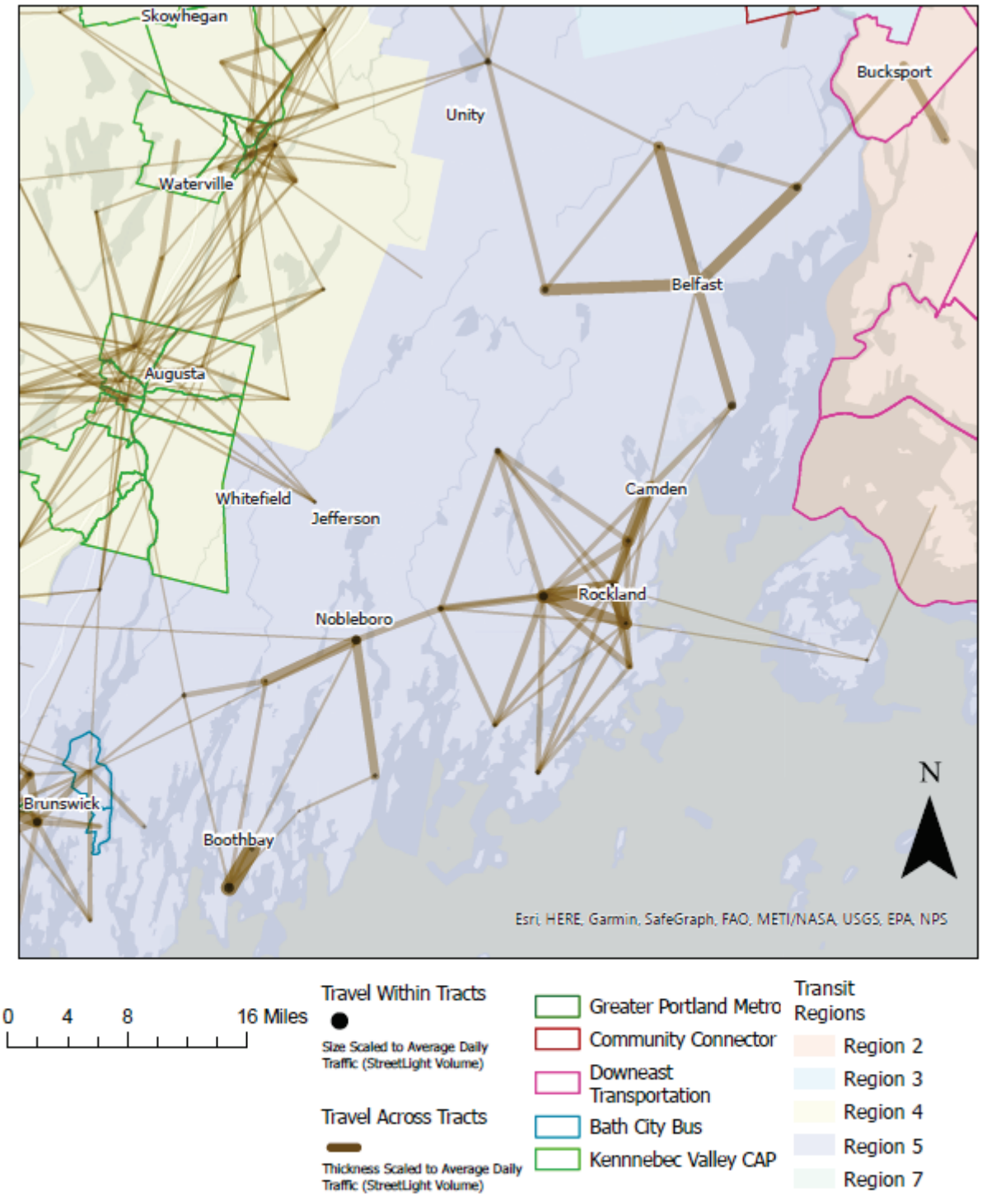
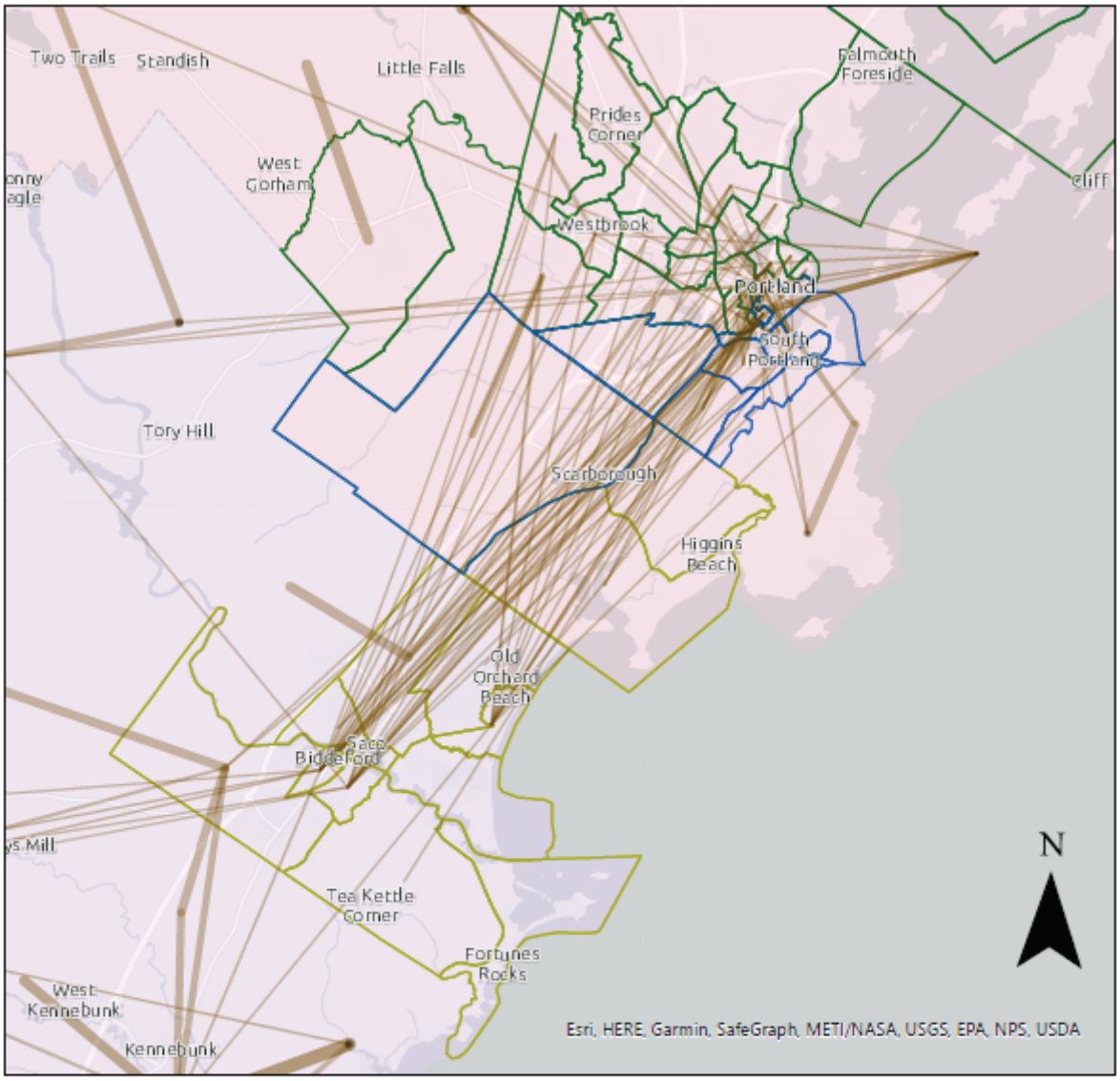


Figure B.27 Top 1,000 O-D Pairs Filtered by Distance and Existing Transit Service based on Rural Transit Propensity (Portland zoom)



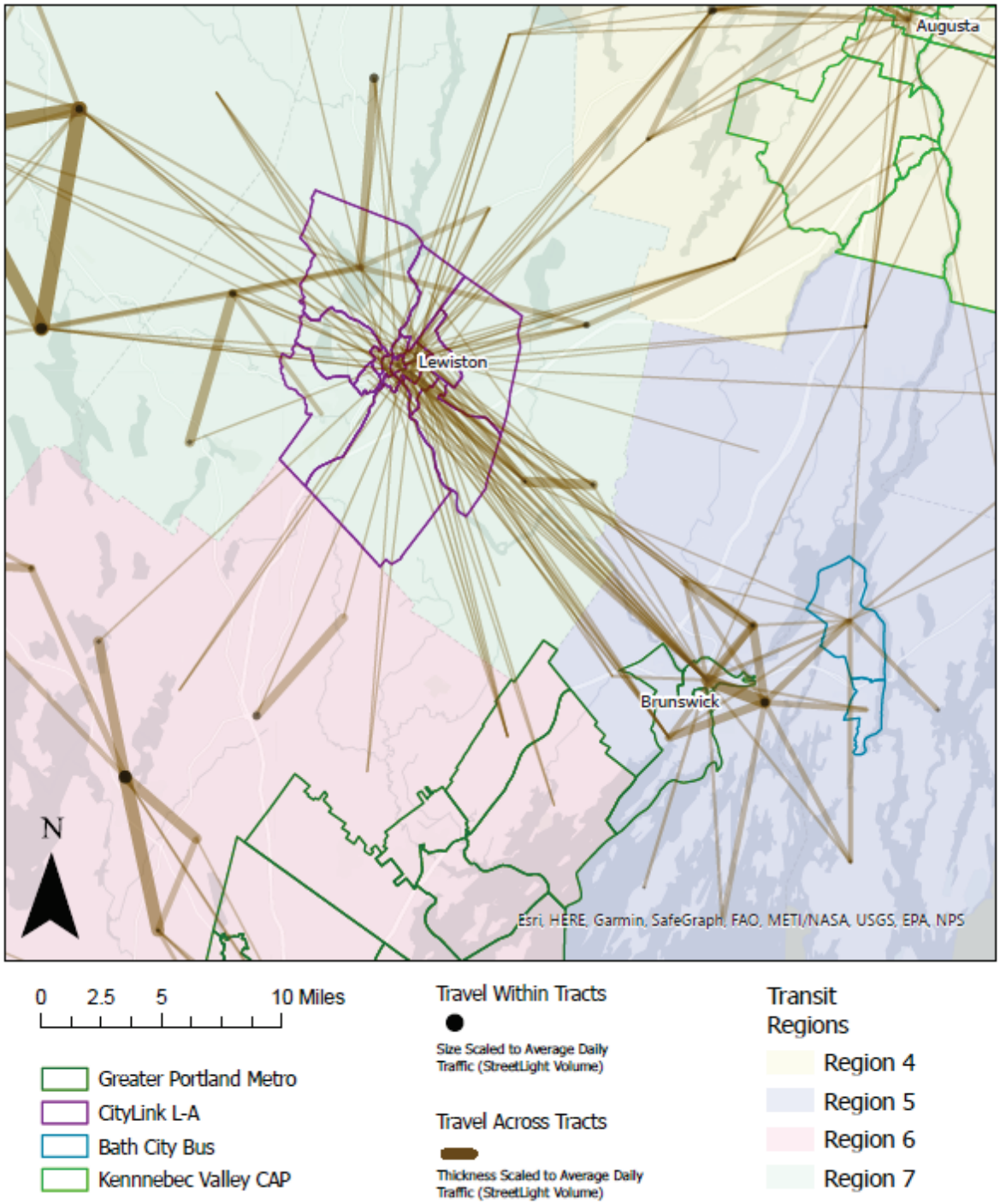
B.5 Gap Analysis and Identified Geographic Transit Needs

From this analysis, the project team identified four categories of potential gaps in current service: boundaries of Maine's transit regions, coordination between Portland-area transit agencies, extensions of service area boundaries, and areas for new service.

B.5.1 Boundaries of Transit Regions

Maine is divided into eight transit regions, each with a regional public transportation agency that coordinates and provides public transit throughout the region. As part of the review of O-D Pairs across the state using transit propensity, it was noted that almost all of the regional boundaries are set reasonably as it relates to travel patterns. The one potential exception is the Brunswick area of Region 5, for which data shows stronger travel pattern connections to the Lewiston/Auburn area (part of Region 7, in green), than to the rest of the Midcoast communities (in Region 5, in purple), as shown in Figure B.28. As a result, it is recommended that a study be conducted to examine and reconsider the transit region boundaries in the vicinity of Brunswick.

Figure B.28 Brunswick-Area Transit Propensity and Travel Patterns

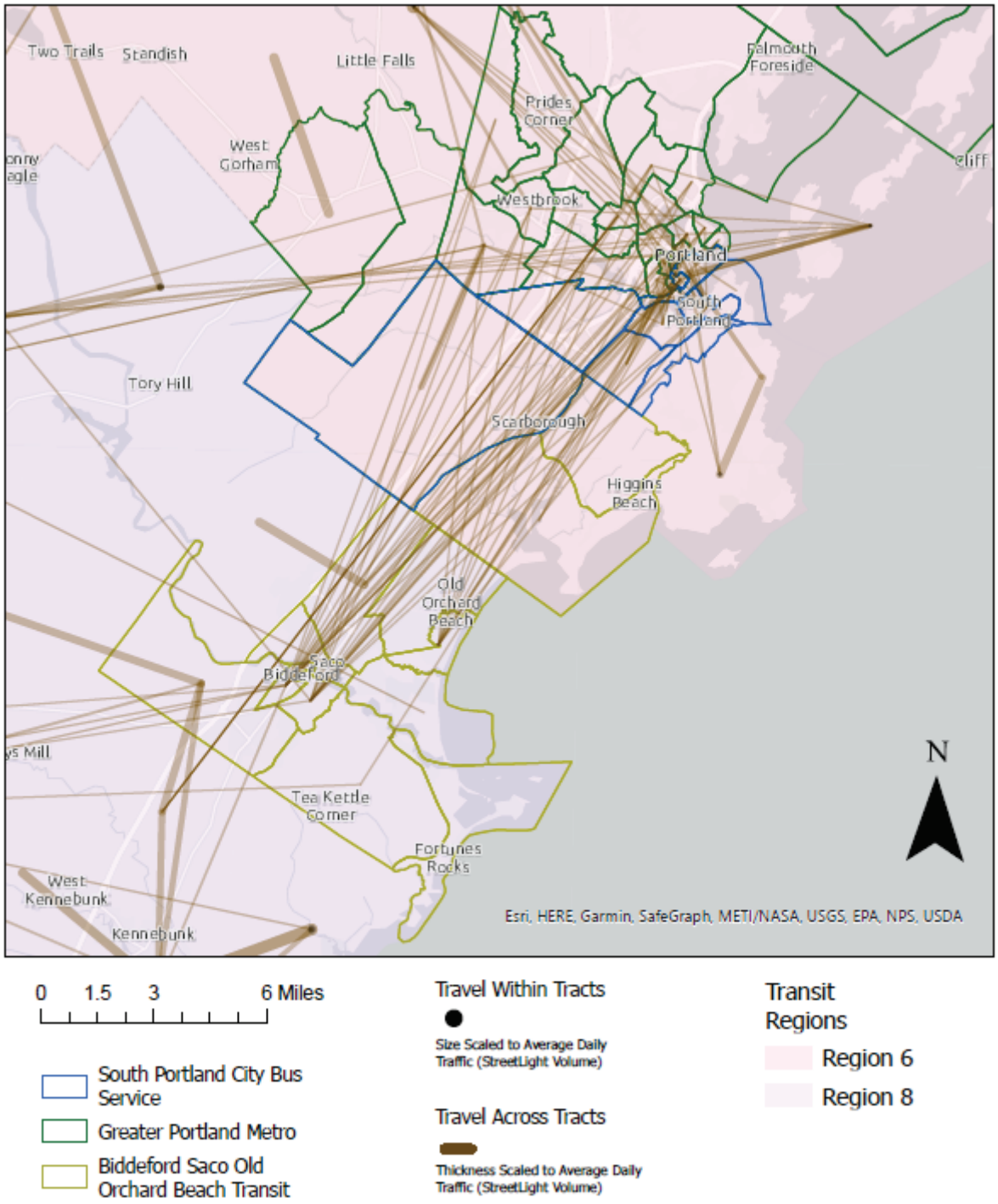


B.5.2 Coordination Between Agencies in Portland Metro Area

The analysis of travel patterns and transit propensity clearly demonstrates the need for strong coordination between the agencies serving the Portland area, including Greater Portland Metro, SPBS, and BSOOB. A large amount of travel takes place throughout this region that is not served by a single agency, as shown in Figure B.29. This finding strongly supports coordination between the three agencies, along with other entities such as PACTS and RTP.

Current coordination includes a unified fare payment system, DiriGo Pass, and ongoing planning and coordination efforts. Given the travel patterns and high transit propensities in this area, additional and ongoing coordination in information sharing (both between agencies and for current and potential riders), scheduling, low and zero emission vehicles, transfer locations, operations, and fare policies are warranted.

Figure B.29 O-D Pairs with High Overall Transit Propensity Not Served by a Single Agency in the Greater Portland Area



B.5.3 Extensions of Service Area Boundaries

In a few parts of the state, this analysis pointed to areas where small service area changes may be warranted. Three areas in particular stand out:

- **North of Bangor—**the Community Connector serves the Bangor area including Veazie, Orono, Old Town, Brewer, and Hampden. The transit propensity analysis suggests additional demand into the Community Connector service area from the areas just to the north, including the Howland/Enfield area, as shown in Figure B.30.
- **Near Lewiston/Auburn—**CityLink serves the Lewiston/Auburn area with bus service. The transit propensity analysis suggests additional demand to nearby areas Mechanic Falls, Turner, and Sabattus, as indicated in Figure B.31.
- **Augusta/Waterville area—**the Kennebec Explorer provides bus service for Augusta, Waterville, and nearby communities, and the Somerset Explorer is a flex-route service available three days a week in Skowhegan, Madison, Anson and Norridgewock. Additional unserved demand may exist between Augusta and Winthrop, to the east of Waterville in Winslow and China, and in the areas between Augusta and Waterville including Belgrade, Sydney, and Vassalboro. In addition, more frequent service may be warranted in parts of the Somerset Explorer service area. These areas are shown in Figure B.32.

Figure B.30 O-D Pairs with High Overall Transit Propensity Not Served by a Single Agency in the Greater Bangor Area

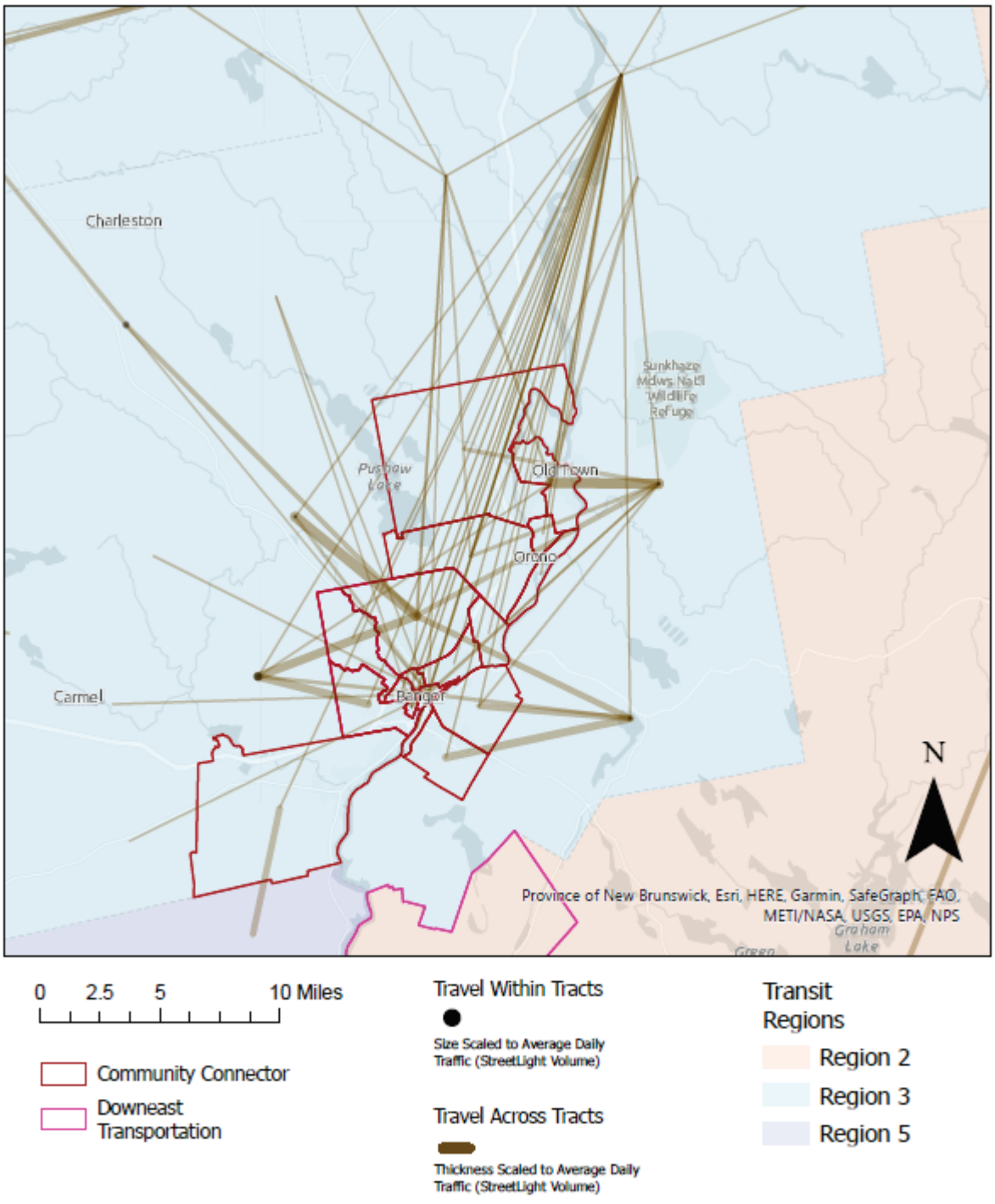


Figure B.31 O-D Pairs with High Overall Transit Propensity Not Served by a Single Agency in the Lewiston/Auburn Area

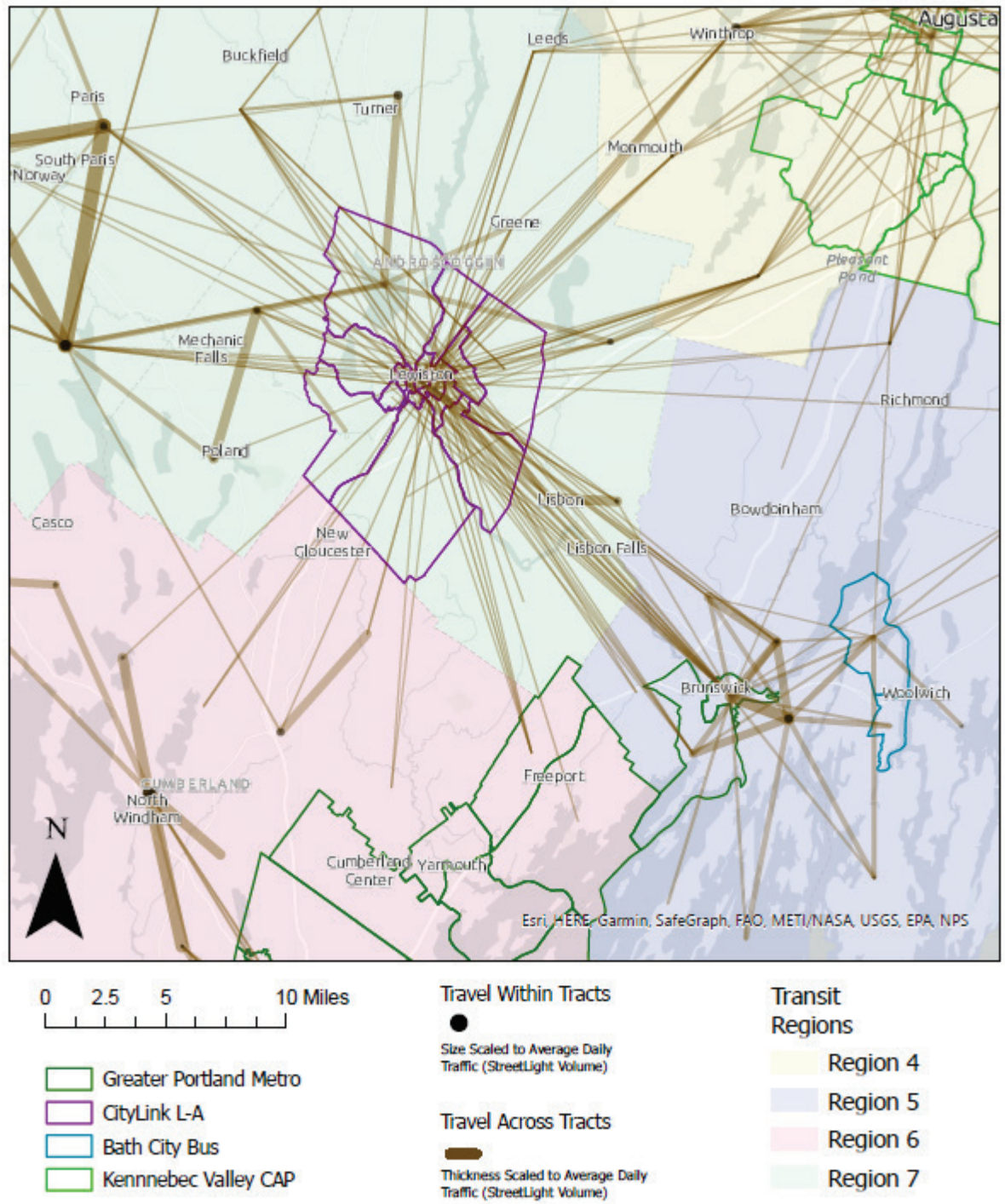
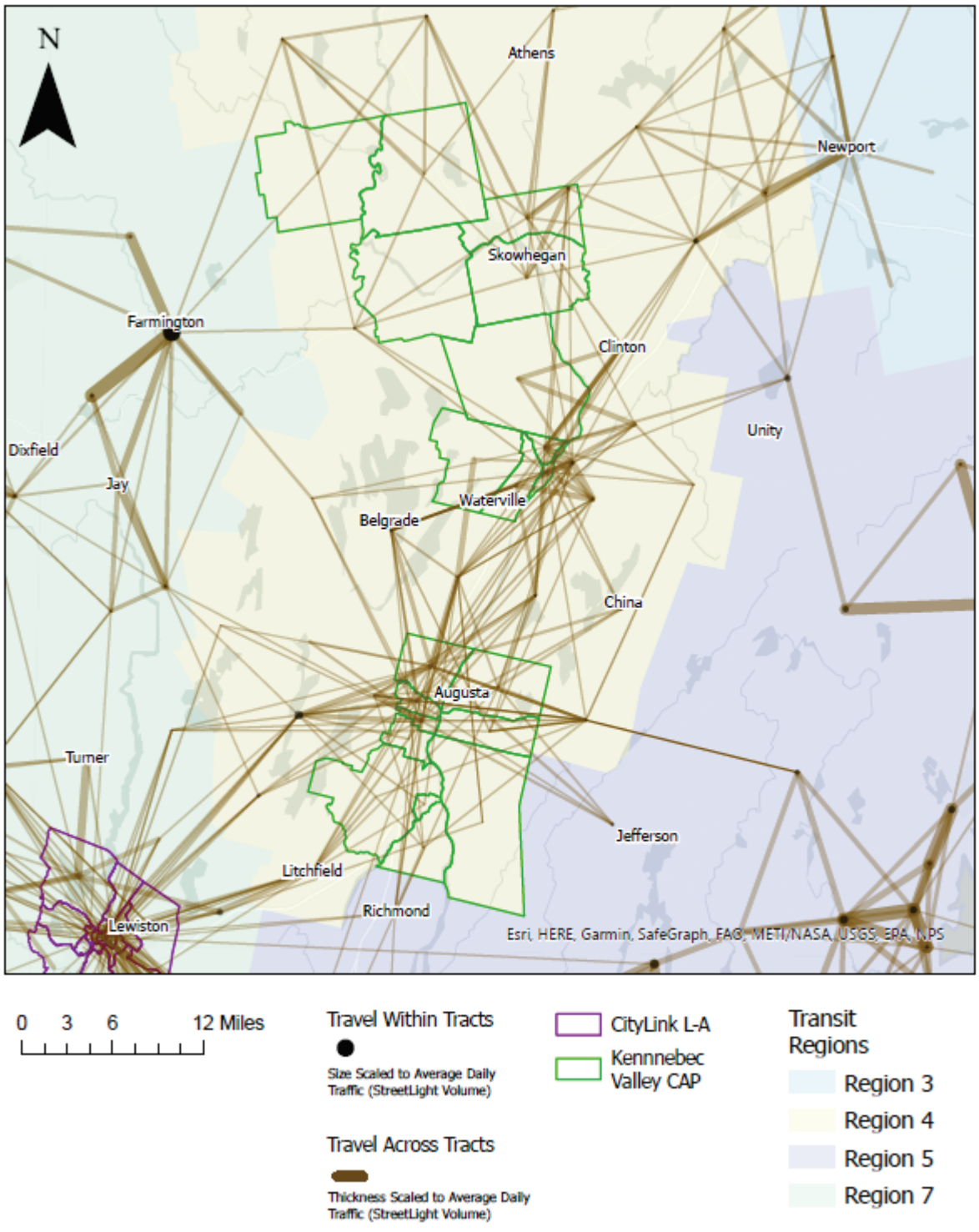


Figure B.32 O-D Pairs with High Overall Transit Propensity Not Served by a Single Agency in the Augusta/Waterville Area



Specific changes to these service areas and routes requires more detailed analysis, and it is recommended that each undergo further study to determine the cost and feasibility of serving these additional areas of relatively high transit propensity and volume.

B.5.4 Areas For New Service

There are a few areas around the state where analysis suggests new fixed-route or more frequent flexible service is warranted. Two specific areas stand out in this regard:

- The **Midcoast region** of Rockland—Camden—Belfast and surrounding communities, highlighted in Figure B.33.
- The **Oxford—Norway—South Paris** area, highlighted in Figure B.34.

Both areas show high transit propensities and significant volumes in areas where fixed-route transit is not currently available. It is recommended that further study be conducted in each area to develop specific route structure, governance models, and cost estimates for initiating new service.

Figure B.33 O-D Pairs with High Rural Transit Propensity Not Served in the Rockland-Camden-Belfast Midcoast Region

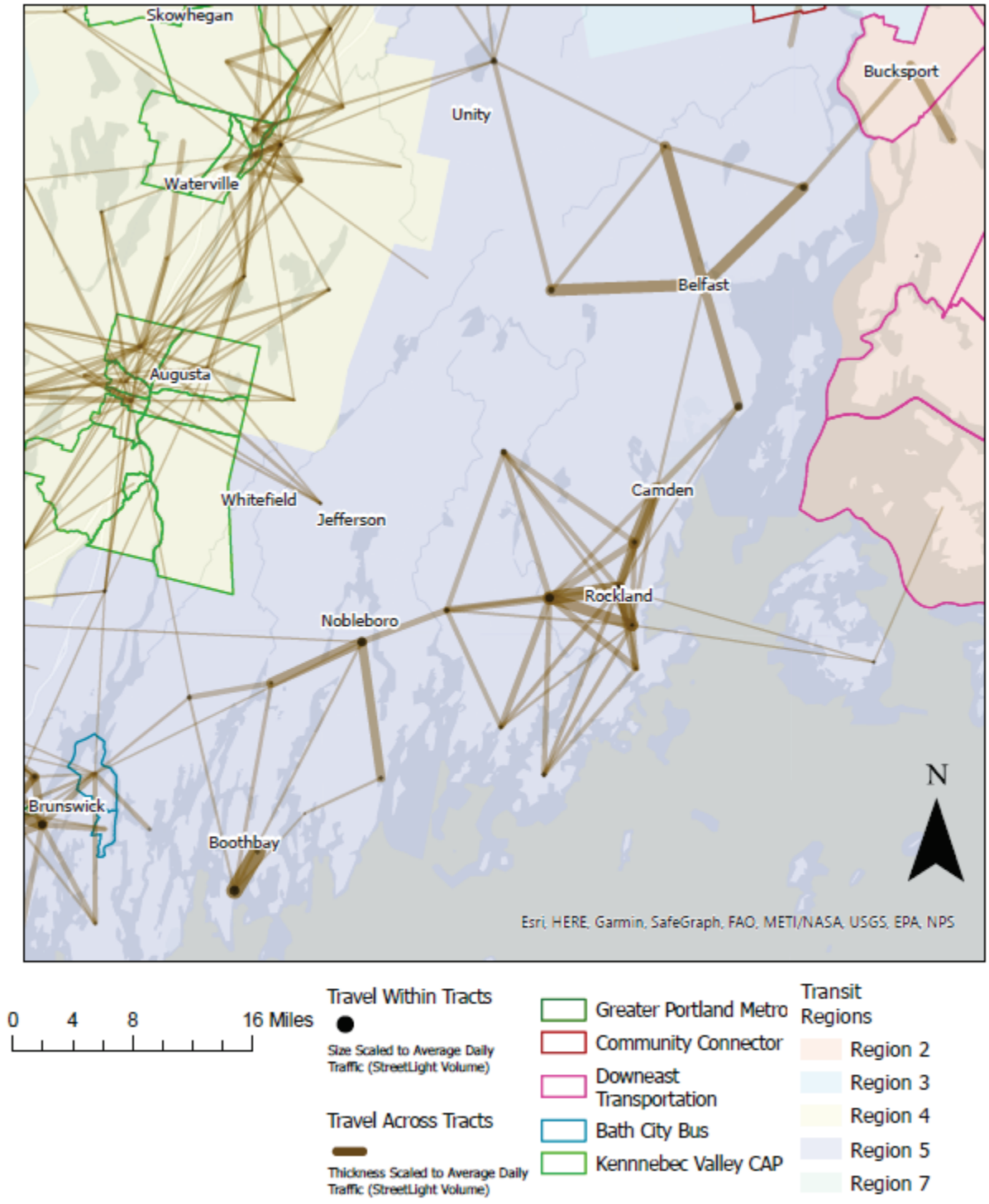


Figure B.34 O-D Pairs with High Rural Transit Propensity Not Served in the Oxford-Norway-South Paris Area