Wisconsin Rail Plan 2050

WISCONSIN DEPARTMENT of TRANSPORTATION
Division of Transportation Investment Management

BUREAU of PLANNING and ECONOMIC DEVELOPMENT

DRAFT - January 2023

Tony Evers

Office of the Governor | State of Wisconsin

3/14/2022

Craig Thompson, Secretary
Wisconsin Department of Transportation
4822 Madison Yards Way, S903
Madison, WI 53705

The Passenger Rail Investment and Improvement Act of 2008 (PRIIA) requires states to establish or designate, by State law or by the direction of the Governor, a "State Rail Transportation Authority" (SRTA). The SRTA is a state agency or official responsible for preparing, maintaining, coordinating, and administering the State Rail Plan. The SRTA establishes priorities and implementation strategies to enhance rail service in the public interest and works to ensure that the State Rail Plan fully reflects the state's policy on freight, passenger rail, and commuter rail transportation.

PRIIA also requires states to establish or designate a "State Rail Plan Approval Authority" (SRPAA), with responsibility to review and approve the State Rail Plan. The SRPAA serves as the state approval authority for investment of public funds in rail projects. In most cases, the State Secretary of Transportation is designated as the authority that provides the final approval of the State Rail Plan. As with the SRTA, states have flexibility to designate the most appropriate official or organization within their state government as the SRPAA. The SRTA and SRPAA may be the same state entity or official.

I hereby designate Secretary Craig Thompson of the Wisconsin Department of Transportation to be the State Rail Transportation Authority and the State Rail Plan Approval Authority for the State of Wisconsin, as defined in the Passenger Rail Investment and Improvement Act of 2008, Public Law 110-432. This designation includes the authority to prepare, maintain, coordinate, and administer the State Rail Plan, and to review and approve the State Rail Plan and serve as the State approval authority for investment of public funds in rail projects.

All the Best,



Tony Evers
Governor

Table of Contents

Chapter 1 Introduction to the Wisconsin Rail Plan 2050 1-1
- Plan Purpose 1-1
- Plan Compliance with Federal and State Requirements 1-3
- Planning Process 1-8
- Overview of Policies 1-10

Chapter 2 Introduction to Rail Transportation in Wisconsin 2-1
- Brief Historical Overview of Rail Service and Policy in Wisconsin 2-1
- Connecting Wisconsin's Rail Network with National Freight and Passenger Rail Networks 2-3
- Description of Physical Rail Infrastructure and Operating Conditions 2-6
- Railroad Usage, Preservation, Abandonments, and Interim Trail Use 2-20
- Railroad Owners and Operators Active in Wisconsin 2-25

Chapter 3 Freight Rail and Commodity Flow 3-1
- Commodity Flow Analysis 3-18
- Current Challenges and Projects 3-32
- Modal Connections 3-39

Chapter 4 Commuter Rail 4-1
- WisDOT's Role in Commuter Rail 4-1
- Existing Commuter Rail Service 4-4
- Commuter Rail Plans and Studies 4-11

Chapter 5 Intercity Passenger Rail - Corridor and Long-Distance Service 5-1
- WisDOT's Intercity Passenger Rail Program 5-2
- Existing Intercity Passenger Rail Corridor Service – Amtrak's Hiawatha Service 5-3
- Existing Long-Distance Intercity Passenger Rail Service 5-7
- Existing Thruway Bus Services Linking to Corridor and Passenger Rail Services 5-10
- Wisconsin's Potential Intercity Passenger Rail Service in 2050 5-12
- Intercity Passenger Rail Corridor Projects and Plans – Medium Term Time Horizon (2027- 2037) 5-27

Chapter 6 Intercity Passenger Rail Stations – Corridor and Long-Distance Service 6-1
- Amtrak's Station Accessibility Development Plans 6-1
- Station Inventory Listings 6-3

Chapter 7 Rail Safety and Security 7-1
- Stakeholder Roles and Responsibilities for Rail Safety and Security 7-1

Rail Crossings and Incident Statistics 7-5
Keeping Safe at At-grade Crossings 7-12
Quiet Zones 7-13
Collisions and Derailments 7-14
Trespassing 7-16
Shipment of Hazardous Materials 7-17
Rail Security 7-18
Reducing Vulnerability 7-18
Emergency Response 7-19

Chapter 8 Environmental Context 8-1
Congestion 8-2
Energy Consumption 8-4
Air Quality and Greenhouse Gas Emissions 8-5
Economic Growth and Development 8-11
Communities and Cultural Resources 8-12
Sensitive Land and Water Resources 8-22
Agriculture 8-31
Indirect and Cumulative Effects 8-34
WisDOT Environmental References and Resources 8-36
Summary of Coordination Efforts and Plan Comparison 8-37

Chapter 9 Equity Context 9-1
Statewide Overview of Wisconsin's Population for Equity Demographic Groups 9-6
The Rail System and Who Lives Near It 9-19
WisDOT Region Focused Discussion 9-24
North Central Region 9-24
Northwest Region 9-31
Northeast Region 9-40
Southwest Region 9-46
Southeast Region 9-53
Statewide Intercity Passenger Rail Buffer Analysis 9-62
Equity Context of WisDOT Rail Programs 9-65

Chapter 10 Rail Transportation Policies and Actions 10-1
Policies and Actions 10-1
Summary of the Purpose of the Policies 10-8

Overview of Implementing the Plan through Programs, the Financial Plan, and the Illustrative Project Listing Tables 10-12

Chapter 11 System Plan Environmental Evaluation 11-1

Policy Summary 11-9
Equity Context of WRP 2050 Policies 11-15

Chapter 12 Details of Programs to Implement the Plan 12-1

Wisconsin DOT Programs 12-1
Other Wisconsin State Programs 12-3
Federal Programs 12-4

Chapter 13 Financial Plan Overview 13-1

Funding Rail Improvements and Maintenance 13-1
Assessing Rail Costs and Benefits 13-7
Wisconsin's Long-Range Rail Investment Program 13-8

Chapter 14 Financial Plan Illustrative Project Listing Tables 14-1

Publicly Funded Freight Rail Projects 14-1
Highway-Rail Interface Projects 14-4
Current Intercity Passenger Rail Projects 14-23
Other Intercity Passenger Rail and Commuter Rail Studies and Projects Not Programmed 14-25
Freight Rail Related Projects and Studies 14-28

Chapter 15 Public Involvement 15-1

Plan Kickoff: Notice of Intent and Public Involvement Plan 15-1
Pre-draft Plan Phase Highlights 15-2
Draft Plan 15-10
Draft Final Plan Public Involvement and Public Hearing 15-10
Final Plan Adoption 15-10

Technical Appendix to Equity Context of Rail in Wisconsin A-1

Environmental Justice Overview A-1
Descriptive Survey of Equity Demographics Methodology A-2
Statewide Patterns A-14
North Central Region A-24
Northwest Region A-30
Northeast Region A-36
Southwest Region A-42
Southeast Region A-48

Chapter 1 Introduction to the Wisconsin Rail Plan 2050

The first freight shipped by rail in Wisconsin was in 1847, one year before statehood was granted, and passenger service began in 1851. The rail transportation system became so robust and important to the state's growth that by 1920 every county had a rail line.

Wisconsin's rail system continues to support state and regional economic activity. Highlights of Wisconsin's rail network today include:

- Over 3,200 miles of privately and publicly owned railroad track
- About 600 miles of publicly owned rail corridors that are leased to railroad companies
- Eleven freight rail companies are operating: four national in scope, two regional, five short line
- Four of the seven largest freight rail operators in the country:
  - Burlington Northern Santa Fe Railway (BNSF)
  - Canadian National Railway (CN)
  - Canadian Pacific Railway (CP)
  - Union Pacific Railroad (UP)
- One Amtrak long distance passenger route, the Empire Builder, with six Wisconsin stops
- One state sponsored regional intercity passenger route, the Hiawatha, with three Wisconsin stops
- One stop on the Chicago metro area's Metra commuter rail system
- Over 3,900 public at-grade rail crossings
- Three intermodal freight terminals moving shipping containers between trucks and trains

Plan Purpose

The Wisconsin Department of Transportation's (WisDOT) Wisconsin Rail Plan 2050 (WRP 2050) focuses on railroad crossings, freight rail, the state-owned rail system, long distance intercity passenger rail, corridor intercity passenger rail, and commuter rail through the year 2050.

WRP 2050 examines the role Wisconsin's rail system plays in the state's economy and in the larger transportation system; mobility of people and freight; and safety considerations. WRP 2050 identifies policies, priorities, and strategies for future investments.

WRP 2050 supports the vision for Wisconsin's transportation system as stated in WisDOT's Connect 2050 multimodal long-range transportation plan. Connect 2050's vision statement will serve as WisDOT's guiding vision for the transportation system as it is developed and maintained over time:

> *WisDOT envisions an integrated multimodal transportation system that maximizes the safe and efficient movement of people and products throughout the state in a way that enhances economic productivity, transportation accessibility and the quality of Wisconsin's communities while minimizing impacts to the natural environment and socioeconomic, historic, and cultural resources.*[1]

The WRP 2050 supports the implementation of Connect 2050 goals. Over the life of Connect 2050, the goals will guide and support development of an integrated, efficient, and safe multimodal transportation system. Goals are high-level statements that set direction and identify topics of critical importance to furthering the statewide multimodal transportation system. Connect 2050 goals include:

Goal 1. Pursue sustainable long-term transportation funding

Goal 2. Focus on partnerships

Goal 3. Pursue continuous improvement and expand data-driven decision-making processes

Goal 4. Increase options, connections, and mobility for people and goods

Goal 5. Maximize technology benefits

Goal 6. Maximize transportation safety

Goal 7. Maximize transportation system resiliency and reliability

Goal 8. Balance transportation needs with those of the natural environment and socioeconomic, historic, and cultural resources

The complete Connect 2050 plan with more details about goals and objectives can be found online at connect2050.wisconsindot.gov.

---

[1] *Connect 2050 Vision Statement Connect 2050 Plan (wisdotplans.gov)*

Plan Compliance with Federal and State Requirements

The Wisconsin Rail Plan 2050 meets federal and state requirements for state long-range rail transportation plans. These requirements include:

- Federal Railroad Administration's (FRA's) guidance for developing state rail plans, which includes requirements from federal law and regulation: State Rail Plan Guidance (September 2013) [2] **Table 1-1** lists where in the plan each requirement is met.
- The Passenger Rail Investment and Improvement Act of 2008 (PRIIA) (Public Law No. 110-432). The PRIIA legislation requires that states develop a long-range transportation plan for freight rail, intercity passenger rail, commuter rail, and track crossings. Plans are to be updated at least every five years. Section 303, Chapter 227 State Rail Plans outlines specific requirements for the development of state rail plans that were later incorporated into the FRA's State Rail Plan Guidance.[3]
- Federal requirements for state multi-modal long-range transportation planning and related outreach identified throughout 23 CFR Section 450.208. Specifics about how the WRP 2050 meets public involvement requirements are in **Chapter 15 Public Involvement**.
- Trans 400 – Wisconsin's administrative rule related to environmental analysis, including for system level long-range transportation plans of all modes. The portions of Trans 400 related to the WRP 2050 are about the System-Plan Environmental Evaluation (SEE) in Trans 400.04, 400.06, 400.08, 400.10; 400.11, and 400.12.[4] The SEE is incorporated directly into the draft and final WRP 2050 in **Chapter 11 System-plan Environmental Evaluation**.

The previous state rail plan, Wisconsin Rail Plan 2030, brought WisDOT into compliance with then current federal regulations. The Federal Railroad Administration released a guidance document on development of state rail plans just as that plan was being finalized. WRP 2050 is consistent with FRA's guidance.

[2] https://railroads.dot.gov/sites/fra.dot.gov/files/fra_net/3382/Final_State_Rail_Plan_Guidance_September_2013.pdf
[3] https://railroads.dot.gov/sites/fra.dot.gov/files/fra_net/3382/Final_State_Rail_Plan_Guidance_September_2013.pdf
[4] https://docs.legis.wisconsin.gov/code/register/2019/766b/remove/trans400

The WRP 2050 brings Wisconsin into compliance with Title 49 USC Section 22102 requirements, making the state eligible to receive financial assistance based on compliance with regulations the United States Secretary of Transportation prescribed under Section 22102 of the law as follows:

- The state has an adequate plan for rail transportation in the state and a suitable process for updating, revising, and modifying the plan
- A designated state authority administers or coordinates the state rail plan and provides for a fair distribution of resources
- The state authority:
  - Is authorized to develop, promote, supervise, and support safe, adequate, and efficient rail transportation
  - Employs or will employ sufficient qualified and trained personnel
  - Maintains or will maintain adequate programs of investigation, research, promotion, and development with opportunity for public participation
  - Is designated and directed to take all practicable steps (by itself or with other state authorities) to improve rail transportation safety and reduce energy use and pollution related to transportation
- The state ensures that it maintains adequate procedures for financial control, accounting, and performance evaluation for the proper use of assistance provided by the United States Government

Implementation of these requirements resulted in the creation of two state rail authorities in 2014: The State Rail Transportation Authority (SRTA) and the State Rail Plan Approval Authority (SRPAA). Under federal law, the SRTA is a state agency or official responsible for preparing, maintaining, coordinating, and administering the State Rail Plan. The SRTA establishes priorities and implementation strategies to enhance rail service in the public interest and works to ensure that the State Rail Plan fully reflects the state's policy on freight, passenger rail and commuter rail transportation. States are also required to establish or designate a SRPAA, with responsibility to review and approve the State Rail Plan. The SRPAA serves as the state approval authority for investment of public funds in rail projects. States have flexibility to designate the most appropriate official or organization within their state government as the SRTA and SRPAA. The SRTA and SRPAA may be the same state entity or official.

The governor of Wisconsin designated the Secretary of the Wisconsin Department of Transportation in 2014 and again in 2022 as the State Rail Transportation Authority and the State Rail Plan Approval Authority for the State of Wisconsin, as defined in the Passenger Rail Investment and Improvement Act of 2008, Public Law 110-432. This designation includes the authority to prepare, maintain, coordinate, and administer the State Rail Plan; to review and approve the State Rail Plan; and to serve as the state approval authority for investment of public funds in rail projects.

Federal Railroad Administration State Rail Plan Preparation Guidance Checklist

Table 1-1 shows the location in WRP 2050 where FRA state rail plan requirements are being met.[5]

Table 1-1 FRA State Rail Plan Preparation Guidance Checklist

FRA Guidance Chapter Number	FRA Guidance Chapter Content	WRP 2050 Chapter
1	**The Role of Rail in Statewide Transportation**	
1.1	The state's goals for the multimodal transportation system.	1
1.2	A conceptual analysis of rail transportation's role within the state's transportation system.	2
1.3	A summary of the freight and passenger rail services, initiatives, and plans.	2-7,14
1.4	A description of the institutional governance structure of the State rail program(s).	Governor Evers letter, 1-2, 12
1.5	A description of the State's authority for grant, loan, and public/private partnership financing.	2, 12-13

[5] *Organized as summarized on page 17 and outlined in subsequent pages of Final_State_Rail_Plan_Guidance_September_2013.pdf (dot.gov)*

FRA Guidance Chapter Number	FRA Guidance Chapter Content	WRP 2050 Chapter
2	**The State's Existing Rail System**	
2.1	**Description and inventory**	
	Rail system elements	2
	Freight services	2, 3
	Passenger services	2-6
	Strategic Rail Corridor Network	2
	Environmental Context	8
	Equity context	9
2.2	**Trends and Forecasts**	
	Freight rail system strengths and challenge	2-3, 7
	Passenger rail system strengths and challenges	2-7
	Integrated rail system	2-7
2.3	**Rail Service Needs and Opportunities**	
	Freight rail system strengths and challenge	2-3, 7
	Passenger rail system strengths and challenges	2-7
	Integrated rail system	2-7
3	**Proposed Passenger Rail Improvements and Investment**	
	Narrative	4-6, 10
	Program description	12
	Project listing tables	14
	Qualitative discussion potential environmental impacts	8, 11
	Qualitative discussion potential equity impacts	9, 11

FRA Guidance Chapter Number	FRA Guidance Chapter Content	WRP 2050 Chapter
4	**Proposed Freight Rail Improvements and Investment**	
	Narrative	10
	Program description	12
	Project listing tables	14
	Qualitative discussion potential environmental impacts	8, 11
	Qualitative discussion potential equity impacts	9, 11
5	**The State's Rail Service and Investment Program**	
5.1	Vision	1
5.2	Program Coordination	1-7
5.3	Rail Agencies	5-7
5.4	Program Effects	8, 9, 12, 14
5.5	Passenger Element	4, 5, 6, 10, 12-14
5.6	Freight Element	2-3, 10, 12, 13, 14
5.7	Rail Studies and Reports	
	Freight	3, 7, 14
	Passenger	4-7
5.8	Passenger and Freight Rail Capital Program	13-14
6	**Coordination and Review**	
	Plan Development	1, 15
	Public Involvement	1, 15
	Environmental Resource Agency consultation summary	15

FRA Guidance Chapter Number	FRA Guidance Chapter Content	WRP 2050 Chapter
Documentation of Technical Assumptions and Procedural Steps		
	Commuter and Intercity Passenger Rail Studies	4, 5
	Commodity Flow and Freight Movements	3
	Equity Context	Technical Appendix
Rail crossing safety action plan (optional)		7

Planning Process

Work on the plan and its companion document, the SEE, began in July 2020 with the publication of the Notice of Intent to Develop the Wisconsin Rail Plan 2050. The Notice of Intent (NOI) asked the public for feedback on what to include in the plan. The NOI was followed by release of a draft Public Involvement Plan for public comment in August 2020. Both adopted documents are available on the plan's website: www.wisconsinrailplan.gov.

Public and stakeholder involvement is a critical part of the WRP 2050's planning process, which includes two public comment periods – one for the draft plan, and one for the draft final plan which includes a public hearing.

Public outreach to stakeholders early in the planning process helped WisDOT identify the scope of what should be included in the draft plan.

WisDOT anticipates updating the WRP 2050 every five years. The adopted final Wisconsin Rail Plan 2050 may also be amended between major plan updates. This will help keep the project listing tables (**Chapter 14 Financial Plan Illustrative Project Listing Tables**) up to date. Amendments will be posted for public comment on the plan's website.

Details about the WRP 2050's public involvement activities are available in **Chapter 15 Public Involvement**. The chapter will be updated for the adopted final plan to reflect all public involvement phases.

Rail Plan Contents and Structure

The Wisconsin Rail Plan 2050 includes 15 chapters and a technical appendix that examine the current conditions of rail, review environmental and equity context of rail infrastructure, define proposed rail policies and programs, and set priorities.

Chapter 1 Introduction to the Wisconsin Rail Plan 2050 – introduces the plan, federal and state plan requirements, the planning process, plan contents, and provides a quick listing of the plan policies

Chapter 2 Introduction to Rail Transportation in Wisconsin – covers the basics of rail infrastructure, current track conditions, how service in Wisconsin fits in with national freight and passenger networks, and information on rail service owners and operators

Chapter 3 Freight Rail and Commodity Flow – describes highlights of freight rail economic and market drivers and describes freight commodity flows

Chapter 4 Commuter Rail – provides information on commuter rail service and studies

Chapter 5 Intercity Passenger Rail - Corridor and Long-distance Service – introduces the two types of intercity passenger rail operating in the state: regional and long distance, studies on potential expanded service, and status of current projects

Chapter 6 Intercity Passenger Rail Stations -Corridor and Long-distance Service – provides the station inventory

Chapter 7 Rail Safety and Security – examines issues such as rail crossing efforts, collision and derailment prevention, and actions people should take to be safe around active train corridors

Chapter 8 Environmental Context – describes basics of how the environment and rail systems currently interact in Wisconsin

Chapter 9 Equity Context – describes who lives near rail infrastructure, with a focus on equity populations

Chapter 10 Rail Transportation Policies and Actions – issues and opportunities and the policies that address them

Chapter 11 System-plan Environmental Evaluation – is the state required environmental document called the System Plan Environmental Evaluation (SEE)

Chapter 12 Detail of Programs to Implement the Plan – describes programs that will implement the plan

Chapter 13 Financial Plan Overview – gives insight on how plan implementation might be funded

Chapter 14 Financial Plan Illustrative Project Listing Tables – provides details of projects in the main freight, crossing, and passenger rail programs

Chapter 15 Public Involvement – provides information on the plan's public involvement process

The plan ends with a **Technical Appendix: Equity Reference Maps and Analysis Methodology**.

Overview of Policies

The following brief overview of the plan policies resulted from the examination of rail related issues and opportunities during the plan development process. **Chapter 10 Rail Transportation Policies and Actions** goes into more detail.

Policies and actions were developed in response to the conditions, issues, and opportunities discussed throughout the plan.

The following tables include policy statements and action items organized by topic area. Some policies and action items are a continuation of WisDOT's existing practices, while others are new.

Federal Railroad Administrative Compliance Items[6]

Federal Railroad Administrative Compliance Items	
WisDOT was designated by the Governor as the State Rail Transportation Authority for purposes of PRIIA in February 2014.	FRA requirement
WisDOT was designated by the Governor as the State Rail Plan Approval Authority for purposes of PRIIA in February 2014.	FRA requirement

Policy Category: Safety and Security

Policy 1 Address rail crossing safety for vehicles, pedestrians, and bicyclists.	**Continuing and new elements**
Action 1.1 WisDOT will fund and complete multi-modal crossing safety pilot projects throughout the state to inform WisDOT's engineering standards and priorities.	New (one pilot started in WisDOT's Southeast Region)
Action 1.2 WisDOT will continue to work with the Office of the Commissioner of Railroads, local officials, and private railroad companies to identify potential rail crossing safety improvement such as signals, gates, grade separations, or closing crossings.	Continuing

[6] *The rail authorities were designated in 2014 and re-affirmed in 2022 (see Gov. Evers letter at beginning of WRP 2050)*

Policy 1 Address rail crossing safety for vehicles, pedestrians, and bicyclists.	Continuing and new elements
Action 1.3 For rail corridors with intercity passenger rail service, WisDOT will continue to work with Office of the Commissioner of Railroads to discourage new at-grade crossings of the corridors.	Continuing
Action 1.4 WisDOT will continue to work with the Office of the Commissioner of Railroads and private railroad companies to discourage trespassing by installing fencing.	Continuing
Action 1.5 WisDOT will evaluate the findings of State Highway-Rail Grade Crossing Action Plans for implementation.	New (FRA required plan)
Action 1.6 WisDOT will continue to promote rail safety and security through its Internet site and educational programs such as Operation Lifesaver.	Continuing

Policy 2 WisDOT will work with partners and stakeholders to ensure the safety and security of the rail transportation system.	Continuing elements
Action 2.1 WisDOT will enhance the security of the transportation system by reducing vulnerability.	Continuing
Action 2.2 WisDOT will work with partners to improve emergency response to make the transportation system more resilient.	Continuing
Action 2.3 WisDOT will continue to work with Wisconsin Emergency Management, railroad companies, and other agencies to discuss rail-related security issues.	Continuing

Policy Category: Freight Rail

Policy 1 WisDOT worked with stakeholders to develop an intermodal freight strategy for Wisconsin as part of implementing the Wisconsin State Freight Plan. The resulting adopted strategy is included in the WRP 2050 and will be added to the next Wisconsin State Freight Plan update.	Continuing, but this is the first time strategy is included in a state plan
Action 1.1 WisDOT will continue its mission of providing leadership in the development and operation of a safe and efficient transportation system by implementing specific policies and providing assistance to help develop an intermodal freight terminal.	WisDOT adopted Jan. 2020
Action 1.2 WisDOT will assist with applications for federal programs.	WisDOT adopted Jan. 2020
Action 1.3 WisDOT will provide technical assistance and guidance to all eligible organizations which seek to host an intermodal terminal.	WisDOT adopted Jan. 2020
Action 1.4 WisDOT will consider grant/loan applications for infrastructure funding related to development of an intermodal freight terminal as reflected in specific WisDOT programs' guidelines.	WisDOT adopted Jan. 2020
Action 1.5 WisDOT will use its network of organizational contacts to open lines of dialogue between local/regional governments and private sector actors.	WisDOT adopted Jan. 2020
Action 1.6 WisDOT will facilitate responses from state agencies to local interested parties as pertains to intermodal-related data, regulations, and funding options as requested.	WisDOT adopted Jan. 2020
Action 1.7 WisDOT encourages all private sector firms to participate in shipping data aggregation efforts.	WisDOT adopted Jan. 2020
Action 1.8 WisDOT encourages discussions between private sector firms that may lead to a collective "breakthrough" in the development of a new intermodal freight terminal.	WisDOT adopted Jan. 2020
Action 1.9 WisDOT will lead coordination efforts between state agencies (including DATCP and WEDC) to ensure a common message about state government's role in intermodal shipping.	WisDOT adopted Jan. 2020
Action 1.10 WisDOT will play a lead role in facilitating communications from state agencies to local interested parties, including local/regional governments and economic development organizations.	WisDOT adopted Jan. 2020

Policy 2 Continue to support shipper access to the rail service network.	Continuing elements
Action 2.1 WisDOT will continue to support freight rail shippers and short-line carriers in preserving service to light-density rail lines.	Continuing
Action 2.2 WisDOT will support freight shipper investments that permit new or continued local service in high-traffic areas.	Continuing
Action 2.3 WisDOT will continue to provide planning support to metropolitan planning organizations and regional planning commissions in considering transportation needs that support developing rail-friendly industrial development sites.	Continuing
Action 2.4 WisDOT will support efforts to improve connections between Wisconsin's short-line railroads and other carriers.	Continuing

Policy 3 Continue to monitor Chicago's effect on Wisconsin's freight service.	Continuing elements
Action 3.1 WisDOT will monitor the CREATE Program's progress and partner with Illinois in supporting new federal funding to move the improvements forward.	Continuing
Action 3.2 WisDOT will explore opportunities to increase freight rail penetration of Chicago-directed traffic flows through intermodal offerings and expanded direct carload service to Chicago interchanges by Wisconsin's short-line partners.	Continuing

Policy Category: Truck borne Freight Connected and Autonomous Vehicle Impacts on Freight Rail

Policy 1 WisDOT recognizes the potential changes widely adopted CAV truck platooning could have on the economics of certain types of freight movements in the state and nationally.	New element
Action 1.1 WisDOT will continue to monitor developments as they could potentially impact existing policies and programs.	New

Policy Category: Long-Term Viability of Rail Corridors

Policy 1 Preserve rail corridors, including rights-of-way, for transportation use through public ownership where appropriate.	Continuing and new elements
Action 1.1 WisDOT will maintain state-owned rail lines to allow service levels to continue uninterrupted and without additional restrictions.	Continuing
Action 1.2 WisDOT will acquire rail lines into public ownership, when appropriate, to preserve essential railroad service.	Continuing
Action 1.3 WisDOT will continue to upgrade and rehabilitate Wisconsin's publicly owned rail line, tracks, and bridges.	Continuing
Action 1.4 WisDOT will work with railroads to ensure that appropriate rail service will be provided to all shippers statewide.	Continuing
Action 1.5 WisDOT will conduct studies of publicly owned rail line infrastructure needs.	Continuing
Action 1.6 WisDOT will develop an analytical policy framework to provide a context for further decision making on the long-term sustainability of publicly owned track and corridors.	New
Action 1.7 WisDOT will work with the Department of Natural Resources and Surface Transportation Board to support the Rails to Trails program to preserve rail corridors for potential reactivation of rail service.	Continuing

Policy Category: Long-Term Viability of Branch and Short Line Network

Policy 1 Preserve Wisconsin's branch and short line network.	Continuing elements
Action 1.1 Continue efforts to preserve rail freight service when the service is judged to be essential, cost-effective, and financially viable, based on transportation efficiency cost-benefit analysis.	Continuing
Action 1.2 Develop outreach to, and foster relationships with, all Wisconsin railroad operators to keep abreast of market demands and railroad interests.	Continuing
Action 1.3 Facilitate relationships to reduce the number of abandonments and strengthen the market for rail.	Continuing
Action 1.4 Monitor railroad activity and create partnerships among businesses and railroads to increase the use of rail.	Continuing
Action 1.5 Work with other state agencies to explore possible state policies to encourage business development within a supporting transportation policy framework.	Continuing

Policy Category: Intercity Passenger Rail Network Investment

Policy 1 WisDOT will continue to support the existing intercity passenger rail system including regional state-supported corridors and Amtrak long-distance routes.	Continuing elements
Action 1.1 WisDOT will continue to optimize intercity passenger rail's role in economic development and job attraction efforts.	Continuing
Action 1.2 WisDOT will continue its commitment to intercity passenger rail's role in multimodal intercity mobility.	Continuing
Action 1.3 WisDOT will pursue connectivity and integration of state supported rail service with the national passenger rail system and other intercity modes.	Continuing

Policy 2 Consider expanded intercity passenger rail service improvements.	Continuing elements with upcoming projects and a new element
Action 2.1 WisDOT will advance increased schedule reliability; increased frequencies; increased travel speeds/decreased travel time.	Upcoming projects
Action 2.2 WisDOT will pursue connectivity and integration with the national passenger rail system; Midwest regional intercity passenger rail system; intercity bus network; airports; and local transit connections.	Continuing
Action 2.3 WisDOT will pursue new opportunities for stops or connection options (rail or connecting bus) in corridors where it makes sense.	Upcoming projects
Action 2.4 WisDOT will consider possible extensions of already successful routes to other nearby urban areas not currently served directly by rail.	Upcoming projects
Action 2.5 WisDOT will lead efforts to develop cooperative agreements with stakeholders regarding upgraded and expanded intercity passenger rail service as required by the Federal Railroad Administration.	Continuing
Action 2.6 WisDOT will continue to act as a coordinating agency that provides technical support and funding to evaluate the feasibility for intercity passenger rail and commuter rail. (Same policy as in commuter rail.)	Continuing
Action 2.7 WisDOT will facilitate the advancement of intercity passenger rail improvements that are consistent with FRA's Midwest Regional Rail Plan.	New FRA plan
Action 2.8 WisDOT will work with the legislature to seek funding to of the existing passenger rail station (85.022) program as an implementation tool for intercity bus, intercity passenger rail, and commuter rail.	Pursue funding

Policy 3 Continue WisDOT's commitment to intercity passenger rail's role in energy efficiency and air quality through implementation of the intercity passenger rail program.	Continuing and new elements
Action 3.1 WisDOT will evaluate the recommendations of the Governor's Task Force on Climate Change Report that pertains to intercity passenger rail for possible implementation. WisDOT will evaluate intercity passenger rail's relationship with state climate change initiatives.	New
Action 3.2 WisDOT will continue to create opportunities like the Midwest equipment fleet pool to utilize the latest energy efficient locomotive technology.	Continuing
Action 3.3 WisDOT will continue to pursue projects that result in net carbon dioxide emission reductions on corridors with high quality intercity passenger rail.	Continuing

Policy Category: Commuter Rail

Policy 1 Support commuter rail investment.	Continuing and revised elements
Action 1.1 WisDOT will consider partnering with a local or private entity that initiates a commuter rail study/project if supported by the MPO long range transportation plan.	Revised element
Action 1.2 WisDOT will prioritize projects that are in an advanced stage of development. Providing partnership and support may include: • Technical and financial assistance for evaluating the feasibility of commuter rail on a transportation corridor, including possible state funding participation in study efforts. • Participation in the first study phase: feasibility study and ridership demand forecast. Results of these studies will be used to evaluate WisDOT's future involvement in any next phase of study and implementation.	Revised element
Action 1.3 WisDOT will consider partnering on FTA Capital Improvement Grant submittals with public or private sponsors.	Revised element
Action 1.4 WisDOT will continue to act as a coordinating agency that provides technical support and funding to evaluate the feasibility for intercity passenger rail and commuter rail. (Same policy as in intercity passenger rail.)	Continuing
Action 1.5 WisDOT will determine opportunities and challenges of special purpose forms of governance to implement and operate commuter rail.	Revised element
Action 1.6 WisDOT will work with the legislature to seek funding to the existing commuter rail station (85.064) as an implementation tool for intercity bus and intercity passenger rail, and commuter rail.	Pursue statutory change and funding
Action 1.7 WisDOT will facilitate intermodal connections with commuter rail. As new commuter rail service and stations are planned, WisDOT will work to facilitate connections between all transit modes and intercity passenger rail and provide technical assistance and funding for these efforts.	Revised element
Action 1.8 WisDOT will explore commuter rail operating assistance options.	Revised element

Policy Category: Supporting Programs for Both Intercity Passenger Rail and Commuter Rail

Policy 1 WisDOT will support commuter rail and intercity passenger rail through a planning program.	Continuing and revised elements
Action 1.1 WisDOT will seek funding for the multi-modal planning program (85.022) already in statute to identify and seek to implement connections to other transportation modes and evaluate the feasibility of intercity bus, intercity passenger rail and commuter rail improvements. This would allow WisDOT to provide funding assistance for planning, environmental and engineering studies from a stable funding source.	Pursue statutory change and funding
Action 1.2 WisDOT will encourage coordination and integration between commuter rail service, other local transit agencies, and intercity passenger rail services.	Continuing

Chapter 2 Introduction to Rail Transportation in Wisconsin

This chapter provides a basic description of the rail transportation network in Wisconsin and how it works. The main topics covered are:

- Brief historical overview of rail service and policy in Wisconsin
- Connecting Wisconsin's rail network with national freight and passenger rail networks
- Description of physical rail infrastructure and operating conditions
- Railroad usage, preservation, abandonments, and interim trail use
- Railroad owners and operators active in Wisconsin

Brief Historical Overview of Rail Service and Policy in Wisconsin

Wisconsin's rail transportation system began in 1851 with its first freight and passenger rail line between Waukesha and Milwaukee.[1] Between the mid-nineteenth century and mid-twentieth century, railroads experienced broad growth and stability. By 1857, the first line spanning the east-west length of the state from Lake Michigan to the Mississippi River was operating. From the 1860s until the late 1920s, private railroad companies built an extensive passenger and freight service network throughout Wisconsin and connected the state with the rest of the country. Wisconsin's railroad network peaked around 1920, with about 7,600 miles of active rail lines.[2]

Through the 1950s and 1960s the amount of passenger and freight rail service declined dramatically in Wisconsin and nationwide. Several railroad bankruptcies and service abandonments occurred over this period, as well as general financial deterioration of the rail industry with railroads regularly deferring maintenance of the track.[3]

In 1970 to ensure the continuation of passenger rail in the U.S. and to relieve the rail industry, Congress created the National Railroad Passenger Corporation (Amtrak) to take over and operate the nation's intercity passenger rail services. Amtrak is a quasi-private corporation partially funded by the federal government.[4] While Amtrak stabilized the national passenger rail system, some routes were eliminated including several in Wisconsin.

---

[1] Railroads in Wisconsin | Wisconsin Historical Society (wisconsinhistory.org)

[2] *wi.histcolumb.i0018.pdf (wisc.edu)*

[3] *Wisconsin Railroads: Map, History, Abandoned Lines (american-rails.com)*

[4] *Amtrak at 50: The Rail Passenger Service Act of 1970 – The Eno Center for Transportation (enotrans.org)*

The Staggers Rail Act of 1980 provided widespread deregulation of the railroad industry. Many regulatory restraints on the railroad industry were removed, providing the industry increased flexibility to adjust their rates and tailor services to meet shipper needs and their own revenue requirements. Since the mid-1990s, railroads have had a more stable financial footing and have invested heavily in infrastructure and equipment. The industry also showed remarkable safety improvements since passage of the Staggers Rail Act, with train incident rates declining by 65% from 1981 to 2009.[5]

The Staggers Rail Act also allowed for easier abandonment of lines and led to substantial changes among carriers as larger railroads sold or transferred their unproductive lines to newly created short line and regional railroads. The Staggers Rail Act also created the Feeder Line Development Program, a federal program that provides rail users with an option that might help avoid abandonment of rail lines.[6]

Federal budget cuts decreased Amtrak service in Wisconsin in the early 1980s. Wisconsin's Amtrak service was reduced to three daily round trips between Chicago and Milwaukee, and one daily round trip between Chicago, Minneapolis/St. Paul, and the Pacific Northwest by 1985. In 1989, Wisconsin and Illinois jointly funded a two-year demonstration project that added two daily round trips to Amtrak's Chicago-Milwaukee service to evaluate the potential of state-supported intercity passenger rail service. The two states have jointly funded Amtrak's Hiawatha Service ever since. Wisconsin and Illinois continue to make improvements to the service, such as adding frequencies, building new stations, and improving track and signal infrastructure.

The Interstate Commerce Commission Termination Act (ICCTA) of 1995 transferred jurisdiction over rail carrier transportation from the Interstate Commerce Commission to the Surface Transportation Board. The Surface Transportation Board (STB) was created with jurisdiction over some aspects of interstate commerce, including rail. Some of its rail related responsibilities include rates, sales, leases and use agreements, and abandonments. The ICCTA also made clear the primacy of federal regulation of private railroads, with only limited state authority.[7]

Until the 1990's the Wisconsin State Constitution prohibited state government from directly funding rail improvements. Rail Transit Commissions (RTCs) were created as a mechanism to provide state and local funding to help preserve rail service, the potential for rail service, and to

[5] *IMPACT OF THE STAGGERS RAIL ACT OF 1980 (dot.gov)*
[6] *WisDOT Guide to Railroad Abandonments in Wisconsin. 2019. https://wisconsindot.gov/Documents/doing-bus/freight/rr-abandon.pdf*
[7] *H.R.2539 - 104th Congress (1995-1996): ICC Termination Act of 1995 | Congress.gov | Library of Congress*

influence policies on the future use of rail corridors if rail service is discontinued. RTCs are made up of member counties and remain an important part of the publicly owned rail system, even after a 1992 Wisconsin constitutional amendment allowed direct state government funding. Grant agreements between the Wisconsin Department of Transportation (WisDOT) and RTCs determine how publicly owned lines can be used.[8]

The total miles of active railroad lines in Wisconsin have fallen from a peak of 7,600 in the 1920s to 3,254 miles operating in 2019.[9] Though track mileage has decreased by about 350 miles in the past decade, abandonments of large sections of railroad corridors have been uncommon in recent decades. While abandonments still occur, they have differed from earlier abandonments of the late 1970s and early 1980s where entire corridors were abandoned. Recent abandonments are often stub-ended spurs only a few miles in length.

In response to the large abandonments of the 1970s, the Wisconsin Legislature created the state's original rail assistance program in 1977.[10] This led to preservation of railroad corridors through public acquisition, with over 590 miles of rail lines currently in public ownership. Many discontinued rail lines have been preserved through the Rails-to-Trails Program and are used as interim recreational and multi-use trails. These preserved corridors could be put back into service as railroads if future conditions were favorable.[11]

Connecting Wisconsin's Rail Network with National Freight and Passenger Rail Networks

Freight

Freight is moved by rail, ship, barge, pipeline, truck, and air. The rail network accounts for approximately 40% of U.S. freight by ton-miles (the length freight travels) and 16% by tons (the weight of freight moved). In Wisconsin, about 32% of freight tonnage and value is by rail.[12]

---

[8] *See Railroad Usage, Preservation, Abandonments, and Interim Trail Use later in this chapter for more information about rail service and corridor preservation and the Rail Transit Commission section later in this chapter for more information about RTCs.*

[9] *January 2021. Association of American Railroads. Freight Railroads in Wisconsin Fact Sheet.*

[10] *Freight Railroad Infrastructure Improvement Program. WisDOT.* <https://wisconsindot.gov/Pages/doing-bus/local-gov/astnce-pgms/aid/friip.aspx>. *Accessed 01/18/2022*

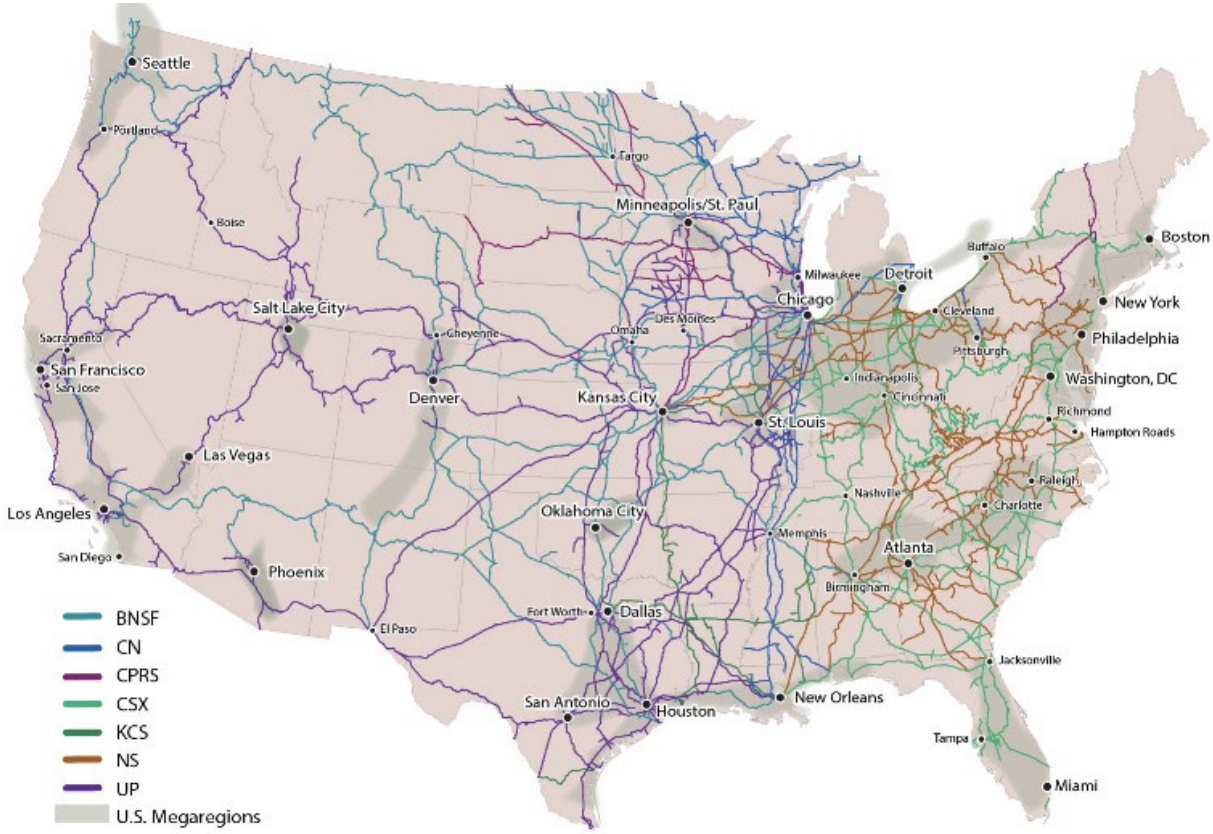
[11] *WisDOT Guide to Railroad Abandonments in Wisconsin. 2019.* <*https://wisconsindot.gov/Documents/doing-bus/freight/rr-abandon.pdf*> *; For more information about discontinuance, abandonments, and interim trail use see the* **Railroad Usage, Preservation, Abandonments, and Interim Trail Use** *section of this chapter.*

[12] *2019 IHS Transearch Database.* https://wisconsindot.gov/Documents/doing-bus/freight/flow2019.pdf. *Accessed 01/18/2022*

Chapter 3 Freight Rail and Commodity Flow includes discussion of major freight trends impacting rail freight in Wisconsin and a detailed commodity flow discussion.

The United States' freight rail network is extensive (**Figure 2-1**). It provides connections between states, access to freight and passenger rail systems in Canada and Mexico, and direct access to ports on the Great Lakes, the Mississippi River, both coasts, and the Gulf of Mexico. The multi-billion-dollar rail industry includes 140,000 rail miles operated by seven Class I railroads (four in Wisconsin), 22 regional railroads (two in Wisconsin), and 510 local railroads (five in Wisconsin). It provides numerous public benefits including reductions in road congestion, highway fatalities, fuel consumption and greenhouse gas emissions, logistics costs, and public infrastructure maintenance costs.[13]

Figure 2-1: National Freight Rail System 2022



Source: Freight Rail Overview | FRA (dot.gov)

[13] *Freight Rail Overview | FRA (dot.gov)*

Wisconsin's proximity to Chicago – one of the nation's most important rail interchange hubs handling one-third of the U.S. freight rail – underscores the importance of the state's rail system to the national system for both freight and passengers. North-south and east-west mainlines are routed through Chicago providing direct access to the national freight rail network. Wisconsin is north of several high-density east-west freight rail corridors and also contains one high-density east-west corridor within the state. Other corridors passing through Wisconsin originate in Seattle, Vancouver, and Prince Rupert, British Columbia. Many of Wisconsin's lines feed into these corridors. Wisconsin's connections to these networks provide access to international trade.

The Strategic Rail Corridor Network (STRACNET) is an interconnected and continuous rail line network consisting of over 38,000 miles of track serving over 170 national defense installations. The network was established to support defense deployment and peacetime needs. Wisconsin's STRACNET line is the same Canadian Pacific line that is used by Amtrak for passenger rail travel. As a major rail hub, Chicago is heavily served by STRACNET designated lines.

Passenger Rail: Intercity and Commuter Rail

Wisconsin is part of the national intercity passenger rail network. There are two intercity routes serving the state: the Hiawatha between Chicago and Milwaukee (jointly funded by Wisconsin and Illinois); and the Empire Builder between Chicago and Seattle or Portland (federally funded).

Wisconsin's location near Chicago is an asset. Amtrak's Union Station in downtown Chicago is a major focus for its long distance and Midwest regional routes. Of its 35 long distance and regional routes, 11 use the Chicago's Union Station as a hub (**Figure 2-2**).

Figure 2-2: Amtrack Intercity Passenger Rail Network 2022



Source: State-Amtrak Intercity Passenger Rail Committee

Chicago's commuter rail system, Metra, has a station and service yard near Kenosha and has stations in northern Illinois near the Wisconsin-Illinois border that provide connectivity to Chicago from some southeastern Wisconsin communities.

Intercity passenger rail and commuter rail services are discussed in detail in **Chapter 4 Commuter Rail**, **Chapter 5 Intercity Passenger Rail – Corridor and Long-Distance**, and **Chapter 6 Intercity Passenger Rail Stations – Corridor and Long-distance**.

Description of Physical Rail Infrastructure and Operating Conditions

Rail Lines

Wisconsin's rail network consists of about 3,300 miles of active rail lines, consisting of main lines, branch lines, and spurs.

- **Main line –** the principal artery of the rail system, from which branch lines, yards, sidings, and spurs are connected.[14]

[14] *Armstrong, John H. The Railroad: What It Is, What It Does, 5th edition. Omaha, Nebraska. Simmons-Boardman Books, Inc., 2008.*

- **Branch line –** a secondary railroad line which branches off a more important through route, usually a main line.[15]
- **Spur –** a short branch line. An industrial spur is a type of secondary track used to allow customers to load and unload railcars without interfering with traffic on the main or branch line.[16]

Speed

Rail lines in the United States are classified by the Federal Railroad Administration (FRA) into Classes 1 through 9. FRA track class indicates the condition of track and its capacity. The classification requires specific construction details, including tolerance requirements for the geometric measurements. These engineering tolerances and signalization systems determine the FRA speed limits for both freight and passenger trains.[17] Railroads can set lower speed limits on sections of their rail lines based on track characteristics and conditions. Since trains may operate at lower speeds, the FRA speed limits cannot be used as an indication of expected average train speeds.

FRA Class 4 track is needed to run passenger rail service at conventional speeds of 79 mph, but passenger rail may run on lower classified track at lower speeds. The maximum speed for freight trains allowed by FRA is 60 mph, with certain exceptions that allow up to 80 mph. Most rail lines in Wisconsin have track that is Class 2, 3 or 4. **Figure 2-3** shows the FRA classification of tracks and the maximum speeds for each classification.

[15] *Armstrong, John H. The Railroad: What It Is, What It Does, 5th edition. Omaha, Nebraska. Simmons-Boardman Books, Inc., 2008.*
[16] *CSX Railroad Dictionary. <https://www.csx.com/index.cfm/about-us/company-overview/railroad-dictionary/?i=S> Accessed 1/25/2022.*
[17] *Title 49 of the CFR. §213.9 Classes of track: operating speed limits.*

Figure 2-3: FRA Track Classifications and Speed Limits 2022[18]



[18] *Current as of June 2022*

Major Rail Infrastructure Types and Their Impact on Capacity

The capacity of a rail corridor is the number of trains that can travel within a given period of time. Managing capacity is done through such physical and technological attributes as signaling systems, rail infrastructure, and rolling stock.

Signaling Systems

Track signalization (**Figure 2-4**) is essential to a railroad's operating capacity over a given route. Signalization is a form of traffic control. Advanced signalization systems are required for higher speeds in a corridor.

Traffic control started with the **timetable**, which specifies where a train should be at a given time. To cope with unforeseen circumstances (e.g., delays, breakdowns, extra trains) the dispatcher issues train orders which supplement and supersede the timetable.

Another type of traffic control is to divide the line into sections or blocks and permit only one train in a block at a time. The **Manual Block System** was developed in the 1860's and required a person to stand at the ends of each block to manually record trains entering and leaving.

The **Automatic Block Signal (ABS)** system developed in the 1870's permitted much shorter blocks than the manual block system, increasing line capacity. Block lengths are determined by planned train length and stopping distance. Stopping distances vary by terrain and train weight. Routes with longer and heavier trains need longer blocks.

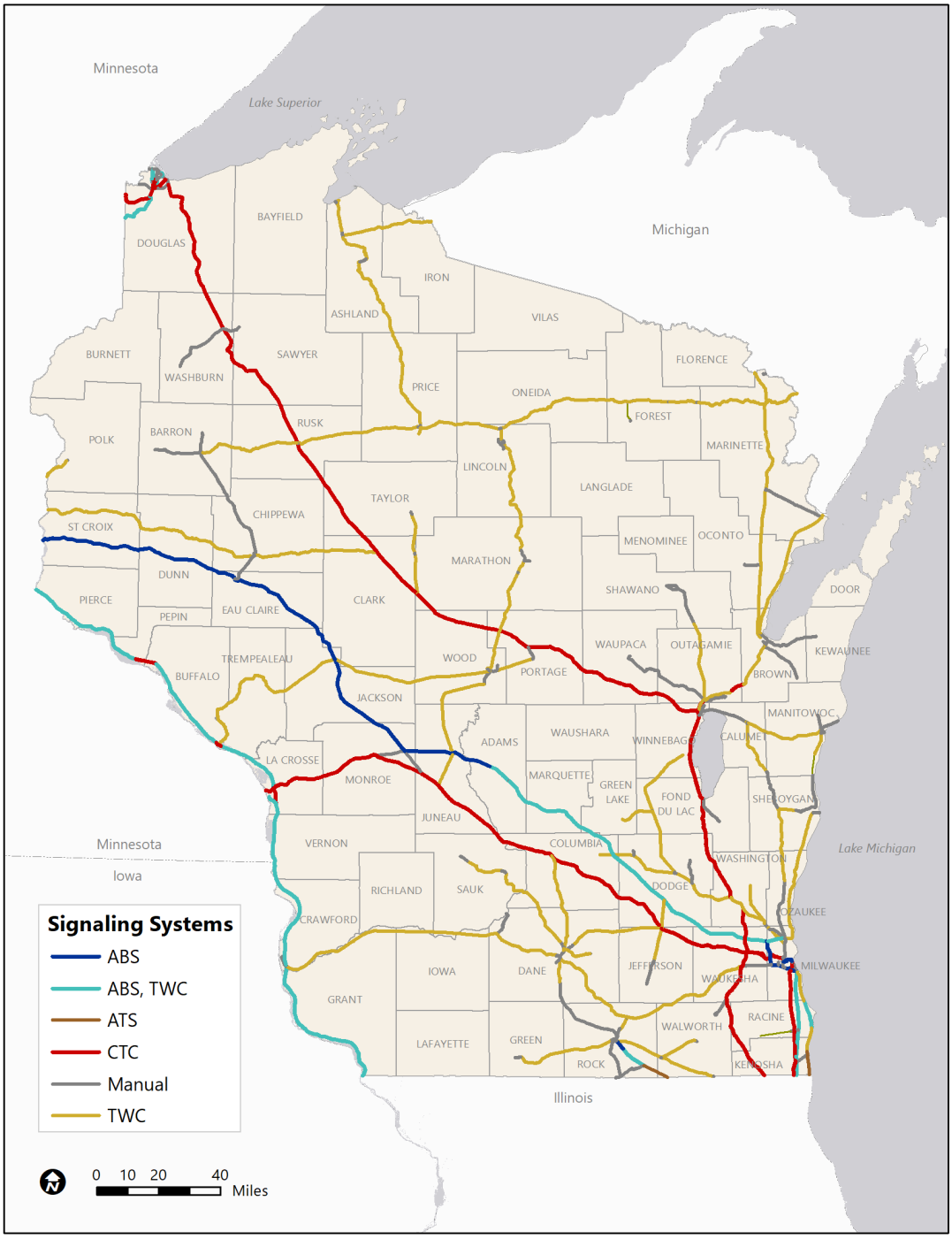
Track Warrant Control (TWC) is another type of block signaling system. The train engineer communicates with a dispatcher for approval to enter a track segment or block.[19] TWC can be used as a stand-alone dispatching and safety system in unsignalized areas or can be supplemented with ABS to increase flexibility and traffic capacity.

The **Automatic Train Stop (ATS)** system has been used for passenger trains since the 1950s. ATS uses an intermittent system that triggers an alert the train engineer must respond to within a set period of time, or the brakes are automatically applied.[20]

---

[19] *Solomon, Brian. Railroad Signaling. Minneapolis, Minnesota. Voyageur Press, 2010.*
[20] *Armstrong, John H. The Railroad: What It Is, What It Does, 5th edition. Omaha, Nebraska. Simmons-Boardman Books, Inc., 2008.*

Figure 2-4: Signaling Systems 2022[21]



[21] *Current as of June 2022*

Centralized Traffic-Control (CTC) systems use a dispatcher in a control center.[22] Corridors that use CTC can handle more traffic than those with block signaling. Single-track with CTC has about 70% of the traffic-handling capability of ABS double track.

Positive train control (PTC) uses global positioning systems (GPS) along with continuous data communications to directly control speed and distance from other trains. Not directly intended to improve capacity, PTC systems are designed to prevent train-to-train collisions, over-speed derailments, incursions into established work zones, and movements of trains through switches left in the wrong position. PTC systems also provide improved running time, greater running time reliability, higher asset utilization, and greater track capacity. The Rail Safety Improvement Act of 2008 mandated the implementation of PTC systems on Class I railroads' main lines carrying five million or more gross tons of annual traffic, those carrying certain hazardous materials, and those with intercity or commuter rail passenger traffic. [23] PTC implementation was completed in Wisconsin in 2020.

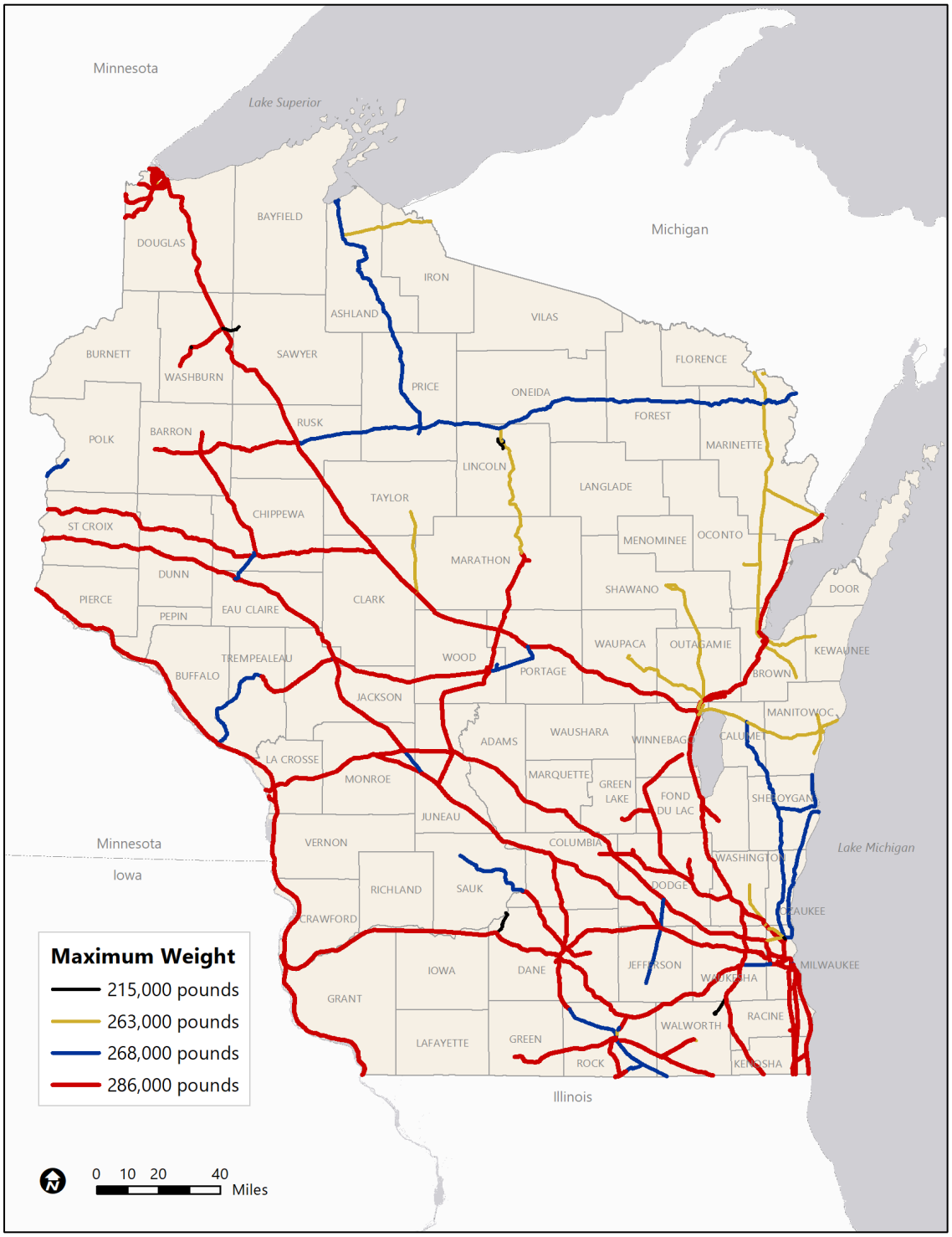
Rolling Stock and Track Weight Limits

Tracks are designed and maintained to carry a maximum car weight. Increasing the maximum car weight generally allows for rail cars with increased carrying capacity. The maximum weight ratings are set by the railroads based on the characteristics and condition of the tracks. **Figure 2.5** shows the maximum allowable weights in Wisconsin, ranging from 215,000 to 286,000 pounds. The highest weight limit on tracks in the U.S. is 315,000 pounds, which is typically limited to high traffic mainlines. The typical gross weight capacities for freight cars from Class I railroads are 263,000 pounds and 286,000 pounds.

---

[22] *Armstrong, John H. The Railroad: What It Is, What It Does, 5th edition. Omaha, Nebraska. Simmons-Boardman Books, Inc., 2008.*
[23] *Federal Railroad Administration. Positive Train Control (PTC). <https://railroads.dot.gov/train-control/ptc/positive-train-control-ptc> Accessed 1/24/2022.*

Figure 2-5: Track Weight Limits 2022



Bridges and Tunnels

Many rail bridges in Wisconsin date back to the late 1800s and early 1900s. Bridge owners are required by federal law to keep active structures in a state of good repair. The FRA requires inspections of every railroad bridge in service at least once in each calendar year (49 CFR Part 237).

Bridges and tunnels can limit capacity through weight limits and speed limits based on track weight limits and train length. Vertical clearance is important when moving double-stack freight cars under bridges or through tunnels. Double stack freight cars carry two shipping containers one on top of the other, reaching about 20 feet high.

There are 352 bridge structures on the publicly owned rail system operated by Wisconsin and Southern Railroad. The structural capacity of these bridges was rated in 2020. Two hundred ninety-one of these bridges can accommodate 286,000-pound cars at 25 mph, while 54 can accommodate 286,000-pound cars at 10 mph. There are seven structures that cannot accommodate 286,000-pound cars.

Crossings

Railroad crossings can be divided into two categories for the context of capacity and safety: grade-separated crossings and at-grade crossings. Grade-separated crossings physically separate with a bridge the roadway or pathway and the railroad which removes the interactions between railroad users and the crossing users. At-grade crossings have the roadway or pathway and railroad cross at the same level, these crossings have a greater impact on safety and capacity functions of railroad infrastructure.

The state agency that regulates public railroad crossings is the Office of the Commissioner of Railroads (OCR). The OCR determines whether to allow physical alternations to crossings and what warning devices are required at crossings. The OCR has broad discretionary powers on crossings and can issue orders that are legally binding on railroads, municipalities, and WisDOT. More information on crossings is covered in **Chapter 7 Rail Safety and Security**.

Double Tracks

Double tracks are parallel tracks within the same right of way. Three of the four Class I railroads operating in Wisconsin have some double track, adding up to about 400 miles.

Rail Yards and Terminals

A rail yard is the site where trains regularly stop to load or unload freight or assemble train sets. A freight terminal is a rail station stop along a rail line, including airports, seaports, railroad terminals, and trucking terminals. Two common types of freight terminals are intermodal and transload.

Terminals and yards serve many key functions:

- Originate and terminate traffic by building outbound trains and breaking down inbound trains
- Classify inbound cars for assignment to outbound trains for through traffic
- Offer refueling, crew change, storage, and maintenance functions

Rail capacity can be limited by the size and efficiency of terminals and yards. **Figure 2-6** shows the location of rail yards in Wisconsin. Major yards in Wisconsin are in Milwaukee, Stevens Point, La Crosse, Janesville, Fond du Lac (Shops Yard), Superior, and Portage. Smaller yards are located throughout the state. **Figure 2-7** shows intermodal and transload terminals in Wisconsin.

Intermodal Freight Terminals

Intermodal freight is characterized by moving goods over two or more different modes of transportation, such as from freight rail to truck. Intermodal rail freight terminals transfer freight without removing it from its shipping container, by moving the container from the train to another truck or ship. Intermodal freight is moved globally in reusable steel shipping containers of standard sizes.

Truck trailers on flat cars (TOFC) is a standard truck trailer loaded onto a flat rail car, hauled to a facility, unloaded, and hauled by truck to its destination. COFC (container on flat car) is a standardized shipping container loaded onto a rail car, hauled to a facility, and moved by truck to its destination. Typically, the trailer or international container remains closed or sealed.[24]

The exchange between modes depends on many factors including the type of commodity, a commodity's destination, and the length of haul. Carriers usually have a minimum length of haul to make a move financially feasible. Given Wisconsin's proximity to Chicago, the Twin Cities, and the number of large intermodal facilities located in those cities, intermodal facilities within Wisconsin are only an efficient option in limited circumstances.

---

[24] *WisDOT. Overview of Intermodal Freight in Wisconsin. 2019. <https://wisconsindot.gov/Documents/doing-bus/freight/fac/report2019.pdf>*

Figure 2-6: Freight Rail Yards 2022

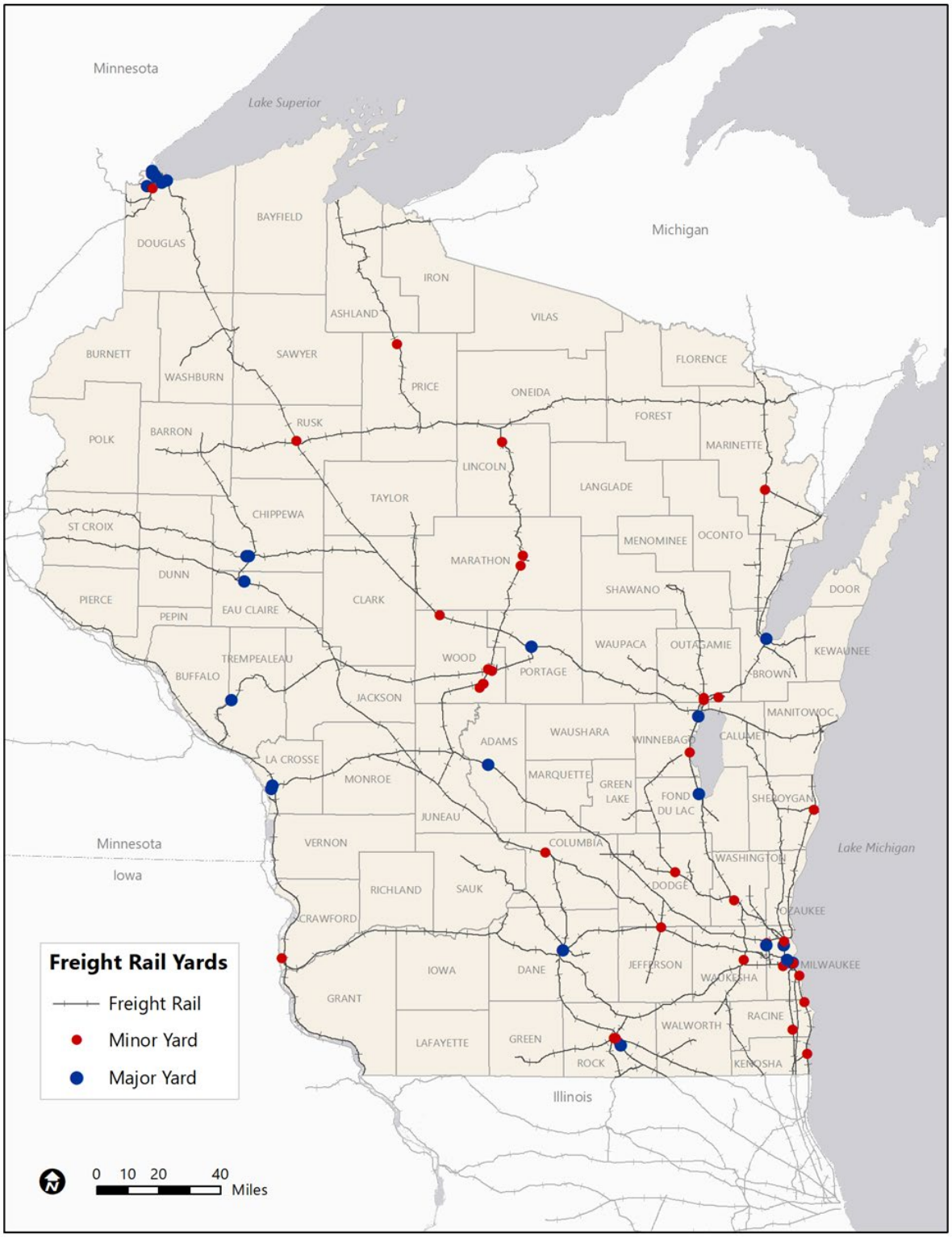
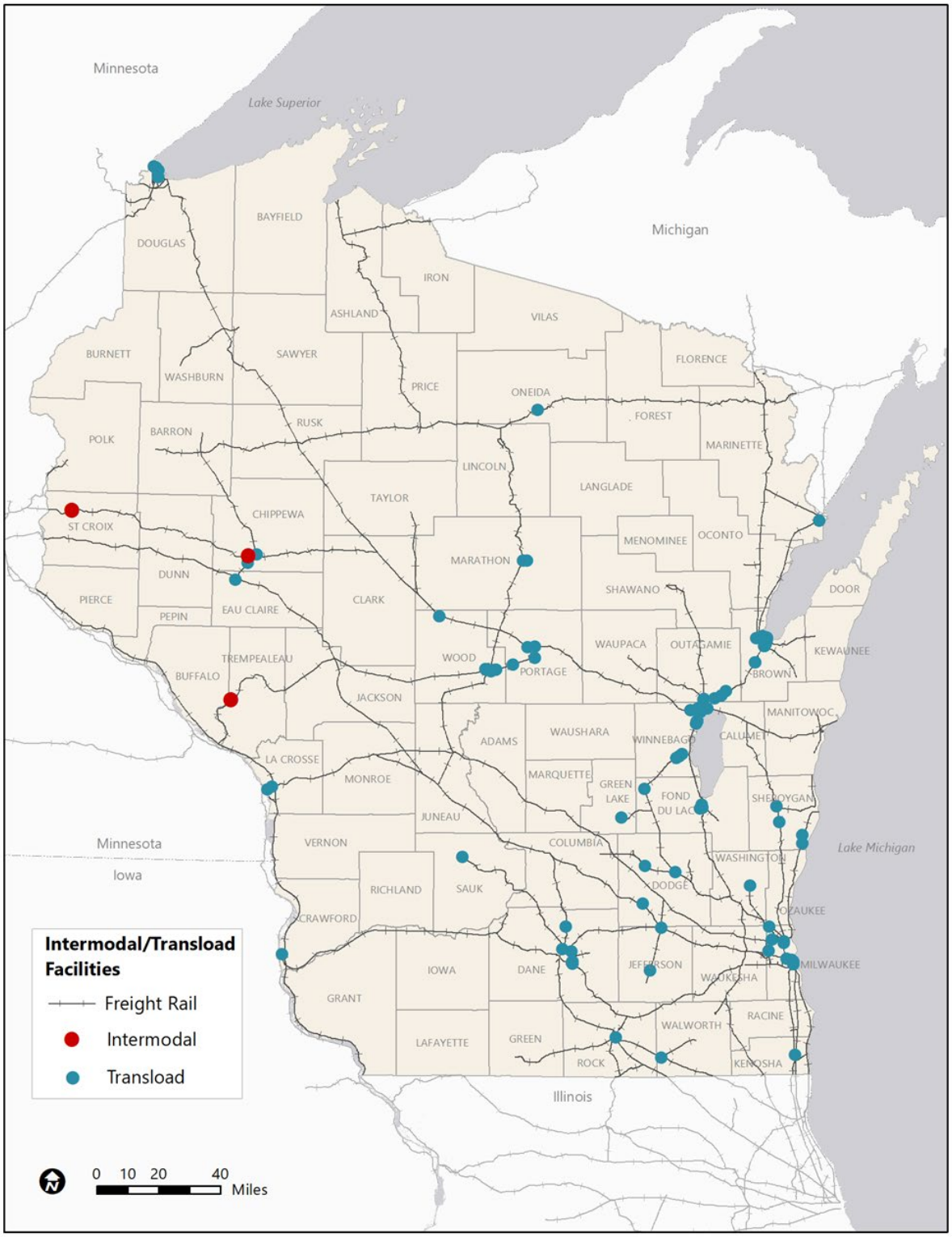


Figure 2-7: Intermodal and Transload Terminals 2022



The Canadian National Railway Company (CN) services Wisconsin's three intermodal rail facilities in Chippewa Falls, New Richmond, and Arcadia. CN also owns and operates the Chippewa Falls and New Richmond facilities. The New Richmond facility opened in 2021, connecting customers directly to the Twin Cities. It connects to CN's coastal networks and provides access to containers for exporters.[25]

Transload Freight Terminals

Transloading is another method of intermodal shipping that provides flexibility for shippers without direct rail access. Transload freight rail terminals transfer goods that are not in shipping containers from one type of transportation mode to another. Transloading is mostly used when one mode cannot be used for the entire trip and might involve bulk material, such as coal loaded on rail at the mine and then transferred to a ship at a port.

Transload facilities may have a ramp, truck scale, or equipment to move the contents from a truck to a rail car or from a barge to rail car or truck. Transload locations may also have warehouse space. There are more than 50 locations in the state where commodities can be transloaded. Not all transload facilities load onto a railroad.

Ports with Active Rail Use

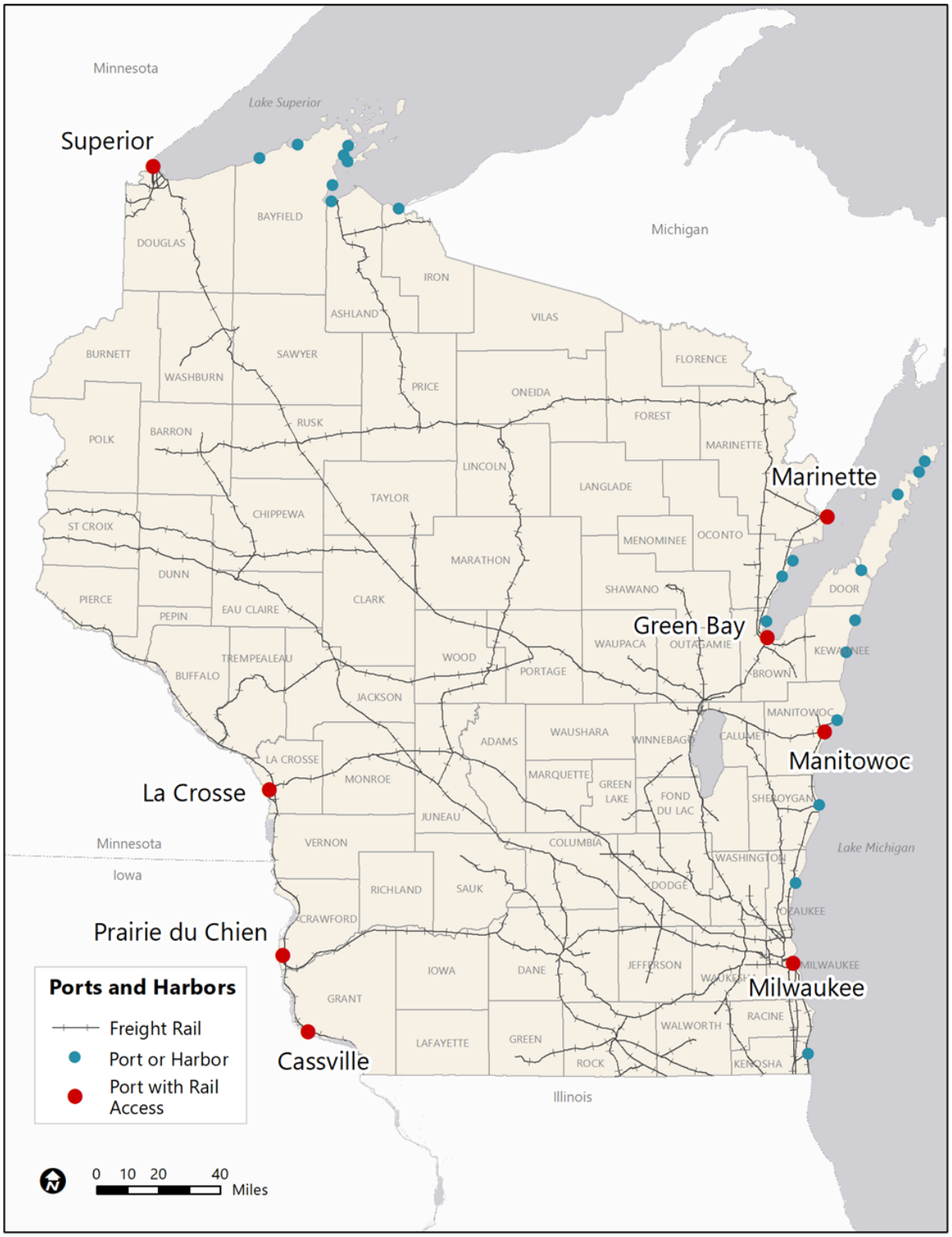
There are seven ports in Wisconsin that have active railroad access. The seven ports with active railroad line access are:

- Port of Green Bay
- Port of La Crosse
- Port Milwaukee
- Port of Prairie du Chien
- Port of Duluth-Superior
- Port of Manitowoc
- Port of Marinette

Ports often have intermodal connectors that connect a port with a roadway on the National Highway System. Ports with rail connections provide connectivity between water and railroad transportation. See **Figure 2-8** for ports with active rail access.

[25] *https://www.cn.ca/en/news/2020/12/new-cn-terminal-deepens-network-reach-in-twin-cities-and-midwest/*

Figure 2-8: Ports with Active Railroad Access 2022



Intercity Passenger Rail Stations and Service[26]

WisDOT plays a key role in planning and implementing intercity passenger rail service in Wisconsin. WisDOT began studying intercity passenger rail service in the 1970s and has undertaken several related studies and planning efforts since 1990, which have since been implemented. Amtrak currently operates two routes in Wisconsin - the Hiawatha service between Milwaukee and Chicago and the Empire Builder, a long-distance train between Chicago and Seattle or Portland. Wisconsin and Illinois provide operational funds for Amtrak's Hiawatha route and participate in the development and improvement of passenger rail stations and corridors. These routes are integrated with Amtrak's nationwide system at Chicago's Union Station. Chicago serves as the hub of Amtrak's nationwide long-distance network and the hub of its Midwest state supported corridor services (shorter distance and generally higher frequencies).

Hiawatha Service[27]

The Hiawatha provides passenger service between Milwaukee and Chicago. WisDOT and the Illinois Department of Transportation provide Amtrak state funding for operational costs. There are three Wisconsin stations: Milwaukee Intermodal Station, Milwaukee Airport Railroad Station, and Sturtevant Station.

Empire Builder Service[28]

The Empire Builder travels between Chicago and the Pacific Northwest along major portions of the Lewis and Clark Trail. The Empire Builder is Amtrak's most popular long-distance train. It provides one daily round trip between Chicago, Milwaukee, Minneapolis/St. Paul, and Seattle or Portland. Wisconsin's six stations are in Milwaukee, Columbus, Portage, Wisconsin Dells, Tomah, and La Crosse. Amtrak provides the Empire Builder service as part of its national network without financial support from any state.

Thruway Bus Service Connecting to Amtrak Train Service

In addition to intercity passenger rail service, Amtrak also provides connecting intercity bus service through interlining agreements with private bus companies, known as Amtrak Thruway. Bus service extends Amtrak service to parts of the state not directly served by Amtrak trains,

---

[26] *More details on intermodal passenger rail services are in* Chapter 5 Intercity Passenger Rail Service – Corridor and Long-distance
[27] *www.amtrakhiawatha.com*
[28] *Empire Builder Train | Amtrak*

allowing people to travel to a rail station by intercity bus. Passengers purchase a single ticket for both the train and bus portions of their trip.

Commuter Rail Stations and Service[29]

Metra is the only commuter rail provider operating in Wisconsin. Metra is a regional commuter rail system serving the greater Chicago area. It serves over 100 communities with 239 stations on 11 lines. Daily service is run between Kenosha and downtown Chicago on the Union Pacific North Line. This is the only Metra stop in Wisconsin. The Kenosha Metra station is served by local transit and regional commuter bus service. Four other Metra commuter rail stations are located near the Wisconsin border:

- Antioch, Illinois – North Central service line
- Fox Lake, Illinois – Milwaukee District North line
- Harvard, Illinois – Union Pacific Northwest line
- McHenry, Illinois – Union Pacific Northwest line

Railroad Usage, Preservation, Abandonments, and Interim Trail Use

Rail lines can generally be categorized as active, discontinued, abandoned, or classified as interim trail use. Railroad service status is overseen and regulated by the Surface Transportation Board (STB), an independent federal agency. The STB serves as both an adjudicatory and a regulatory body, with jurisdiction over railroad rate and service issues and rail restructuring transactions including mergers, line sales, line construction, and line abandonments. The STB balances the economic burden of continued operation against the public's need for the service. [30]

Some of the regulations applicable to railroad operators are known as common carrier obligations, requiring a carrier to provide transportation upon reasonable request using the carrier's pre-established rates and terms of service. When a rail line is active, the operator is required to fulfill its common carrier obligations. The STB is the authority that exempts rail lines from common carrier obligations after a statutory process that includes public hearings. WisDOT provides technical assistance in some STB determinations but does not have decision-making authority.

---

[29] *Commuter rail service is discussed in detail in* ***Chapter 4 Commuter Rail***

[30] *WisDOT Guide to Railroad Abandonments in Wisconsin.* 2019. <*https://wisconsindot.gov/Documents/doing-bus/freight/rr-abandon.pdf*>

The railroad usage statuses overseen by the STB are:

- An **active** line is in use and subject to the common carrier obligations.
- A **discontinuance** is an exemption from common carrier obligations granted by the STB. For a class exemption the line must have been out of service for two or more years. An individual exemption may also apply to a line.
- An **abandonment** is a step further whereby the STB grants an exemption from common carrier obligations and extinguishes a corridor's status as a railroad.

Although out-of-service lines and low-density lines are considered active, they may indicate a line is at-risk for discontinuance or abandonment. Out-of-service is an unofficial status where a railroad is not operating trains or there is an embargo on a portion of track. STB considers a low-density line a Class I rail line that carries less than five million gross tons of freight. (**Figure 2-9** and **Table 2-1**)

Abandonment

While abandonments still do occur, they have differed from earlier abandonments of the late 1970s and early 1980s where entire corridors were abandoned. Recent abandonments are often stub-ended spurs only a few miles in length. Municipalities are often interested in these segments for recreational trails. Rail carriers must go through a process with the STB to discontinue or abandon a line. The abandonment process includes public hearings.[31] There are several federal and state programs available to avoid abandonment, including the Feeder Line Development Program, Freight Railroad Preservation Program (FRPP), and Freight Railroad Infrastructure Improvement Program (FRIIP).[32]

There are several options to preserve rail service or a railroad corridor before it is officially abandoned. These options include:[33]

- Purchase by or for a new railroad operator
- Public purchase for future service, by either WisDOT alone or with a local partner (e.g., a Rail Transit Commission)
- Interim Trail Use (e.g., Rails-to-Trails)
- Other public purchase (e.g., rail banking for public use)

---

[31] *WisDOT Guide to Railroad Abandonments in Wisconsin.* 2019. <https://wisconsindot.gov/Documents/doing-bus/freight/rr-abandon.pdf>
[32] *See* Chapter 12 Detail of Programs to Implement the Plan *for more information about rail funding programs.*
[33] *WisDOT Guide to Railroad Abandonments in Wisconsin.* 2019. <https://wisconsindot.gov/Documents/doing-bus/freight/rr-abandon.pdf>

The STB has the authority to officially reactivate an abandoned line.

Once a rail property has been abandoned WisDOT has the first right of acquisition for present or future transportation or recreational purposes per Wisconsin State Statute 85.09. This right may be transferred to another state agency, the Board of Regents of the University of Wisconsin System, any county or municipality or any transit commission.

Interim Trail Use (Rails-to-Trails)

Short of abandonment, railroad corridors can be preserved for interim trail use. Railroad corridors that are part of this program retain their character as rail corridors and may be reactivated under the STB's process at any time. Under 49 CFR 1152.29 and the National Trails System Act (16 USC 1247(d)) the STB may defer an abandonment to give interested parties the opportunity to negotiate a voluntary agreement with the abandoning railroad for interim use of the right of way for recreational purposes. In these cases, WisDOT works with the Wisconsin Department of Natural Resources (DNR), rail transit commissions (RTCs), and local governments to preserve the rail corridor for future rail transportation use. If approved by the STB and agreed to by the abandoning railroad, a Notice of Interim Trail Use (NITU) is issued and, providing the parties reach agreement, the abandonment does not occur.

A benefit of preserving these former rail rights-of-way as trails is the option of converting them back to active rail use. STB's process for converting trails back to rail transportation use weighs the potential economic benefits and tradeoffs between the trail and rail alternatives.

Figure 2-9: Out-of-Service, Discontinuance, Interim Trail Use, and Low-Density Lines 2022[34]



[34] *As used on this map, low-density lines are lines carrying less than five million tons of freight yearly, regardless of railroad size*

Table 2-1: Discontinuance, Interim Trail Use, and Abandonment Activity 2010-2022

Segments	RR	Year	County	Miles	Type of Change
City of Sheboygan	UP	Pending	Sheboygan	1.30	Rails to Trails
Sturtevant - Kansasville (Waxdale)	CP	2021	Racine	10.12	Rails to Trails
Kaukauna	CN (WCL)	2020	Outagamie	0.10	Rails to Trails
Kaukauna	CN (WCL)	2020	Outagamie	1.10	Rails to Trails
Argonne - Crandon	CN (WCL)	2020	Forest	6.40	Rails to Trails
Biron	CN (WCL)	2020	Wood	1.46	Abandoned
Park Falls - Ashland	CN (WCL)	2018	Ashland, Price	58.4	Discontinuance
Rhinelander - Goodman	CN (WCL)	2017	Oneida	49.0	Discontinuance
Tomahawk	CN (WCL)	2017	Lincoln	0.5	Abandoned
New London - Manawa	CN (WCL)	2017	Waupaca	10.3	Discontinuance
Sauk Sub (Sauk City - Badger Ammo)	WSOR	2017	Sauk	13.2	Interim Trail Use
Rice Lake	CN (WCL)	2015	Barron	0.8	Interim Trail Use
Capitol Industrial Lead	UP	2015	Milwaukee	2.9	Interim Trail Use
Kaukauna	CN (WCL)	2015	Outagamie	1.1	Interim Trail Use
Ashland	CN (WCL)	2014	Ashland	0.5	Abandoned
Neenah	CN (WCL)	2013	Winnebago	0.2	Abandoned
Menomonie Industrial Lead	UP	2013	Dunn	0.6	Interim Trail Use
Hayward (tail end of Hayward Industrial Spur)	CN (WCL)	2013	Sawyer	1.8	Interim Trail Use
Green Bay (Howard Spur)	CN (WCL)	2013	Brown	1.0	Abandoned
Weston	CN (WCL)	2012	Marathon	1.1	Interim Trail Use
Newton - Cleveland	CN (WCL)	2012	Manitowoc	6.8	Interim Trail Use
Fond du Lac	CN (WCL)	2012	Fond du Lac	0.2	Interim Trail Use
Fond du Lac	CN (WCL)	2012	Fond du Lac	0.4	Abandoned
Green Bay	CN (WCL)	2011	Brown	1.5	Interim Trail Use
White Lake	CN (WCL)	2011	Langlade	2.8	Abandoned
Denmark	CN (WCL)	2010	Brown	0.3	Interim Trail Use

Manitowoc County (sold to Burger Boat Co.)	CN (WCL)	2010	Manitowoc	1.2	Abandoned
Kaukauna	CN (WCL)	2010	Outagamie	1.9	Abandoned

Railroad Owners and Operators Active in Wisconsin

Railroad Owners

Railroad infrastructure is predominately privately owned. However, there are about 600 miles of publicly owned track in Wisconsin. The institutional structure of the rail industry in North America is different from the other transportation modes. Highway, air, and water transportation infrastructure have typically been the subject of public planning studies and policy development efforts and are generally publicly owned and maintained. In contrast, many rail operators provide not only the service, but also maintain and control the tracks and other facilities required for service. **Figure 2-10** shows a map of company ownership of track in Wisconsin.

Other Ownership Arrangements

Most rail lines are owned by the railroad carriers operating over those lines, but some rail lines in Wisconsin are owned by private third parties or are publicly owned. Small railroad ownership takes on different forms, of which many are represented by one or more Wisconsin railroads. These forms of ownership include industry, holding company, independent, and public.

Industry

An industry owned rail line is usually operated for one firm or industry but can provide service to other unrelated firms. The most common owners are steel and forest products companies.

Holding Company

A holding company is a corporation that holds ownership of other rail companies. There are three holding companies in Wisconsin that own short line railroads, including Watco, Genesee & Wyoming (GWI), and Progressive Rail. Watco owns and operates Wisconsin & Southern and Fox Valley and Lake Superior[35], as well as 29 other lines in North America. GWI owns and operates the

[35] *The Surface Transportation Board approved Watco's purchase of about 650 miles of branch lines in Wisconsin and Michigan from Canadian National-owned Wisconsin Central in December 2021.*

Tomahawk Railway in Wisconsin, as well as 110 other lines on three continents. Progressive Rail operates Wisconsin Northern, one of its nine lines across five Midwestern states.

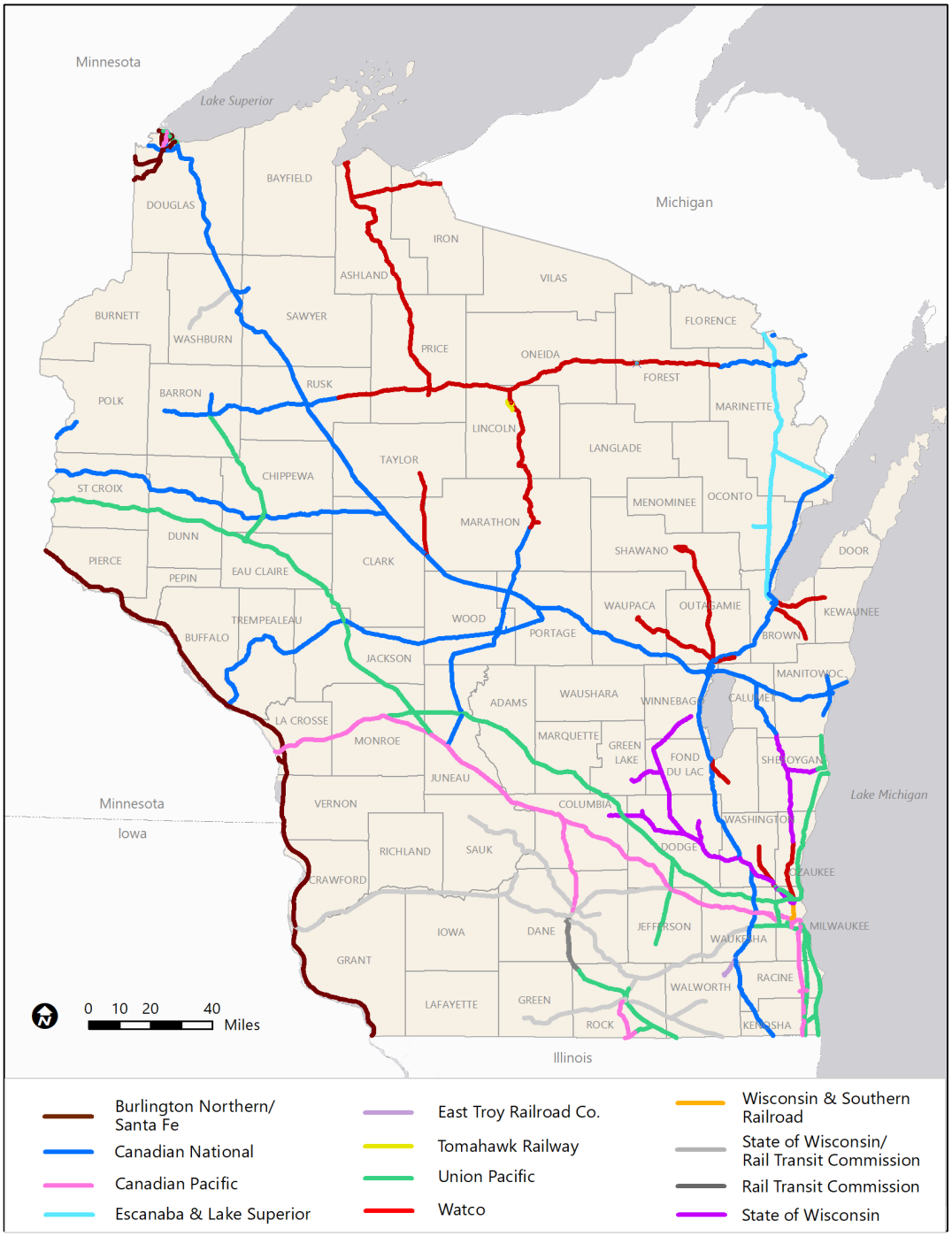
Independent

Independent railroads are independently owned and operated with the underlying infrastructure either directly owned by the operator or by a third party, such as a Class I railroad or public agency. Some independent railroads, such as East Troy Scenic Rail Line, the National Railroad Museum in Green Bay, the Osceola and St. Croix railroad, and the Wisconsin Great Northern railroad operate tourism-oriented railroad services.

Public

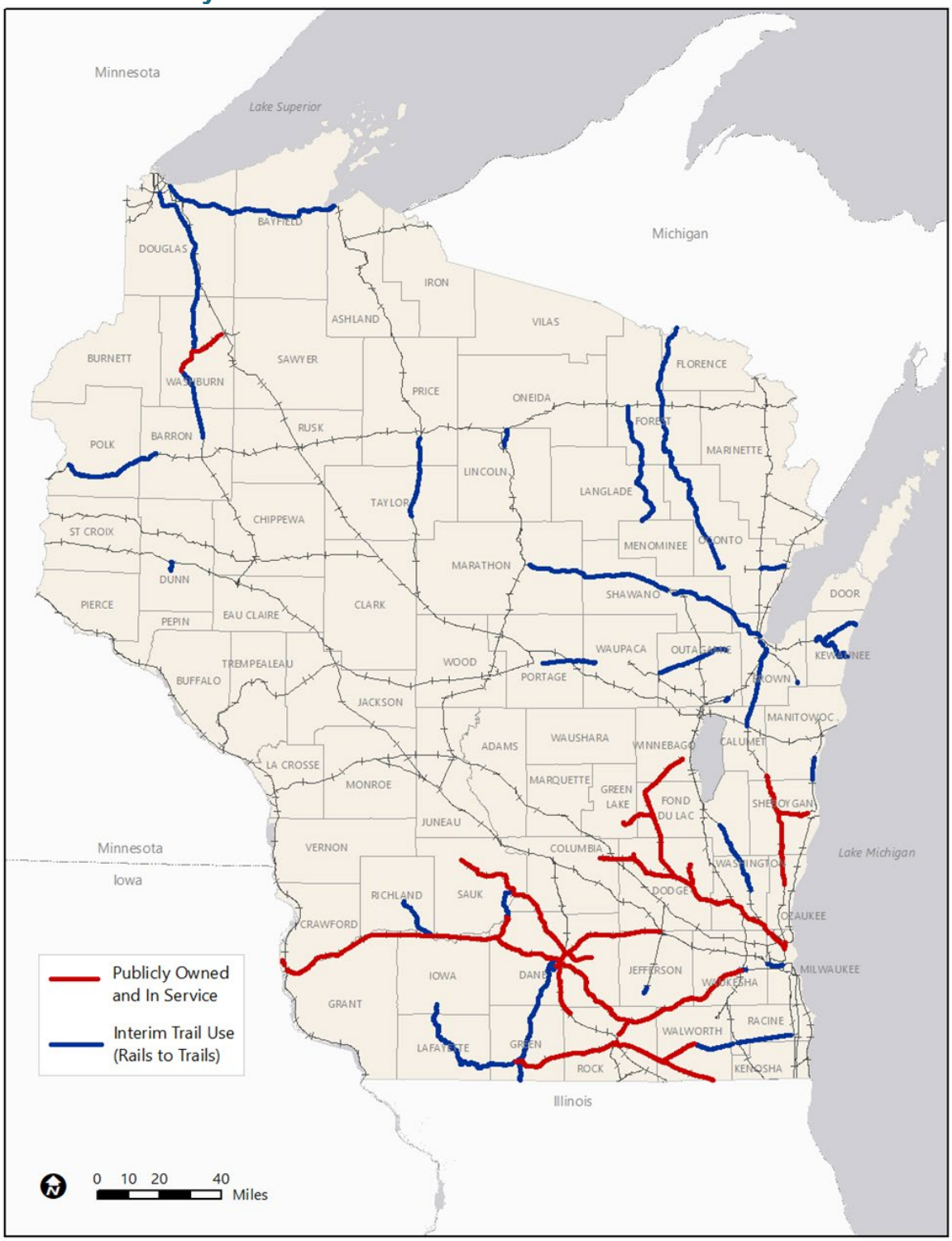
This category includes ownership by a state, county, city, municipality, rail transit commission, or even the federal government (typically for military purposes). Two Wisconsin railroads have agreements to operate over track that is owned by a rail transit commission (**Figure 2-11**). Wisconsin & Southern and Wisconsin Great Northern Railroad operate on publicly owned rail lines. Rail corridors preserved in interim trail use are also publicly owned, and may be owned by WisDOT, local units of government, or rail transit commissions.

Figure 2-10: Railroad Ownership 2022[36]



[36] *Current as of June 2022*

Figure 2-11: Publicly Owned Rail Lines 2022



Rail Transit Commissions (RTCs)

Viable rail lines are sometimes purchased by the state or local governments to retain freight service to Wisconsin shippers. Wisconsin has around 600 miles of publicly owned railroads that are owned by the state, Rail Transit Commissions, local governments, or a combination of public entities.

Rail Transit Commissions are made up of various counties served by rail and were created under the provisions of Wisconsin Statutes 59.968 and 66.30 to preserve and continue freight rail service throughout the state. Rail transit commissions can acquire corridors and rehabilitate tracks; operate and maintain rail lines; lease lines to a private railroad operator; or contract with a railroad operator to use the rail lines.[37] The state's publicly owned lines and the corresponding RTCs are depicted in **Table 2-2** and **Figure 2-12**.

For state owned railroad corridors much of the responsibility for railroad operations and management is conferred on RTCs, which contract with private railroads for service. The contracts typically pass nearly all the responsibility for the operation, maintenance, and liability on to the railroad. Most RTCs are multi-county, however some are single county in partnership with the municipalities within the county.

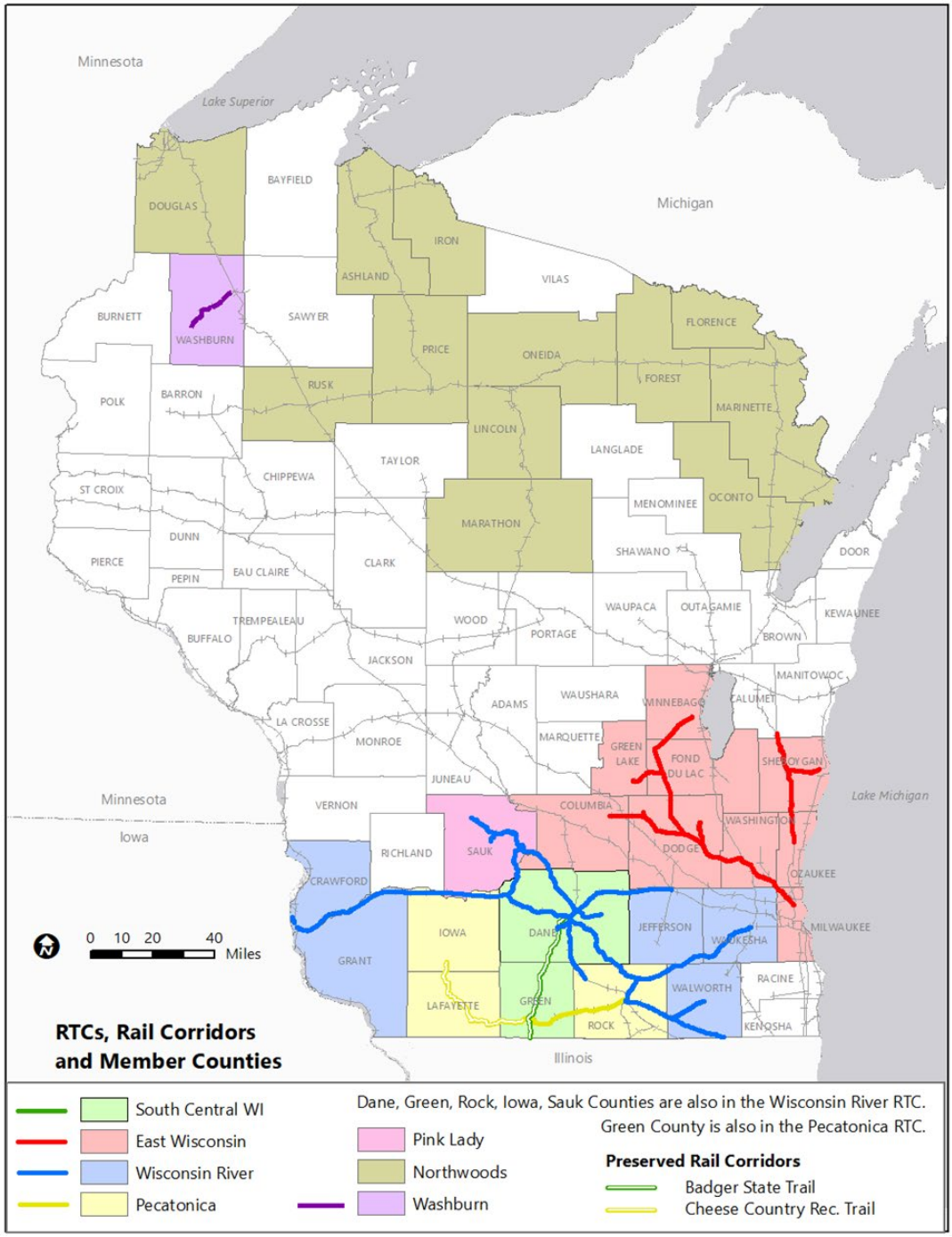
RTCs are staffed by their member counties, municipalities or by regional planning commission staff. RTCs continue to be an important partner with WisDOT in preserving rail service. WisDOT provides resources, real estate management, information, staff support, general oversight, and funding. The commissions provide project management, matching funds, and coordination with shippers, freight rail operators and local governments.

[37] *Wisconsin River Rail Transit Commission. <http://www.wrrtc.org/about-rtc-s> Accessed January 31, 2022.*

Table 2-2: Rail Transit Commissions 2022

Name	Created	Counties	Purpose
Pecatonica Rail Transit Commission	1978	Green, Iowa, Lafayette, Rock	Administers 34 miles of rail corridor line operated by WSOR between Monroe and Janesville, and the Cheese Country Recreational Trail
South Central Wisconsin Rail Transit Commission	1978	Dane, Green	Manages 59 miles of rail corridor that is in interim trail use as the Badger State Trail
Wisconsin River Rail Transit Commission	1980	Crawford, Dane, Grant, Iowa, Jefferson, Rock, Sauk, Walworth, Waukesha	Administers 278 miles of rail line. Contracts with WSOR for service
East Wisconsin Counties Railroad Consortium	1980	Winnebago, Dodge, Green Lake, Washington, Fond du Lac, Columbia, Ozaukee, Sheboygan, Milwaukee	Administers 198 miles of railroad corridors. Contracts with WSOR for operations
Pink Lady Rail Transit Commission	1988	Sauk County, City of Baraboo, City of Reedsburg, and Village of Prairie du Sac	Works with WSOR, communities, and shippers to maintain area rail service
Washburn County Rail Transit Commission	1998	Washburn	Manages 18 miles of line; has an operating agreement with the Wisconsin Great Northern Railroad
Northwoods Rail Transit Commission	2012	Ashland, Douglas, Florence, Forest, Iron, Lincoln, Marathon, Marinette, Oconto, Oneida, Price, Rusk	Organized to improve local rail service for the communities of northern Wisconsin and the Upper Peninsula of Michigan

Figure 2-12: Rail Transit Commissions and Managed Corridors 2022[38]



[38] *Owned by the Wisconsin Department of Natural Resource, the Elroy-Sparta State Trail is not in interim trail use and therefore is not on this map.*

Railroad Operators

Railroad carriers are typically categorized by measures of size and geographic reach. This classification is important in that carrier size is a determinant of the rail services that are available within a region, competitive posture, market access, physical condition of rail infrastructure and rolling stock, and financial strength. The Association of American Railroads classifies U.S. freight railroads based on a combination of revenues and carrier characteristics. For regulatory purposes, the STB uses a classification that is based on operating revenues.[39]

Using the STB's definition, railroads serving Wisconsin are classified as Class I, Class II, or Class III. Class I railroads are typically national railroads, while Class II and Class III are considered short line railroads. Class II are also called regional railroads, while Class III are also called local railroads. Terminal and switching railroads are also categorized as short line railroads, though they do not provide point-to-point hauling services. See **Figure 2-13** for a map of companies operating rail service in Wisconsin.

Class I

Class I railroad carriers must have operating revenue in 2020 of at least $900 million. Currently there are seven Class I railroads in the U.S., four of which have operations in Wisconsin:

- Burlington Northern Santa Fe (BNSF)
- Canadian National (CN) / Wisconsin Central, LTD
- Canadian Pacific (CP) / Soo Line Railroad
- Union Pacific (UP)

Class II and III: Regional and Short Line Railroads

Short line railroads are small or mid-size railroads that operate over relatively short distances compared to national Class I railroads. Most short line railroads are Class II and Class III railroads but there are also switching and terminal railroads classified as short lines. Wisconsin has one Class II railroad and six Class III railroads. Switching and terminal railroads are often categorized with short line railroads due to their operational and revenue characteristics, except in cases where they are owned by one or more Class I carriers

[39] *Surface Transportation Board. Economic Data. <https://www.stb.gov/reports-data/economic-data/#:~:text=Current%20thresholds%20establish%20Class%20I,revenue%20less%20than%20%2440.4%20million.> Accessed 1/31/2022.*

Figure 2-13: Railroad Operators 2022[40]



[40] *Current as of June 2022*

Class II (regional) railroads have annual revenues in 2020 between $40.4 million and $900 million. Wisconsin has one regional Class II railroad, Wisconsin & Southern Railroad.

Class III (local) railroads have annual operating revenues in 2020 of $40.4 million or less and generally perform point-to-point service over short distances. Most operate less than 75 miles of track in a single state. There are five Class III railroads in Wisconsin:

- Escanaba & Lake Superior (ELS)
- Municipality of East Troy Railroad Company (METWR)
- Wisconsin Northern (WNR)
- Tomahawk Railway (TR)
- Wisconsin Great Northern (WGN)

Switching or terminal railroad are railroads engaged primarily in switching and/or terminal services for other railroads (i.e., they are not typically involved in line-haul moves between two geographical locations). Switching and terminal railroads are often categorized with short line railroads due to their operational and revenue characteristics, except in cases where they are owned by one or more Class I carriers. Rail + Transload, Inc. (located in Watertown), Madison Terminal Railway, and Port Milwaukee are terminal or switching railroads.

Table 2-3: Railroad Operating Mileage[41]

Railroad		Parent company/ owning agency	Miles of railroad operated in Wisconsin (2022)[42]
Class I Railroads			
Burlington Northern Santa Fe Railway Company	BNSF	Berkshire Hathaway	245
Canadian Pacific	CP	N/A	301
Union Pacific Railroad Company	UP	N/A	595
Canadian National	CN	N/A	861
Class II and III Railroads			
Escanaba & Lake Superior Railroad Company	ELS	N/A	121
Municipality of East Troy Wisconsin	METWR	N/A	7
Wisconsin Northern Railroad	WNR	Progressive Rail, Inc.	38
Tomahawk Railway Limited Partnership	TR	Genesee & Wyoming	8
Wisconsin & Southern Railroad Company	WSOR	Watco	625
Fox Valley and Lake Superior Railroad	FVLS	Watco	459
Wisconsin Great Northern Railroad, Inc.	WGN	N/A	26
Switching and Terminal Railroads			
Madison Terminal Railway		N/A	1
Port Milwaukee		N/A	1
Rail + Transload, Inc.	RTI	N/A	1
Total Miles of Railroad Operated			**3,289**

[41] *Current as of June 2022*

[42] *AAR "Freight Railroads in Wisconsin" factsheet. 2021 < https://www.aar.org/wp-content/uploads/2021/02/AAR-Wisconsin-State-Fact-Sheet.pdf> Accessed 2/1/2022. and materials provided by AAR to WisDOT staff via email May 17, 2021.*

Operational Agreements

Railroads have developed several methods to extend their reach over each other's lines to satisfy shipper needs and achieve corporate efficiency goals. These agreements are important for understanding the railroad industry and options available to shippers and are subject to change frequently. Current agreements, particularly trackage rights agreements, are noted in railroad profiles. Many railroads depend upon operational agreements for the movement of goods across their networks and to access important terminals such as Chicago.

- **Joint rate-route** involves two railroads setting one rate from an origin on the first rail line to a destination on the second rail line. Agreements are subject to STB regulation and are a matter of public record.
- **Trackage rights** agreements are subject to STB regulation and are a matter of public record. Under this type of arrangement, the owning railroad retains all rights but allows another railroad to operate over sections of its track. Trackage rights can be "full service," where the tenant has the right to serve shippers on the owner's line, or "overhead" or "bridge" meaning that the tenant cannot carry freight to and from the owner's customers.[43] Trackage rights can be temporary or long-term. Temporary rights agreements are typically made when a disaster affects one railroad while a parallel railroad line is fully operational. Long-term agreements can be made to allow competing railroads access to potentially profitable shippers or to act as a bridge route between otherwise disconnected sections of another railroad. Unlike joint route/rate, trackage rights agreements specify that the tenant railroad is solely responsible to the shipper for providing transportation service and for loss and damage to the freight.
- **Haulage rights** separate the marketing and operations of a railroad. The railroad receiving haulage rights has control of marketing, negotiating the rate with the customer over the entire route. It also supplies the cars and is responsible for loss and damage. The owning railroad granting the haulage rights retains direct control over operations. It provides the track, train crews, dispatching services, and sometimes the locomotives. In return, the host railroad gets a cents-per-unit payment for each car moved. Haulage rights are outside of the STB's trackage rights jurisdiction and are not a matter of public record.

[43] *Blaszak, Michael W. 2006. Trackage and haulage rights. <https://www.trains.com/trn/train-basics/abcs-of-railroading/trackage-and-haulage-rights/> Accessed 1/31/2022.*

Railroad Profiles[44]

Burlington Northern Santa Fe Railway

Burlington Northern Santa Fe's (BNSF's) 32,500-mile network covers 28 states in the western U.S. and two Canadian provinces and is the largest railroad in North America. It connects to eastern North American markets through five gateways (Chicago, St. Louis, Kansas City, Memphis, and New Orleans) and several other interchange locations. North American service is provided through connections with Canadian and Mexican railroads. BNSF has 25 intermodal facilities and serves over 40 ports. BNSF is headquartered in Fort Worth. [45]

BNSF operates about 245 miles of railroad in Wisconsin which is mostly double tracked. [46] BNSF's main Wisconsin line connects Chicago and the Twin Cities via the Mississippi River Valley from East Dubuque, through Prescott (Pierce County). Only a small percentage of BNSF traffic originates or terminates in Wisconsin. The predominant commodity terminating in Wisconsin is coal from the western United States at the Port of Superior.

Canadian National

Canadian National Railway (CN) is headquartered in Montréal and operates the largest rail network in Canada. The railroad operates approximately 20,000 miles of rail lines in eight Canadian provinces and 16 U.S. states. Through acquisitions, CN has developed an extensive network in the central United States along the Mississippi River Valley from the Great Lakes to the Gulf of Mexico. CN serves the ports of Vancouver and Prince Rupert; Montréal; Halifax; Duluth/Superior, New Orleans and Mobile. CN provides a north–south connection between Chicago and New Orleans.

CN is the largest carrier of iron ore in North America. CN also owns a rail corridor through the Chicago suburbs that essentially bypasses Chicago's congestion and allows trains to travel south without delays or interchanges in Chicago.

CN operates around 1,362 miles of rail lines in Wisconsin as part of its North Division. CN owns, operates and services two public intermodal facilities at Chippewa Falls and New Richmond, and services one private intermodal facility owned and operated by Ashley Furniture in Arcadia.

---

[44] Most railroad profiles are current as of July of 2021. CN and Watco's profiles were updated to reflect the creation of the Fox System in 2022.
[45] BNSF Railway 2020 Factsheet. <https://www.bnsf.com/bnsf-resources/pdf/about-bnsf/fact_sheet.pdf> Accessed 1/25/2022.

Canadian Pacific Railway

Canadian Pacific Railway's (CP) network spans 14,000 miles in Canada and the United States. CP provides service from coast to coast along an east–west corridor from Vancouver to Montréal. CP has port operations in Vancouver, Montréal, Philadelphia, and New York City. More than one-half of CP's freight traffic is coal, grain, and intermodal freight. It also ships automotive parts and automobiles, sulfur, fertilizers, other chemicals, forest products and other types of commodities.

In Wisconsin, CP operates 301 miles of rail lines. CP's mainline connects Chicago, Milwaukee, and the Twin Cities via La Crosse. It is a key link in CP's rail service from Vancouver to Chicago. CP has six transload facilities in Wisconsin; Milwaukee, Kenosha, La Crosse, Reeseville, Windsor, and Watertown.[47] CP's mainline through Wisconsin serves as the route of Amtrak's Empire Builder service between Chicago and the Twin Cities, as well as the route of Amtrak's Hiawatha service between Milwaukee and Chicago.

Union Pacific Railroad

Union Pacific Railroad (UP), headquartered in Omaha, Nebraska, is the second largest railroad in North America. The railroad operated 32,200 route miles in the United States. [48] The railroad serves 23 states, every major West Coast and Gulf Coast port, and the five largest gateways between the eastern and western U.S. at Chicago, St. Louis, Memphis, Kansas City, and New Orleans. The railroad's commodity mix includes chemicals, coal, food and food products, forest products, grain and grain products, metals and minerals, automobiles and parts, and intermodal. With access to the coal-rich Powder River Basin in Wyoming and coalfields in Illinois, Colorado, and Utah, the railroad moves more than 250 million tons of coal annually.

The railroad operates approximately 595 miles of rail lines in Wisconsin.[49] UP leases track to Progressive Rail Inc. and operates roughly 334 additional miles through trackage rights. UP's main rail line through Wisconsin connects Chicago, Milwaukee, and the Twin Cities via Eau Claire. Another spoke reaches Evansville in southern Wisconsin. UP also operates over 14 miles in Rock County, between Beloit and Janesville. This subdivision has a connection to WSOR in Janesville.

Major commodities shipped from Wisconsin by UP include grain, sand, stone and gravel, and wheat and flour. Major commodities received by UP in Wisconsin include coal, lumber and

---

[47] *CP Wisconsin State Profile. 2018. Canadian Pacific Railroad. <https://www.cpr.ca/en/about-cp-site/Documents/profiles/CP-State-Profile_WIS.pdf> Accessed 1/25/2022*
[48] *Union Pacific Company Overview. <https://www.up.com/aboutup/corporate_info/uprrover/index.htm> Accessed 1/25/2022.*
[49] *Union Pacific in Wisconsin Fact Sheet. 2021. Union Pacific pdf_wisconsin_usguide.pdf (up.com) f> Accessed 6/13/2022.*

building materials, non-metallic minerals, and plastics.[50] UP has three major intermodal facilities in the Chicago metropolitan area that are important terminals for intermodal shipments heading to and from Wisconsin.

Metra commuter rail service also operates on UP tracks.

Escanaba and Lake Superior Railroad Company

Escanaba & Lake Superior Railroad (ELS) is a Class III short line carrier based in Wells, Michigan. Commodity traffic includes wood pulp, pulpwood logs, oriented strand board, lumber, flooring, canned goods, steel, scrap metal, aggregate, chemicals, and agricultural products. ELS's system is comprised of one primary line and two branch lines. The primary line stretches 196 miles north - south connecting Green Bay with Rockland, Michigan. Key Wisconsin branches are the six-mile Stiles Junction to Oconto Falls line, and the 21-mile Crivitz to Marinette/Menominee at the Wisconsin/Michigan border.

The railroad has connections with CN in Green Bay and switching service to CN in Marinette/Menominee and Pembine. The ELS operates over trackage rights on CN from North Escanaba to Pembine connecting with it in four locations: Green Bay, Pembine, Escanaba, and Iron Mountain, Michigan. Other lines connecting to the main and utilized primarily for the storage of private rail car fleets include Channing to Escanaba, Sidnaw to Nestoria, and Crivitz to Marinette.[51]

Municipality of East Troy Railroad

East Troy Electric Railroad is a common carrier railroad operating over seven miles of track. The line runs from East Troy to Mukwonago, where it connects to CN. East Troy Railroad operations include tourist focused excursion trains.

Watco

Watco is a single-source transportation and supply chain services company with numerous subsidiary short line railroads throughout the United States.[52] Watco owns or operates over 5,500 miles of short line track in North America and Australia, which connects to all the Class I railroads.

---

[50] Union Pacific in Wisconsin Fact Sheet. 2021. Union Pacific pdf_wisconsin_usguide.pdf (up.com) Accessed 6/13/2022.
[51] Escanaba & Lake Superior Railroad. <http://www.elsrr.com/about.htm> Accessed 7/15/2021.
[52] WATCO. <https://www.watco.com/about/> <https://www.watco.com/service/rail/> Accessed 1/31/2022.

Watco is the parent company of Wisconsin and Southern Railroad (WSOR) and the Fox Valley and Lake Superior Railroad.

Wisconsin and Southern Railroad

Wisconsin and Southern Railroad (WSOR), a subsidiary of Watco, is the main operator of Wisconsin's state-owned lines. WSOR is headquartered in Milwaukee, where all dispatching duties are carried out. Branch offices are in Madison, Janesville, and Horicon, with locomotive maintenance centered in Janesville.

WSOR's network spans over 21 counties and 583 miles in southern Wisconsin and northeastern Illinois. The network is comprised of trackage owned by the railroad, trackage leased from UP and CP, and Wisconsin state-owned tracks. The Northern Division consists of five lines radiating from Horicon. The Southern Division consists of a line from Fox Lake with various branches terminating in Wisconsin. WSOR has rail line connections to several Class I railroads: BNSF, CN, CP and UP. Interchange points with the Class I railroads are at Crawford, Slinger, Janesville, Madison, Milwaukee, Granville, and Chicago. It also has access to harbor facilities on the Mississippi River at Prairie du Chien and maintains several transloading sites within its system.

Commodities moved by WSOR primarily include forest products, fertilizers, grain, plastics, consumer foods, paper, aggregates, chemicals, frac sand, ethanol, and liquid petroleum.[53]

Fox Valley and Lake Superior Railroad

The Fox Valley and Lake Superior Railroad was created by Watco as part of its purchase of branch lines from CN owned Wisconsin Central. The STB approved the purchase in December 2021.

Progressive Rail Inc.

Progressive Rail (PGR) is a short line railroad and owner of ten other short line railroads across the United States.[54] Progressive Rail is the parent company of Wisconsin Northern Railroad (WNR).

Wisconsin Northern Railroad

Wisconsin Northern Railroad (WNR) is an operating division of Progressive Rail Incorporated (PGR), headquartered in Lakeville, Minnesota. WNR leases its trackage from UP and Wisconsin Central Ltd. (WC). UP trackage extends north from Norma at a junction with Union to Cameron.

---

[53] *Watco. <https://www.watco.com/service/rail/wsor/> Accessed 1/31/2022.*
[54] *Progressive Rail. <https://www.progressiverail.com/> Accessed 1/31/2022.*

WNR has a transload facility in Chippewa Falls. Major commodities handled include plastic resins, scrap materials, logs, fertilizer, chemicals, steel, feed grade grains, aggregate, and tallow.[55]

Wisconsin Great Northern Railroad, Inc.

The Wisconsin Great Northern Railroad (WGN) operates a historic excursion and dinner train operating on about 20 miles of track between Spooner and the town of Springbrook, with connections to CN's track at Hayward Junction. The excursion train operates under a permit issued by the WisDOT. WGN also moves freight with a pulpwood and hardwood loading facility in Springbrook and operating the CN spur between Hayward Junction and Hayward.[56]

Genesee & Wyoming Inc.

Genesee & Wyoming Inc. (G&W) owns or leases 113 short line and regional freight railroads in North America, serving 43 U.S. states and Canadian provinces.[57] G&W is the parent company of Tomahawk Railway (TR).

Tomahawk Railway

Tomahawk Railway (TR), owned by Genesee & Wyoming Railroad, operates eight miles of track in Lincoln County.[58] TR has an interchange point with Fox Systems in Tomahawk with rail car storage available. TR primarily carries chemicals, plastics, pulp, and paper. Finished products are switched onto the long-distance freight lines via the Fox System.

---

[55] *Progressive Rail. <https://www.progressiverail.com/> Accessed 1/31/2022.*
[56] *Smedley, Steve. 2016. Wisconsin Great Northern Begins Hauling Freight. <https://www.trains.com/trn/news-reviews/news-wire/06-wgn/> Accessed 1/28/2022.*
[57] *Genesee & Wyoming. <https://www.gwrr.com/about-us/> Accessed 1/ 31/ 2022.*
[58] *Genesee & Wyoming Railroad. <https://www.gwrr.com/railroads/north_america/tomahawk_railway#m_tab-one-panel.> Accessed 7/15/2021.*

Chapter 3 Freight Rail and Commodity Flow

Freight rail shipments are integral to economies across North America, extending across the United States, Canada, and Mexico. Within the United States, the freight rail network encompasses almost 140,000 route miles, operated by seven Class I railroads, 22 regional railroads, and 584 short line/local railroads. In whole, the freight rail sector accounts for $80 billion in economic activity.[1]

This chapter examines the flow of freight to, through and from Wisconsin, and its role in the economic health of the state. Major topics focusing on rail freight include:

- Freight Rail Commodity and finished Product Definitions
- National and North American context of Wisconsin freight rail
- North American railroad operational trends
- Wisconsin commodities and trends in a global context
- Commodity flow analysis
- Current challenges and projects

Freight Rail Commodity and Finished Product Definitions

The list of commodities and finished products moved by freight rail in the U.S. encompasses almost every sector. The following are broad categories of rail commodities (and carload volumes moved in 2020):

- Coal (three million carloads): Coal volumes have declined in recent years; 70 percent of coal deliveries to U.S. power plants are by rail, with barge another frequent mode
- Chemicals (2.3 million carloads): Includes plastics, fertilizers, and industrial chemicals
- Construction Materials (two million carloads): Includes crushed stone, sand, and gravel
- Motor Vehicles and Parts (1.8 million carloads): Includes finished vehicles and sub-assemblies
- Agricultural Products (1.7 million carloads): Includes mostly grains, including corn, soybeans, and wheat
- Food Products (1.7 million carloads): Includes canned and temperature-controlled items, including beverages, vegetables, frozen meat, corn syrup, flour, and sugar
- Paper and Lumber (1.1 million carloads): Includes lumber for home construction, newsprint, packaging cardboard, and scrap paper for recycling

[1] https://railroads.dot.gov/rail-network-development/freight-rail-overview

- Crude Oil (236,000 carloads)[2]

Intermodal containers are counted separately and include both domestic and international containers.

National and North American Context of Wisconsin Freight Rail

Following a three-year increase that peaked in 2018[3], U.S. freight rail traffic, as measured in carloads, declined in both 2019 and 2020. The 2019 volume of 13.2 million carloads fell by 12.9% in 2020, to 11.5 million carloads, as the result of economic impacts from the COVID-19 pandemic. Intermodal containers and trailers, which are counted separately from carloads, fell by 1.8%, from 13.9 million units to 13.7 million units. Rail volumes were already witnessing a strong rebound from pandemic related declines, especially in grains and intermodal in late 2020.[4]

Those increases continued into the first part of 2021. As of April 2021, several carload categories were up over the comparable period for 2019 (prior to the pandemic). These included grain, food, lumber, paper, and scrap metal. Carloads of chemicals and steel fell just short of the 2019 levels.[5] Through the first six months of 2021, intermodal volumes also were consistently higher (on a weekly-reporting basis) than for comparable weeks in 2019 and 2020.[6]

North America Railroad Operational Trends

Many factors shape the freight rail sector's operations. Some factors are long-standing; others are emerging. Major trends relevant to freight rail include the following:

- Surface Transportation Board (STB) data requirements
- Positive Train Control (PTC)
- Precision Scheduled Railroading (PSR)
- Greater use of tracking, detecting, and predictive technologies
- Improved locomotive emissions
- Capital Expenditures (CapEx) of railroad companies
- Class I acquisitions and short line growth
- COVID-19 pandemic's economic impact
- Continued importance of Chicago Rail Gateway

---

[2] https://www.aar.org/facts-figures#Capacity
[3] https://www.aar.org/data-center/rail-traffic-data/
[4] https://www.railwayage.com/freight/class-i/aar-railroads-looking-to-the-future
[5] https://www.logisticsmgmt.com/article/u.s._rail_carload_and_intermodal_volumes_see_annual_gains_in_april_reports
[6] https://www.aar.org/data-center/rail-traffic-data/

Surface Transportation Board Data Requirements

As with most other businesses, data has taken on increased importance in day-to-day operations and strategic planning in the freight railroad business. While much of the data remains proprietary (within custody of the railroad), one data set called the Rail Service Data has been collected by the Surface Transportation Board (STB) since 2016. The Class I railroads, plus the Chicago Transportation Coordination Office, submit weekly metrics to allow monitoring of current service conditions. These include system-average train speed (by type of train), weekly average dwell time at major terminals, total cars (by type), average number of trains delayed by more than six hours (by type and cause), total loaded grain cars, and more.[7]

Most rail operators have fully implemented PTC

Positive Train Control (PTC) technology is designed to prevent train-to-train collisions, derailments from excessive speed, and movement of trains through incorrectly positioned switches. The FRA announced in 2020 that PTC was in operation for all 57,536 required route miles nation-wide.[8]

PTC was mandated under the Rail Safety Improvement Act of 2008. Federal grants of $3.4 billion helped to fund the installation. Class I railroads invested more than $11 billion for locomotive radios, wayside antennas, and other equipment.[9]

Most of the largest railroad operators have adopted PSR

Freight railroads are using performance and operations data analysis to increase safety, reliability, efficiency, and better condition-based maintenance.

Precision Scheduled Railroading (PSR) has become the industry standard for Class I railroad operations over the past decade. The basic principle is to increase the flow of goods by reducing factors that can slow operations.

Traditionally rail operators have focused on moving long trains, some with 100 or more cars. This generally maximizes capacity and yields the greatest efficiency. Railroads favored operating unit trains (many train cars moving a single commodity). Freight cars wait in a rail yard or at a

[7] *https://prod.stb.gov/reports-data/rail-service-data/*
[8] *Federal Railroad Administration Announces Landmark Achievement with Full Implementation of Positive Train Control | FRA (dot.gov)*
[9] *Railroads Successfully Implement Positive Train Control Technology Two Days Before Extended Deadline – The Eno Center for Transportation (enotrans.org)*

customer until enough other cars of the same commodity type or destination are assembled before starting on their journey.

PSR shifts the focus from building trains to moving rail cars. Instead of waiting for a long train to be assembled, trains are always moving, and cars are picked up on a predictable schedule. As trains continually move through the network, it becomes more balanced, less expensive, and fluid by:

- Reducing the need for equipment and staffing
- Speeding up car and locomotive turn-around times
- Increasing fuel efficiency
- Providing more reliable service for customers

Customers whose carload needs are smaller, less frequent, and/or irregular from month-to-month may experience reduced service under PSR.[10]

Greater use of tracking, detecting, and predictive technologies to improve safety, reliability, and travel times

The growth in data collection and analysis has included:

- Digital assessment of rail cars
- Tracking of switched rail cars
- Multiple locomotive performance recording
- Remote monitoring and video systems to detect equipment and track faults
- Train-state monitoring and telematics that give real-time information of equipment operation across a system
- Multi-system data collection to track current and historic operation metrics on equipment[11]

Applied use of technologies includes trip optimization technologies to apply throttle and brakes for optimal fuel use and traffic management systems.[12] Other data analysis optimizes staffing and equipment acquisition, including storage and sale of unneeded equipment.

The technology of real-time load tracking via GPS is in use by many carriers. Shippers wanting to know where their cars are in transit go to the website of each railroad to trace progress. Tracking is already common with freight moved by truck where each load is tracked by GPS. A GPS

[10] *Breakthrough | Strategic Transportation Solution Provider (breakthroughfuel.com)*
[11] *Rail Insider-Product update: Onboard monitoring devices, systems. Information For Rail Career Professionals From Progressive Railroading Magazine*
[12] *5 rail sustainability trends for 2021 - FreightWaves*

enabled system allows shippers real time status of their carload's location. It also enables them to know better when their empty rail cars will be available for use.

Integration into routine operations and maintenance provides benefits. CN with participation from FRA, for example, has been testing an autonomous track inspection program. The eight inspection vehicles operate as part of freight trains in regular revenue service. The inspection rail cars are equipped with sensors and artificial intelligence that automatically scan and analyze track conditions. CN is working to verify the accuracy of the automated track inspection trial program to meet regulatory requirements for track inspections. If successfully adopted as an inspection option, there could be both a safety element (as inspectors are not in the train right of way) and a capacity benefit (train service does not need to work around independent inspections taking up the track).[13]

Improved freight locomotive emissions

With a series of tightening regulations on locomotive emissions, railroads and manufacturers have been coordinating efforts on producing reliable, zero- or near-zero emissions equipment.[14]

In 2025, the U.S. EPA Tier 5 standard is expected to come into effect. The standard will limit the emission of harmful substances by trains and locomotives, requiring zero PM (particulate matter) emissions and almost zero NOx (nitrogen oxide) emissions.[15]

Locomotive suppliers have already designed and manufactured prototype locomotives that meet the requirements of these standards. As of early 2022, prototypes were undergoing testing and many production locomotives have been manufactured to meet these requirements.

Capital Expenditures of railroad companies

Railroads have long emphasized the level of capital expenditures (CapEx) in which they invest in maintaining and improving their capacity and reliability. These expenditures include maintenance such as rail replacement and resurfacing, tie replacement, and rolling stock maintenance. Companies also apply CapEx to new locomotives, signaling/communication systems (including PTC), and additional track segments (including double tracking and bypass sidings).

---

[13] *CN ATIP: No Longer Atypical - Railway Age*

[14] *https://www.railwayage.com/news/zero-emission-locomotives-on-u-s-railways/*

[15] *Standards vary by equipment type and age. In general, the Tier 5 standard, in comparison with Tier 4, the value of NOx (oxides of nitrogen) decreases from 1.3 g/dHp-hr to 0.2 g/dHp-hr, and the value of PM (particulate matter) from 0.03 to 0.00. For details see Regulations for Emissions from Locomotives | US EPA*

Class I acquisitions unfolding in 2021 and 2022

After twenty years with no major acquisitions by Class I railroads, in March 2021 Canadian Pacific and Kansas City Southern (KCS) announced a purchase/merger plan priced at $25 billion, with the systems connecting at their one common interchange in Kansas City. In April 2021, Canadian National also made a proposal to acquire KCS. The STB has oversight of mergers and acquisitions between Class I railroads.

Either option would increase one-operator shipping options and connectivity from Mexico to Chicago and into Canada. As a result of the purchase/merger plan, Wisconsin could see changes in traffic volumes and train composition. No final agreement had been reached as of August 2022.

Short line railroad growth

Short line railroads encompass the non-Class I railroads – including both Class II regional railroads (revenues of $35 million to $500 million) and Class III terminal railroads (revenue under $35 million).[16]

As of 2019, there were 22 Class II and 584 Class III local companies classified as short line railroads in the U.S.[17], with six in Wisconsin. Short lines operate across 47,500 route miles, working with Class I railroads to move one in five carloads on the national rail network. Short lines typically serve as first/last mile rail service providers and have operational flexibility to work with individual customers. Many of these lines exist in rural areas that would otherwise have no freight rail service options.[18] Across North America, short line railroad companies grew from 70 in the early 1980's to 550 by 2012.[19]

In Wisconsin, the seven short line rail companies with their official company name and subsidiary name operating in Wisconsin are:

- East Troy Railroad Company[20]
- Escanaba & Lake Superior
- Fox Valley & Lake Superior (Watco)
- Tomahawk Railway (Genesee & Wyoming (G&W)

[16] *https://www.railwayage.com/freight/short-lines-regionals/short-lines-custom-high-growth-freight-service/*
[17] *https://railroads.dot.gov/rail-network-development/freight-rail-overview*
[18] *https://www.aslrra.org/web/About/Industry_Facts/web/About/Industry_Facts.aspx*
[19] *https://www.areadevelopment.com/logisticsInfrastructure/Fall2012/short-lines-serving-industrial-customers-grows-2662511.shtml*
[20] *https://wisconsindot.gov/Documents/travel/rail/railmap.pdf*

- Wisconsin Great Northern
- Wisconsin & Northern (Progressive Rail)
- Wisconsin & Southern (Watco)

Nationally, carload traffic across short lines was down slightly in 2020, after holding relatively steady from 2017 to 2019. In 2020, 3.9 million carloads originated on short lines, down 6% from 2019.[21]

Growth of short line holding companies

An estimated two-thirds of short line railroads are either owned or controlled by holding companies that specialize in small rail operation management.[22] Watco and G&W, both with assets in Wisconsin, are two of the largest railroad holding companies in the U.S.

Acquisition of holding companies by investment partnerships is also impacting short line ownership. Between 2018 and 2020, at least 19 short lines or rail assets were acquired by private equity funds. For example, at the end of 2019, G&W, Inc. was acquired by Brookfield Infrastructure Partners for $8.4 billion. The G&W portfolio at that time included 120 short line railroads.[23] Of these, 114 were in North America, covering more than 13,000 track-miles. G&W became the dominant short line holding company through its acquisition of Rail America in 2012. This acquisition added 45 railroads operating on 7,500 miles of track to G&W's portfolio, which at the time included 63 railroads and 7,400 track-miles.[24] Some investment groups have rail operations and management entities within their ownership; others have acquired equity in rail holding companies (such as Oaktree Capital, which invested $450 million in Watco).[25]

COVID-19 Pandemic's economic impact on intermodal freight traffic as of early 2021

Intermodal shipment on rail has grown from 5.6 million units (containers and trailers) in 1990 to 11.1 million in 2010 to 14.5 million in 2018. Contents include consumer products and components for product manufacturing, grain is also loaded into intermodal containers for export. Half of U.S. rail intermodal volume consists of international imports or exports. The Chicago-Joliet area accounted for the most intermodal units originated and terminated in 2018, at 6.5 million. Los Angeles-Long Beach tallied 5.4 million. This is significantly more than the four

[21] https://public.railinc.com/about-railinc/blog/2020-short-line-carloads-decline-6-percent-year-over-year
[22] https://www.railwayage.com/freight/short-lines-regionals/short-lines-custom-high-growth-freight-service/
[23] https://www.logisticsmgmt.com/article/acquisition_of_genesee_wyoming_inc_by_brookfield_infrastructure_partners_a
[24] https://www.areadevelopment.com/logisticsInfrastructure/Fall2012/short-lines-serving-industrial-customers-grows-2662511.shtml
[25] Short-line railroads offer an appealing investment opportunity even amid pandemic - FreightWaves

other regional locations, Atlanta, Dallas-Ft. Worth, Seattle-Tacoma, and the New York-New Jersey Ports, each handled between 1.3 and 1.5 million containers.[26]

The types of equipment designated as "intermodal" has transitioned over the past three decades. Previously, most intermodal traffic was comprised of truck trailers, or "piggyback" freight. The adoption of standard container sizes, coupled with the growth of international trade, changed the equipment mix. Containers accounted for 69% of intermodal volume in 2000 and 92% in 2019.[27]

In 2019, overall intermodal trade through the top 30 U.S. ports fell by 0.9%, even as the five-year average growth rate was 3.3%.

In 2020, COVID-19 drove business and manufacturing shutdowns. This led to drops in intermodal traffic, but in the second half of the year, traffic shot up to record volumes at several ports.[28] Threats of U.S. tariff increases on Chinese imports in August 2020 drove many businesses to load orders and build inventories, even as ocean liner services reduced available service in anticipation of reduced demand. As the orders arrived, other components (e.g., chassis for containers, port space, warehouse space, and drayage capacity) were insufficient to handle the surge.[29]

Through the end of 2020 and into early 2021, record-setting volumes continued to flow through ports as congestion on the docks and on the water (vessels waiting for a berth) grew. [30]

The effects of port congestion transferred to other sectors. For example, truck turn times at ports increased by 33% from June to September 2020; meanwhile, shippers were assessed charges for not picking up or returning containers as contracted.[31] Also many ocean carriers were not accepting bookings to move the maritime containers inland.[32] According to the Freightos Baltic Index, the cost of container shipping rose 80% between early November 2020 and late January 2021. Meanwhile, in December 2020, more than one in three containers shipped from the world's largest ports did not leave on time.

By March 2021, rail cars for intermodal freight shipping were in "severe shortage" at Los Angeles-Long Beach, causing a doubling of dwell times and further contributing to congestion.[33] Inland,

---

[26] *AAR-Intermodal-Fact-Sheet.pdf*
[27] *https://www.aar.org/issue/freight-rail-intermodal/*
[28] *Ports See Huge Volume Swings in 2020 | Transport Topics (ttnews.com)*
[29] *Could the latest US port congestion have been avoided? - Intermodal in Depth*
[30] *Ports on Both Coasts Report Volume Surge in October | Transport Topics (ttnews.com)*
[31] *New reports point to U.S. port congestion in "Critical" shape - Logistics Management (logisticsmgmt.com)*
[32] *Shippers Need Alternatives to West Coast Port Congestion | 2021-02-19 | SupplyChainBrain*
[33] *Railcar scarcity now driving LA-LB port congestion: terminal operators | JOC.com*

the Chicago intermodal yards were also experiencing congestion issues, which backed up containers slated to arrive from East Coast ports. Shippers diverting containers to truck faced higher costs for the move, if they could find available capacity.[34]

Continued importance of Chicago Rail Gateway to rail freight

The Chicago Rail Gateway continues to be the nexus of freight rail activity for North America. Twenty-five percent of the national freight rail traffic moves through the Chicago metro area. Traffic includes intermodal containers (both domestic and maritime) and bulk commodities (such as agricultural products). The Chicago Region Environmental and Transportation Efficiency (CREATE) program was developed as a partnership across the six Class I freight railroads serving Chicago, Metra commuter and Amtrak passenger railroads, two terminal railroads, the U.S. Department of Transportation, the Illinois Department of Transportation, and county/local transportation departments. The collective goal to improve efficiency and reduce congestion/delays led to development of a 30-year strategy featuring a prioritized list of 70 infrastructure projects valued at $4.6 billion. As of 2020, 30 projects had been completed and another 21 projects were underway.[35]

The Chicago Metropolitan Agency for Planning (CMAP) has identified the importance of freight rail traffic in its On To 2050 long-range plan. The plan recommends maintaining the region's status as North America's freight hub, with completion of CREATE projects as a supporting action. One freight related metric/indicator is the reduction in carload transit time through the Chicago Terminal, where rail cars are interchanged between lines.[36]

Wisconsin Commodities and Trends in a Global Context

Wisconsin's freight rail activity generally ranks in the upper half nationally according to several measures. According to data from the Association of American Railroads, Wisconsin locations originated 28.8 million tons of rail freight, ranking the state 18th nationally in 2019. Wisconsin also saw 42.6 million tons of rail freight terminated in 2019, 16th highest in the U.S. By carload, Wisconsin originated 295,215 carloads (27th nationally) and terminated 438,790 carloads (21st

[34] *Now US intermodal rail yards clog up as port congestion and delays continue - The Loadstar*
[35] *National Freight Strategic Plan (transportation.gov)*
[36] *https://www.cmap.illinois.gov/2050/mobility/freight*

nationally) in 2019.[37] Since the previous Wisconsin Rail Plan, several factors driving rail freight in the state have changed.

Forest products, including pulp and paper

A 2019 Wisconsin paper industry research report determined the state had the most paper mills (34) and the most paper mill related economic output in the U.S. Those mills, along with 204 plants that convert paper into finished product, comprised an $18.16 billion industry.[38]

In June 2020, market changes led to the closing of the Verso plant in Wisconsin Rapids – a plant that operated since 1904 and alone accounted for 25% of the state's demand for pulpwood.[39] Other Wisconsin state agencies, including the Wisconsin Economic Development Corporation, have played critical roles in funding market studies and business development assistance to examine converting the plant to produce cardboard boxes.[40]

Other projects have demonstrated the sector's transformation and resilience in Wisconsin. In early 2021, Green Bay Packaging announced operations had started at the company's new recycled paper mill in Green Bay. The mill is a consumer of corrugated cardboard and mixed paper and produce containerboard.[41]

WisDOT's technical and financial support to the forest products sector includes the 2018 Wisconsin Northwoods Freight Rail Study[42], the 2020 Northwoods Rail Market Assessment, and Transportation Economic Assistance (TEA) program projects in Beecher and Ladysmith totaling more than $373,000.[43]

Frac sand

The industrial sand sector in Wisconsin has been through multiple significant fluctuations in demand over the past decade. The primary product, Northern White silica, was once in high demand as a proppant for the fracking process in shale oil fields across North America. Destinations included North Dakota, Pennsylvania, and Texas, with unit trains supplying regular deliveries. By 2012, 80 mines were either operating or planned. By 2017, drillers noted two key

---

[37] https://www.aar.org/wp-content/uploads/2021/02/AAR-State-Rankings-2019.pdf
[38] https://wedc.org/wp-content/uploads/2019/08/2019-WI-Paper-Industry-Report.pdf
[39] https://www.washingtonpost.com/business/2020/07/30/wisconsin-paper-mill-shutdown-coronavirus/
[40] First of its kind multi-state cooperative says it's just waiting on Verso's call in order to begin reopening the Wisconsin Rapids mill (wsaw.com)
[41] Green Bay Packaging starts production at recycled paper mill (packaging-gateway.com)
[42] https://wisconsindot.gov/Documents/projects/multimodal/rail/northwoods2018.pdf
[43] https://wisconsindot.gov/Documents/doing-bus/local-gov/astnce-pgms/aid/tea/projects.pdf

findings that reduced demand for Wisconsin sand. First, shale oil wells generally have short lifespans. Second, local brown sand from the West Texas Permian Basin could perform adequately, at a far lower cost. As companies opened sand plants in Texas, Wisconsin plants closed. As of September 2020, about 12 Wisconsin mines remained active, down from 69 in 2016.[44]

Crude-by-rail and petroleum products

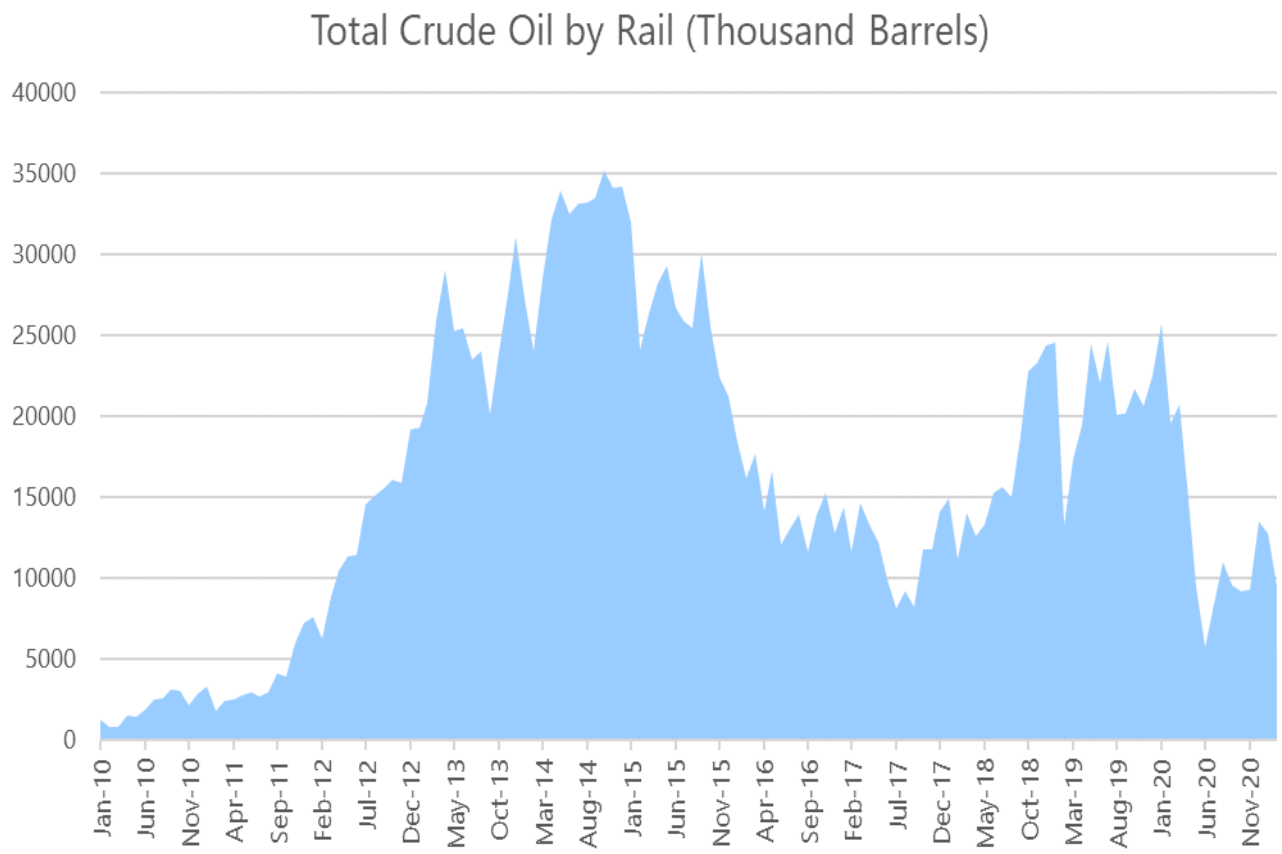
Wisconsin is an overhead state where crude oil by rail shipments (CBR) neither originates nor terminates in the state. Most of the oil moving through Wisconsin is from heavy crude shipped from Western Canada to other states in the U.S. Midwest and Gulf Coast by pipeline and rail.[45] The vast majority of Canadian oil production moves by pipeline (88%), with CBR accounting for five percent of that total. More than 97% of Canada's total crude oil exports go to the United States.

Other factors that will determine potential CBR moves now and in the future include the price differential between Canadian petroleum products and its competition, the easier-to-refine West Texas intermediate crude oil; and the capacity of railroads to handle the anticipated additional traffic.[46]

CBR volumes are highly variable. The data in **Figure 3-1** includes both U.S.-produced crude oil and Canadian crude imported into the U.S. by rail.[47]

[44] *https://www.wsj.com/articles/wisconsin-fracking-sand-jobs-11602104015*
[45] *https://www.bnnbloomberg.ca/u-s-oil-comprised-77-of-canada-s-foreign-oil-imports-last-year-regulator-1.1590015*
[46] *What Keystone pipeline cancellation means for crude-by-rail - FreightWaves*
[47] *Total Crude Oil by Rail (Thousand Barrels) (eia.gov)*

Figure 3-1: Total Crude Oil by Rail (Thousand Barrels)



Source: eia.gov from spot reports. The intervals of time reflect available data and are not uniform.

Another petroleum product of importance to Wisconsin is propane, which is used for industrial heating/drying and residential heating, especially in rural areas. There have been new rail-served propane terminals added in Wisconsin in recent years, including Chippewa Falls, Waldo, Arena, and Superior.

Coal

In keeping with the United States as a whole, Wisconsin's demand for coal as a fuel for electric power generation has been declining. Coal-fired power plants in 2020 provided 39% of Wisconsin's electricity net generation, down from a high of 82% in 1997.[48]

[48] *Wisconsin Profile (eia.gov)*

From 2018 onward, several more coal-fired units were retired or have been designated for retirement. These include: [49]

- Pulliam Power Plant, 200 megawatts, in Green Bay
- Edgewater 4, 100 megawatts, in Sheboygan
- Pleasant Prairie Power Plant, 1,190 megawatts, in Pleasant Prairie
- Edgewater Generating Station, 414 megawatts, Sheboygan by 2022
- Columbia Energy Center, 1,100 megawatts, near Portage, by 2024
- Oak Creek Power Plant, 1,135 megawatts in 2023 and 2024

The combined megawattage of these closed/closing plants is more than half of the total coal-fired capacity from the 2015 inventory.

Another major rail traffic destination for coal shipments, DTE Energy, will see its volumes fall over the next several years. DTE Energy serves energy utilities in southeastern Michigan and northwestern Ohio. DTE owns the Midwest Energy Resources Company, which in turn owns and operates the Superior Midwest Energy Terminal (SMET), in Superior, Wisconsin. This facility brings in low-sulfur western coal by rail and transloads it to vessels for maritime shipment to Michigan. Rail service (via BNSF and UP) uses 15-unit trains, each with 123 cars. The terminal covers 200 acres, with up to five million tons of ground storage and maximum annual capacity of 25.5 million tons.

The facility opened in 1976. The peak transshipment period was 2005 to 2008. Since then, volumes have been in general decline.[50] The decline in coal transload in Superior will likely continue. DTE Energy has stated publicly that by 2023 it will have retired 11 of the company's 17 coal-fired units.[51] Further reductions are required under a settlement agreement with EPA under the Clean Air Act. The company states it will fully retire its coal-fired electric generation facilities by 2040.[52] Taken together, the decline in coal traffic across North America is contributing to Class I railroads reprioritizing their operations and routes.

Grains and agricultural products

In the latter portion of 2020, U.S. exports of grains and feeds saw significant annual increases over 2019 levels. For October 2020, rail carload deliveries to ports on the Mississippi River were up

[49] *Cheap solar panels allow Wisconsin utilities to ramp up clean energy (greenbaypressgazette.com)*
[50] *Terminal Information & Activity | DTE Energy*
[51] *Coal | DTE Energy*
[52] *Settlement: DTE to reduce pollution at 5 regional power plants (detroitnews.com)*

308% from 2019, and 45% from the 4-year average.[53] Exports to China were the driving force, accounting for 73% of soybean exports for instance in October 2020.[54] Export activity remained strong into the first quarter of 2021, with the October-March volumes up 69% for soybeans and 83% for corn, as compared with 2019-20.[55]

Wisconsin's farmers have been highly productive in growing the state's primary crops - corn and soybeans. In 2020, state production for corn was estimated at 517 million bushels, a 17% increase over 2019. Soybean production was 100 million bushels, an increase of 33% from 2019. As of January 2021, 465 million bushels of corn were in storage (60% on-farm) and 69 million bushels of soybeans were in storage (33% on-farm).[56]

Two of the railroads serving Wisconsin completed capital investments to improve grain shipping in 2021-22. First, UP expanded operations at its Global IV intermodal terminal near Joliet through a partnership that added a grain transload facility on terminal property. This allows for grain to be moved from truck to maritime containers for export, improving market opportunities for Wisconsin's agribusinesses. UP states the facility will have the capacity to process 60,000 containers per year at full build-out.[57]

In addition, CN announced it will receive 500 new high-capacity hopper cars for grain movement in 2022, along with an additional 500 by early 2023. An additional 750 cars are anticipated to enter service by the end of 2024 as part of ongoing capacity expansion. These new cars carry up to 15 percent more grain than older equipment.[58]

Rail is an essential component in the transportation of these crops to global markets. WisDOT has facilitated rail service in many of the state's most-productive agricultural areas through loans and grants for corridor preservation, mainline track and bridge rehabilitation, and construction of new industry spur tracks under the Freight Rail Infrastructure Improvement Program (FRIIP) and Freight Rail Preservation Program (FRPP) programs. Since 2010, WisDOT has provided more than $25 million in FRIIP loans for projects at rail-served grain storage facilities.[59]

---

[53] https://www.ams.usda.gov/sites/default/files/media/GTR11052020.pdf
[54] https://www.trains.com/trn/news-reviews/news-wire/u-s-grain-sales-to-china-spur-record-rail-traffic/
[55] USDA ERS - U.S. Agricultural Trade Data Update
[56] https://www.weau.com/2021/01/14/wisconsin-farms-had-bigger-corn-and-soybean-crops-in-2020/
[57] https://www.up.com/customers/premium/global4-transload/index.htm
[58] https://www.cn.ca/en/news/2022/07/cn-publishes-annual-grain-plan/
[59] https://wisconsindot.gov/Documents/doing-bus/local-gov/astnce-pgms/aid/rail-proj.pdf

Chemicals, including ethanol

Substantial amounts of chemicals are moved by rail. In 2019, railroads accounted for 19% of the tonnage of chemicals transported throughout the United States. Chemicals comprised 7.8% of originated carloads and 11.5% of originated tonnage for railroads.[60]

Ethanol is the highest-volume chemical carried by rail in the country.[61]

Ethanol is also the chemical produced in the greatest volumes in Wisconsin. In 2019, Wisconsin ranked eighth in the nation in fuel ethanol production capacity, with facilities able to produce 600 million gallons annually.[62] Wisconsin has nine ethanol production facilities (**Table 3-1**). [63] Combined, they use more than 180 million bushels of corn per year, accounting for 37% of the state's corn crop. As a byproduct of the process, the plants also produce 1.5 million tons of dry distillers' grain which is used for livestock feed.[64]

Table 3-1: Wisconsin Ethanol Facilities 2020

Facility	Location	Capacity (MGY)	Rail Service
Ace Ethanol	Stanley	54	CN
Badger State Ethanol	Monroe	90	WSOR
Big River Resources	Boyceville	62	CN
Didion Ethanol	Cambria	50	WSOR
Fox River Valley Ethanol	Oshkosh	65	WSOR
Marquis Energy – Wisconsin	Necedah	50	CN
United Ethanol	Milton	62	WSOR
United Wisconsin Grain Producers	Friesland	60	WSOR
Valero Renewable Fuels	Jefferson	110	UP

Source: Renewable Fuels Association (ethanolrfa.org)

Other major chemical carloads include soda ash, caustic soda, urea, sulfuric acid, and anhydrous ammonia. Together, these industrial chemicals account for more than half of all the chemical

[60] *AAR-United-States-Fact-Sheet.pdf*
[61] *Freight Rail & the Chemical Industry | Association of American Railroads (aar.org)*
[62] *Wisconsin - State Energy Profile Overview - U.S. Energy Information Administration (EIA)*
[63] *Ethanol Biorefinery Locations | Renewable Fuels Association (ethanolrfa.org)*
[64] *Ethanol - Wisconsin Corn (wicorn.org)*

carloads across North America. Plastic materials and synthetic resins account for another quarter of chemical carloads. The remaining is mostly agricultural chemicals.[65]

Other sectors that rely on rail-shipped chemicals include fertilizers for agriculture and caustic sodas for paper and pulp manufacturing.[66]

Motor vehicles and parts

Freight railroads are crucial in supplying motor vehicle manufacturers and their suppliers with the materials needed to make various components, including plastics, glass, rubber, and steel. Once manufactured, almost 75% of vehicles are loaded on rail cars and shipped by train to their sales markets. [67]

Wisconsin's motor vehicle manufacturing includes Harley-Davidson motorcycles and Oshkosh Corporation. Oshkosh Corporation has been the recipient of several defense contracts for the construction and rebuilding of specialized military vehicles. The company has also been awarded the contract for the next generation of postal vehicles.[68]

WisDOT supported rail service for this sector through a TEA grant of $1 million in 2016, for the construction of a transloading facility and two rail spurs in Oshkosh, to serve Oshkosh Corporation and other local businesses.[69]

Intermodal

Wisconsin has two long-operating intermodal facilities in Arcadia and Chippewa Falls, each anchored by a primary importer. Ashley Furniture operates a private intermodal ramp in Arcadia, adjacent to its manufacturing facility. The company receives 260 40-foot containers per week.[70] In Chippewa Falls, imports arrive for Menards; once emptied, the containers are refilled – often with grains for export from the River Country Co-Op.[71] Inbound container volumes have risen from around 3,000 in 2012 to more than 6,000 in 2016. In 2017, outbound container volumes (almost 7,000) surpassed imported containers.[72]

---

[65] https://www.aar.org/wp-content/uploads/2020/07/AAR-Chemicals-Fact-Sheet.pdf
[66] https://www.aar.org/wp-content/uploads/2020/07/AAR-Chemicals-Fact-Sheet.pdf
[67] Freight Rail Facts & Figures - Association of American Railroads (aar.org)
[68] https://www.freightwaves.com/news/oshkosh-takes-victory-lap-over-postal-service-delivery-truck-contract
[69] https://wisconsindot.gov/Documents/doing-bus/local-gov/astnce-pgms/aid/tea/projects.pdf
[70] https://www.ashleydistributionservices.com/Intermodal.html
[71] https://chippewa.com/business/businessreport/chippewa-falls-rail-terminal-opens-world-markets-to-area-businesses/article_bf9ac85e-1baa-544f-a2df-1199a90e57ee.html
[72] https://wisconsindot.gov/Documents/doing-bus/freight/fac/report2019.pdf

CN opened a third intermodal facility in 2021 in New Richmond. The 58-acre "Autoport" facility allows for the transloading of new vehicles and for the use of intermodal containers. This facility is targeted to the greater Twin Cities market, including Northwest Wisconsin, and provides container service to Prince Rupert Island in British Columbia.

WisDOT funded two recent studies of intermodal freight opportunities in Wisconsin. In northeastern Wisconsin, the East Central Wisconsin Regional Planning Commission began a study in the winter of 2020-21 in partnership with the New North economic development group and local businesses. The second intermodal freight study began in late 2021 is being led by the North Central Wisconsin Regional Planning Commission in partnership with MnDOT, Union Pacific Railroad, and several shippers.

One practice that threatens the availability of intermodal containers for export from Wisconsin is the growing practice of unloading the maritime 40-foot containers at coastal ports and reloading the contents into domestic 53-foot containers. This results in fewer international containers being available in the Midwest for direct export without reloading into a maritime container.[73] This extra reloading step costs smaller shippers and exporters extra money and transit time.[74]

Transloading is well-established at other coastal ports. As of 2017, 58% of loaded maritime containers arriving at Los Angeles-Long Beach were transloaded to domestic containers, representing an increase of 6% in five years. This trend is projected to continue on both coasts as inland ports become transfer points, allowing ports to handle the loading and positioning of export containers.[75]

The backlog of unloaded containers at ports continues to complicate intermodal export opportunities by depleting the availability of export containers at inland locations like Wisconsin. Ocean carriers were returning empty containers back to Asia immediately, rather than making them available to load exports. Inland locations – including Minneapolis/St. Paul, Omaha, Chicago, and Kansas City – saw limits or full cancellations of containers. Food-grade soy products were one of the impacted sectors.[76]

---

[73] https://www.joc.com/trucking-logistics/tpm21-e-commerce-spurs-growth-container-transloading_20210323.html
[74] https://www.washingtonpost.com/business/interactive/2021/supply-chain-issues/
[75] https://www.joc.com/trucking-logistics/tpm21-e-commerce-spurs-growth-container-transloading_20210323.html
[76] Shipping container shortage hitting ag, other U.S. exporters | Local News | mankatofreepress.com

For Wisconsin, much of the intermodal traffic pivots have occurred within the Chicago area. All four Class I rail companies serving Wisconsin have large intermodal operations in northeastern Illinois:

- CN's main corridors and terminals are Prince Rupert, Vancouver, Halifax, Montreal, New Orleans, Mobile, Memphis, Chicago, Joliet, Detroit, Toronto, Winnipeg, and Edmonton.[77]
- CP's system features terminals in Vancouver, Montreal, Chicago, Minneapolis, Detroit, Toronto, Winnipeg, Regina, and Calgary.[78]
- UP's largest coastal intermodal terminal is Los Angeles/Long Beach; Oakland and Seattle/Tacoma are also key Pacific Coast locations. Houston and New Orleans are UP's Gulf Coast intermodal ports, and inland terminals include Chicago, Joliet, Dallas, Salt Lake City, Kansas City, Council Bluffs, St. Louis, and Minneapolis.[79]
- BNSF's intermodal corridors are also anchored at Los Angeles-Long Beach, with Seattle/Tacoma and Oakland as other critical West Coast ports. Houston is BNSF's Gulf Coast intermodal terminal, and select inland terminals include Chicago, Joliet, Dallas, Kansas City, Denver, Omaha, St. Paul, and Memphis.[80]
- Eastern railroads CSX and NS access Chicago with maritime intermodal containers landed at the Port of New York/New Jersey, Baltimore, Savannah, Hampton Roads, Jacksonville, and Charleston.[81]

Commodity Flow Analysis

Building off the commodity discussion earlier in this chapter, this Commodity Flow Analysis section takes a closer look at the details of commodity shipments in Wisconsin. Railroads move 32% of Wisconsin's total freight by weight and value. All data in this section is from Wisconsin's 2019 IHS Transearch Commodity Flow Database.

Modal Comparison and Shipment Types

Freight movement is characterized by the origins and destinations of the shipments.

- **Outbound** – freight that originates in Wisconsin and terminates outside of Wisconsin
- **Inbound** – freight that originated outside Wisconsin and terminates in Wisconsin

---

[77] https://www.cn.ca/en/our-services/maps-and-network/
[78] https://www.cpr.ca/en/choose-rail/intermodal-shipping
[79] https://www.up.com/customers/premium/intmap/index.htm
[80] http://www.bnsf.com/bnsf-resources/pdf/ship-with-bnsf/maps-and-shipping-locations/small-intermodal-map.pdf
[81] http://www.csxintermodalterminals.com/index.cfm/terminals/ and http://www.nscorp.com/content/nscorp/en/shipping-options/intermodal/terminals-and-schedules.html

- **Within state** – freight that both originates and terminates in Wisconsin
- **Overhead** – freight that travels through Wisconsin without originating or terminating in the state

Table 3-2 and **Table 3-3** explain the tons and value of rail freight based on movement type, compared with other modes of transport. **Figure 3-2** shows the percent of total tonnage by mode.

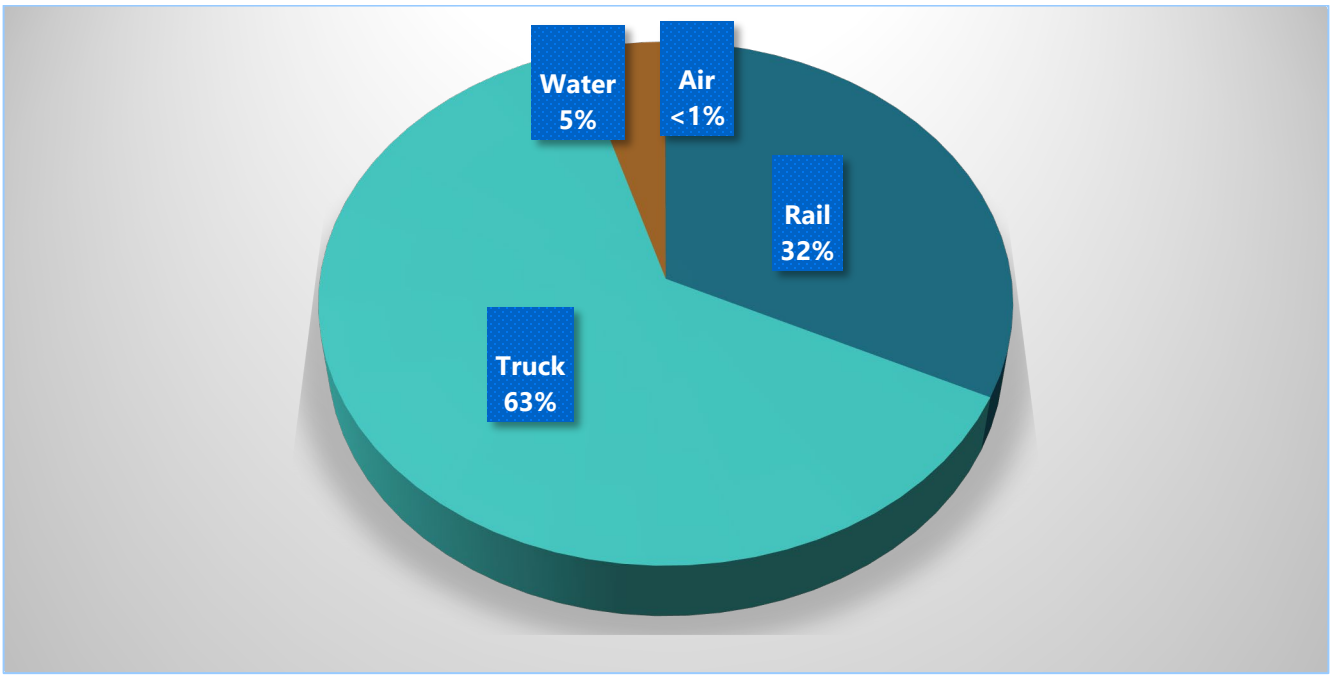
- In 2019, nearly 584 million tons of freight valued at $547 billion moved to, from, through, or within Wisconsin.
- 63% of tonnage moved by truck, 32% by rail, 5% by water
- 65% of freight value moved by truck, 32% by rail, 2% by air

Table 3-2: Wisconsin Freight Shipments by Tonnage 2019

	Outbound	Inbound	Within State	Overhead	Total
Rail	31,633,403	49,491,017	3,099,073	103,793,183	188,016,676
Truck	117,490,629	88,378,620	123,067,481	39,738,395	368,675,125
Water	19,629,254	7,290,259	42,291	0	26,961,804
Air	44,810	69,413	410	0	114,633
Other	3,809	24,654	0	0	28,463
Total	**168,801,905**	**145,253,962**	**126,209,255**	**143,531,578**	**583,796,701**

Source: 2019 IHS Transearch

Figure 3-2: Percent of Total Tonnage by Mode of Travel 2019



Source: 2019 IHS Transearch

Table 3-3: Wisconsin Freight Shipments by Value 2019

	Outbound	Inbound	Within State	Overhead	Total
Rail	$8,116,181,011	$14,562,737,791	$1,217,137,707	$152,264,799,928	$176,160,856,437
Truck	$120,395,606,534	$84,867,904,899	$68,163,342,005	$80,980,457,353	$354,407,310,791
Water	$1,685,717,994	$1,809,776,726	$98,150,139	0	$3,593,644,859
Air	$5,262,184,564	$7,117,798,908	$15,993,389	0	$12,395,976,861
Other	$9,277,842	$55,460,145	0	0	$64,737,987
Total	**$135,468,967,945**	**$108,413,678,469**	**$69,494,623,240**	**$233,245,257,282**	**$546,622,526,936**

Source: 2019 IHS Transearch

Rail shipment types

More than half (55%) of the state's rail tonnage moves through without stopping at Wisconsin businesses. The overhead shipments generally contain more valuable commodities than the other shipment types, making up 86% of the state's freight rail shipment value. **Table 3-4** shows the percent of total tons and value for the shipment types.

Table 3-4: Rail Shipments by Type – Tonnage and Value 2019

	Tons	Percent of Total	Value	Percent of Total
Outbound	31,633,403	17%	$8,116,181,011	5%
Inbound	49,491,017	26%	$14,562,737,791	8%
Within State	3,099,073	2%	$1,217,137,707	1%
Overhead	103,793,183	55%	$152,264,799,928	86%
Total	188,016,676	100%	$176,160,856,437	100%

Source: 2019 IHS Transearch

Wisconsin Railroad Shipments (2015-2019)

Table 3-5 shows the number of carloads and intermodal units and tons that moved to, from, through, or within Wisconsin over the past five years. Total units and tons have remained somewhat constant, with less carload activity and more intermodal activity. Most of the intermodal traffic is overhead.

Table 3-5: Rail Shipments in Wisconsin (2015-2019)

	2015	2016	2017	2018	2019
Carloads	1,996,133	1,621,370	1,808,651	1,872,203	1,784,896
Intermodal Units	1,094,281	1,113,680	1,138,160	1,357,000	1,310,160
Total Rail Units	**3,090,414**	**2,735,050**	**2,946,811**	**3,229,203**	**3,095,056**
Carload Tons	190,996,257	154,587,447	174,230,316	180,379,897	170,255,236
Intermodal Tons	15,300,705	16,057,120	16,088,760	18,945,000	17,761,440
Total Rail Tons	**206,296,962**	**170,644,567**	**190,319,076**	**199,324,897**	**188,016,676**

Source: STB Waybill Samples and IHS Transearch

Outbound Rail Shipments

Nearly 32 million tons of freight valued at more than $8 billion is shipped out of Wisconsin by rail annually, with destinations throughout North America. The top destinations based on weight are Illinois (25%), Ontario (17%), and Texas (14%). **Table 3-6** shows the top destinations of outbound rail freight.

Table 3-6: Destinations of Outbound Freight Rail Shipments 2019

State or Province	Tons	Percent of Total	Value	Percent of Total
Illinois	7,934,874	25%	$1,622,513,136	20%
Ontario	5,499,734	17%	$1,912,755,673	24%
Texas	4,390,004	14%	$1,607,637,959	20%
North Dakota	2,928,330	9%	$225,510,057	3%
Colorado	2,521,185	8%	$244,715,457	3%
Ohio	1,182,516	4%	$112,261,504	1%
Iowa	1,127,771	4%	$493,332,216	6%
Wyoming	806,476	3%	$94,358,416	1%
Minnesota	794,006	3%	$276,447,440	3%
Oklahoma	756,468	2%	$179,063,483	2%
All Other	3,692,039	12%	$1,347,585,670	17%
Total	31,633,403	100%	$8,116,181,011	100%

Source: 2019 IHS Transearch

The top Wisconsin origins of outbound rail tonnage are Monroe County (23%), Trempealeau County (15%), and Chippewa County (9%). When analyzed by value, Douglas County, with 24% of the total value, is the top origin. **Table 3-7** displays the county origins.

Table 3-7: County Origins of Outbound Rail Shipments by Tons and Value 2019

County	Tons	Percent of Total	Value	Percent of Total
Monroe County	7,425,114	23%	$545,928,025	7%
Trempealeau County	4,733,473	15%	$755,227,200	9%
Chippewa County	2,966,725	9%	$1,204,901,084	15%
Jackson County	2,705,321	9%	$200,126,048	2%
Douglas County	2,698,018	9%	$1,976,676,440	24%
Wood County	1,023,412	3%	$655,034,647	8%
Clark County	959,560	3%	$69,588,439	1%
Rusk County	945,730	3%	$68,787,180	1%
Marathon County	794,720	3%	$101,423,191	1%
Barron County	656,683	2%	$50,603,576	1%
All Other	3,692,039	12%	$1,347,585,670	17%

County	Tons	Percent of Total	Value	Percent of Total
Total	**31,633,403**	**100%**	**$8,116,181,011**	**100%**

Source: 2019 IHS Transearch

The major commodities shipped out of Wisconsin based on tonnage amounts are gravel or sand (70%), grain (6%), and processed nonmetallic minerals (3%). Although gravel or sand is the highest tonnage commodity leaving the state, this lower value commodity only makes up 20% of the total value of outbound shipments. **Table 3-8** shows the weight and value of commodities based on Standard Transportation Commodity Codes (STCC) at the 4-digit level.

Table 3-8: Top Outbound Commodities 2019

Commodity	Tons	Percent of Total	Value	Percent of Total
Gravel or Sand	22,289,401	70%	$1,605,908,403	20%
Grain	1,866,254	6%	$238,373,437	3%
Nonmetal Minerals, Processed	1,038,960	3%	$108,920,799	1%
Potassium or Sodium Compound	888,108	3%	$308,803,488	4%
Misc. Industrial Organic Chemicals	671,400	2%	$258,787,011	3%
Plastic Materials or Synthetic Fibers	547,320	2%	$1,327,372,954	16%
Metal Scrap or Tailings	434,360	1%	$141,167,000	2%
Oil Kernels, Nuts or Seeds	330,998	1%	$57,330,478	1%
Broken Stone or Riprap	327,912	1%	$3,667,225	0%
Fiber, Paper or Pulpboard	303,000	1%	$248,171,008	3%
All Other	2,935,690	9%	$3,817,679,209	47%
Total	31,633,403	100%	$8,116,181,011	100%

Source: 2019 IHS Transearch

Inbound Rail Shipments

More than 49 million tons of freight valued at nearly $15 billion is shipped to Wisconsin by rail annually. The freight is delivered by rail from all over North America. The top origins of this freight based on weight are Wyoming (36%), Minnesota (25%), and Montana (13%). **Table 3-9** shows the top origins of inbound rail freight shipments.

Table 3-9: Origins of Inbound Rail Shipments 2019

State or Province	Tons	Percent of Total	Value	Percent of Total
Wyoming	17,653,988	36%	$623,142,646	4%
Minnesota	12,554,945	25%	$1,782,340,796	12%
Montana	6,330,592	13%	$241,154,394	2%
Illinois	1,763,404	4%	$1,331,109,505	9%
Alberta	1,672,480	3%	$1,710,345,749	12%
Saskatchewan	1,590,404	3%	$1,095,954,644	8%
North Dakota	1,028,644	2%	$227,847,331	2%
Michigan	830,480	2%	$578,170,833	4%
Texas	663,664	1%	$1,095,243,922	8%
Ontario	619,920	1%	$445,448,414	3%
All Other	4,782,496	100%	$5,431,979,558	37%
Total	**49,491,017**	**100%**	**$14,562,737,791**	**100%**

Source: 2019 IHS Transearch

The top Wisconsin destinations of inbound rail tonnage are Douglas County (44%), Milwaukee County (15%), and Columbia County (8%). When analyzed by value, Douglas County, with 24% of the total value, is again the top destination. Much of the tonnage terminating in Douglas County is coal from Montana and Wyoming. After arriving at the Port of Superior, the coal then travels by water to its final destinations on the Great Lakes. Limestone, grain, and iron ore are other major commodities that travel to the Port of Superior before being moved further by water.[82] **Table 3-10** displays the county destinations of the inbound rail shipments.

Table 3-10: County Destinations of Inbound Rail Shipments 2019

County	Tons	Percent of Total	Value	Percent of Total
Douglas County	21,985,491	44%	$3,491,097,929	24%
Milwaukee County	7,196,222	15%	$1,124,812,906	8%
Columbia County	4,189,916	8%	$250,780,413	2%
Wood County	3,106,252	6%	$473,478,554	3%

[82] *https://duluthport.com/about-us/port-statistics/*

County	Tons	Percent of Total	Value	Percent of Total
Marathon County	2,796,302	6%	$277,675,001	2%
Sheboygan County	1,225,740	2%	$566,868,660	4%
Brown County	1,129,456	2%	$836,850,269	6%
Buffalo County	848,338	2%	$40,282,945	0%
Winnebago County	691,516	1%	$815,658,633	6%
Kenosha County	540,528	1%	$263,583,077	2%
All Other	5,781,256	12%	$6,421,649,404	44%
Total	**49,491,017**	**100%**	**$14,562,737,791**	**100%**

Source: 2019 IHS Transearch

The major commodities shipped to Wisconsin based on weight are coal (49%), iron ore (23%), and grain (4%). Although plastic materials and synthetic fibers make up only 3% of the inbound weight, the value of the commodity ($3.4 billion) is 24% of the state's inbound value total. **Table 3-11** shows the commodity types based on STCC at the 4-digit level.

Table 3-11: Top Inbound Commodities 2019

Commodity	Tons	Percent of Total	Value	Percent of Total
Bituminous Coal	24,015,904	49%	$767,726,495	5%
Iron Ores	11,272,458	23%	$838,332,688	6%
Grain	2,008,564	4%	$350,372,633	2%
Plastic Materials or Synthetic Fibers	1,419,800	3%	$3,443,331,376	24%
Potassium or Sodium Compound	1,084,428	2%	$377,065,795	3%
Pulp or Pulp Mill Products	988,748	2%	$343,454,746	2%
Paper	843,400	2%	$1,769,967,737	12%
Lumber or Dimension Stock	702,680	1%	$105,738,057	1%
Liquefied Gases, Coal or Petroleum	613,920	1%	$204,616,160	1%
Petroleum Refining Products	509,520	1%	$365,716,976	3%
All Other	6,031,827	12%	5,996,495,887	41%
Total	**49,491,017**	**100%**	**$14,562,737,791**	**100%**

Source: 2019 IHS Transearch

Rail Shipments within Wisconsin

More than three million tons of freight valued at $1 billion is shipped from one location in Wisconsin to another location within the state. The top origins of this freight based on weight are Rock County (14%), Milwaukee County (8%), and Douglas County (7%). The top origins based on commodity value are Wood County (20%), Winnebago County (12%), and Washington County (11%). **Table 3-12** shows the top origins of freight rail shipments within Wisconsin.

Table 3-12: Origins of Rail Shipments within Wisconsin 2019

County	Tons	Percent of Total	Value	Percent of Total
Rock County	442,576	14%	$12,380,392	1%
Milwaukee County	233,156	8%	$82,421,312	7%
Douglas County	213,572	7%	$67,886,437	6%
Jackson County	212,241	7%	$19,362,716	2%
Wood County	183,960	6%	$247,130,138	20%
Barron County	178,386	6%	$12,936,766	1%
Fond du Lac County	175,084	6%	$51,158,616	4%
Grant County	163,624	5%	$18,776,539	2%
Dane County	152,517	5%	$35,812,509	3%
Trempealeau County	143,137	5%	$10,380,467	1%
All Other	1,000,820	32%	658,891,817	54%
Total	**3,099,073**	**100%**	**$1,217,137,707**	**100%**

Source: 2019 IHS Transearch

The top Wisconsin destinations of rail shipments within Wisconsin based on weight are Douglas County (17%), Dane County (13%), and Wood County (12%). When analyzed by value, Dodge County with 19% of the total value is the top destination. **Table 3-13** displays the county destinations.

Table 3-13: County Destinations of Rail Shipments within Wisconsin by Tons and Value 2019

County	Tons	Percent of Total	Value	Percent of Total
Douglas County	530,296	17%	$44,690,088	4%
Dane County	407,980	13%	$20,943,358	2%
Wood County	369,640	12%	$66,104,763	5%

County	Tons	Percent of Total	Value	Percent of Total
Rock County	265,936	9%	$91,050,724	7%
Green County	241,736	8%	$21,511,546	2%
Winnebago County	153,628	5%	$187,988,970	15%
Outagamie County	129,160	4%	$46,448,013	4%
Dodge County	114,760	4%	$227,579,432	19%
Chippewa County	114,480	4%	$12,248,939	1%
Columbia County	111,160	4%	$17,660,479	1%
All Other	660,297	21%	480,911,395	40%
Total	**3,099,073**	**100%**	**$1,217,137,707**	**100%**

Source: 2019 IHS Transearch

The major commodities shipped within Wisconsin based on weight are gravel or sand (34%), grain (23%), and primary forest materials (12%). The two most valuable commodities shipped within Wisconsin are paper (34%) and plastic materials or synthetic fibers (32%). **Table 3-14** shows the top commodities shipped within Wisconsin.

Table 3-14: Top Commodities Shipped Within Wisconsin by Tons and Value 2019

Commodity	Tons	Percent of Total	Value	Percent of Total
Gravel or Sand	1,039,964	34%	$51,495,963	4%
Grain	705,696	23%	$75,502,427	6%
Primary Forest Materials	384,000	12%	$60,122,245	5%
Paper	196,480	6%	$412,334,905	34%
Plastic Materials or Synthetic Fibers	158,880	5%	$385,319,401	32%
Potassium or Sodium Compound	97,612	3%	$33,940,609	3%
Oil Kernels, Nuts or Seeds	87,752	3%	$15,199,077	1%
Chemicals or Fertilizer	78,280	3%	$4,797,748	0%
Metal Scrap or Tailings	50,160	2%	$16,302,000	1%
Malt	43,480	1%	$21,380,113	2%
All Other	256,769	8%	$140,743,219	12%
Total	**3,099,073**	**100%**	**$1,217,137,707**	**100%**

Source: 2019 IHS Transearch

Overhead Rail Shipments

Nearly 104 million tons of freight valued at more than $152 billion travels through Wisconsin by rail annually. These overhead freight shipments both originate and terminate outside of Wisconsin. The top state or province destinations of the freight based on weight are Illinois (47%), Minnesota (9%), and Texas (7%). Illinois (44%) and Minnesota (10%) are also the top destinations of overhead freight when ranked by value, followed by Ontario (8%) (**Table 3-15)**.

Table 3-15: Destinations of Overhead Rail Shipments 2019

State or Province	Tons	Percent of Total	Value	Percent of Total
Illinois	49,169,614	47%	$66,851,777,244	44%
Minnesota	9,299,044	9%	$15,539,660,339	10%
Texas	6,888,913	7%	$4,128,691,153	3%
Louisiana	4,733,052	5%	$2,308,764,353	2%
Ontario	4,566,635	4%	$12,133,946,395	8%
Washington	3,548,650	3%	$11,372,031,308	7%
North Dakota	3,141,458	3%	$1,414,441,520	1%
Alberta	2,177,851	2%	$3,403,433,498	2%
Michigan	2,176,258	2%	$5,805,322,888	4%
Missouri	1,874,501	2%	$837,061,854	1%
All Other	16,217,207	16%	$ 28,469,669,377	19%
Total	**103,793,183**	**100%**	**$152,264,799,928**	**100%**

Source: 2019 IHS Transearch

The top state or province origins of overhead rail shipments based on weight are Alberta (16%), Minnesota (15%), and North Dakota (14%). When ranked by value, the top origins are Illinois (23%), British Columbia (21%), and Washington (11%). **Table 3-16** shows the top destinations of overhead rail freight.

Table 3-16: Origins of Overhead Rail Shipments 2019

State or Province	Tons	Percent of Total	Value	Percent of Total
Alberta	17,031,898	16%	$10,002,491,006	7%
Minnesota	15,065,984	15%	$8,809,291,824	6%
North Dakota	14,948,868	14%	$7,057,215,360	5%

State or Province	Tons	Percent of Total	Value	Percent of Total
Illinois	11,130,388	11%	$35,078,114,644	23%
Saskatchewan	10,226,829	10%	$12,784,354,645	8%
British Columbia	8,654,916	8%	$32,226,706,368	21%
Washington	4,060,716	4%	$16,102,782,279	11%
Wyoming	2,388,420	2%	$285,491,934	0%
Ontario	1,795,043	2%	$2,052,760,704	1%
South Dakota	1,736,312	2%	$486,696,056	0%
All Other	16,753,809	16%	27,378,895,108	18%
Total	**103,793,183**	**100%**	**$152,264,799,928**	**100%**

Source: 2019 IHS Transearch

The major commodities moving through Wisconsin as overhead rail tonnage are crude petroleum (16%), freight of all kinds (FAK) shipments (12%), and grain (8%). FAK is a commodity code name for a group of shipments put together to be transported as a single shipment, often in intermodal containers. FAK is by far the top overhead commodity when ranked by value (41%). **Table 3-17** shows the weight and value of overhead commodities.

Table 3-17: Top Overhead Commodities 2019

Commodity	Tons	Percent of Total	Value	Percent of Total
Crude Petroleum	16,734,517	16%	$6,642,529,760	4%
Freight of all Kinds (FAK)	12,236,640	12%	$63,060,656,129	41%
Grain	8,000,868	8%	$1,277,206,540	1%
Misc. Industrial Organic Chemicals	6,031,790	6%	$2,880,175,374	2%
Potassium or Sodium Compound	5,429,566	5%	$1,887,911,039	1%
Lumber or Dimension Stock	4,215,720	4%	$634,374,165	0%
Iron Ores	2,835,738	3%	$210,893,830	0%
Chemical Preparations, Not elsewhere Classified (NEC)	2,828,440	3%	$10,378,214,853	7%
Petroleum Refining Products	2,656,348	3%	$2,029,830,243	1%
Fertilizers	2,654,297	3%	$827,295,748	1%
All Other	40,169,259	39%	62,435,712,248	41%
Total	**103,793,183**	**100%**	**$152,264,799,928**	**100%**

Source: 2019 IHS Transearch

2050 Freight Forecast

The Wisconsin Rail Plan 2050 used a 2050 freight forecast for all modes based on a 2017 base year. Freight tonnage is forecasted to increase by 78% and freight value is forecasted to increase by 121% by 2050. Of all the modes of transport, rail shipping is forecasted to increase the most with a 119% increase in tonnage and a 172% increase in value. **Table 3-18** shows the tonnage and value amounts. Because of major trend changes in rail-related industries since 2017 (particularly less frac sand), the commodity detail of the forecast is not included.

Table 3-18: Wisconsin Shipments by Tons and Value Base Year 2017; Forecast to 2050

	2017 Tons	2050 Tons	Percent Change	2017 Value ($)	2050 Value ($)	Percent Change
Rail	190,319,076	416,312,457	119%	151,193,523,205	411,080,974,820	172%
Truck	390,422,004	631,660,268	62%	351,521,900,609	699,092,627,386	99%
Water	27,223,311	37,231,836	37%	3,065,605,053	4,691,556,369	53%
Air	102,357	209,192	104%	10,131,564,592	26,192,701,877	159%
Other	152,011	191,382	26%	56,640,444	124,867,729	120%
Total	**608,218,759**	**1,085,605,135**	**78%**	**$515,969,233,901**	**$1,141,182,728,180**	**121%**

Source: 2017 IHS Transearch with 2050 Forecast

Further analysis of the 2050 forecast breaks the rail data down into the four shipment types discussed earlier in the chapter: outbound, inbound, within Wisconsin, and overhead. The largest increases in units, tons, and value are forecasted to be in overhead traffic. Outbound shipments are forecasted to increase at a higher rate than that of the inbound and within state shipments. **Table 3-19** shows the forecast for the shipment types by units, tons, and value.

Table 3-19: Outbound and Inbound Rail Shipments Base Year 2017; Forecast to 2050

	Outbound			Inbound		
	2017	**2050**	**Percent Change**	**2017**	**2050**	**Percent Change**
Units	407,504	731,196	79%	553,115	760,656	38%
Tons	42,901,724	76,776,572	79%	56,950,144	70,272,783	23%
Value ($)	5,840,617,445	12,116,244,422	107%	13,008,504,179	35,032,835,803	169%
	Within Wisconsin			**Overhead**		
	2017	**2050**	**Percent Change**	**2017**	**2050**	**Percent Change**
Units	35,080	57,529	64%	1,950,772	5,022,158	157%
Tons	3,000,750	4,906,731	64%	87,466,458	264,356,371	202%
Value ($)	1,440,581,082	2,824,667,394	96%	130,903,820,499	361,107,227,201	176%

Source: 2017 IHS Transearch with 2050 Forecast

Figure 3-3 shows the 2050 forecasted tonnage amounts on Wisconsin railroad lines. More than 50 million annual tons are forecasted to travel on many of the Class I mainlines, including the Canadian Pacific mainline, which is also used by intercity passenger rail.

Current Challenges and Projects

Freight Rail Infrastructure and Service Issues

Two freight-based issues continue to remain at the forefront of concerns from stakeholders: service availability across the northern part of the state, and intermodal container service, especially in the eastern part of the state. Both these issues have been examined in-depth through WisDOT guided efforts. The findings of these efforts and actions are discussed below

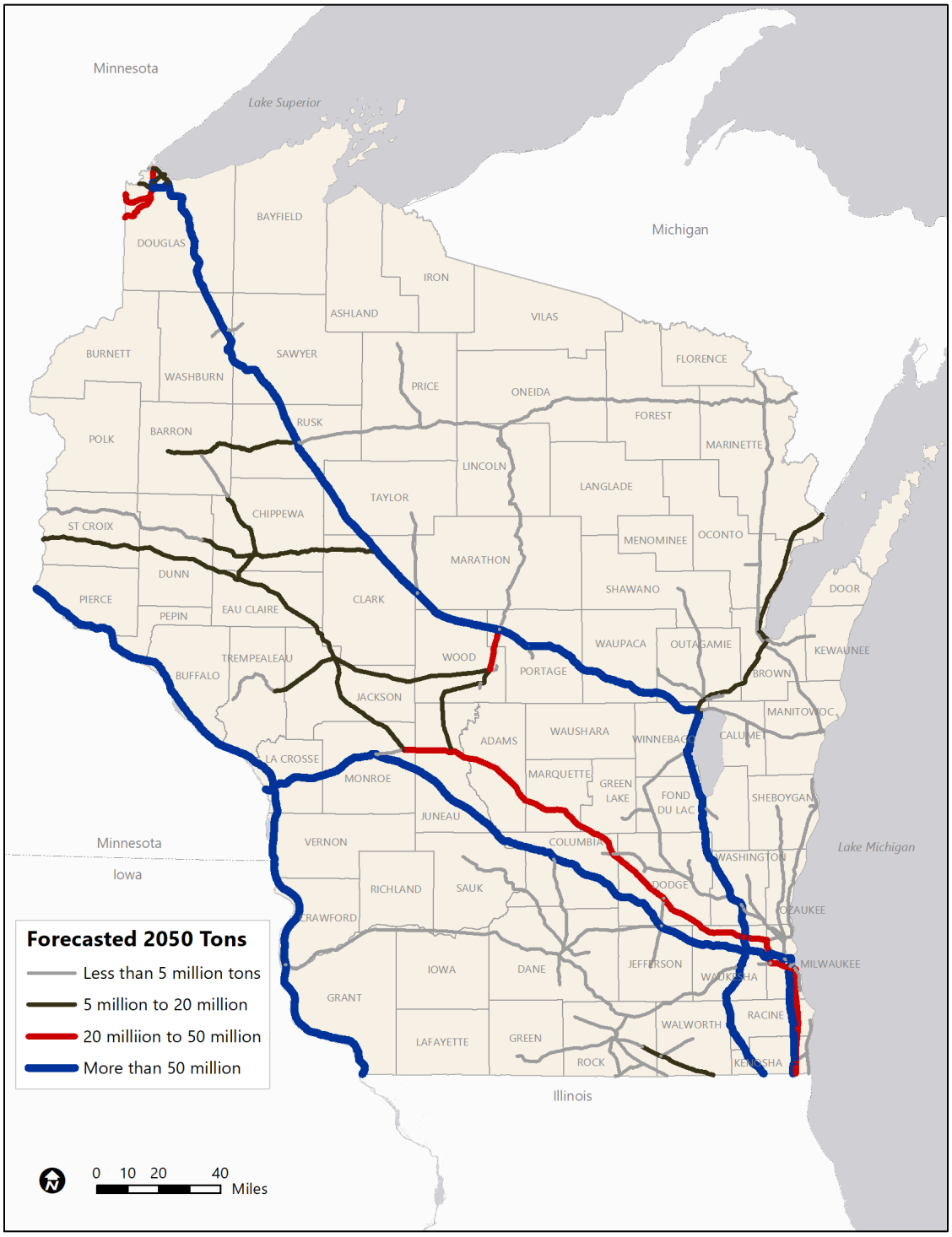
Northwoods rail service and studies

Freight rail service deterioration across northern Wisconsin was identified as a stakeholder concern at the first Governor's Freight Industry Summit in November 2011. Several portions of

the network had been placed out-of-service after CN's purchase of Wisconsin Central Limited in 2001.[83] WisDOT proposed a study of the rail marketplace, partnering with the newly formed Northwoods Rail Transit Commission. In late 2012, businesses in the region were asked about current and potential future rail use if service resumed. Many businesses, especially those shipping logs, pulpwood, and timber, indicated they would use rail if available. These results were published in September 2013 in the Wisconsin Northwoods Freight Rail Market Study.[84]

[83] *Wisconsin Northwoods Freight Rail Study - 2018 (wisconsindot.gov)*
[84] *http://www.ncwrpc.org/NorthwoodsRail/wp-content/uploads/2013/FINAL%20Northwoods%20report.pdf*

Figure 3-3: 2050 Forecasted Rail Freight Tonnage



Source: 2017 IHS Transearch with 2050 Forecast

Five years later, the study was revisited, as more rail segments were removed from service. The 2018 Wisconsin Northwoods Freight Rail Study expanded the scope to cover 13 Wisconsin counties and nine Michigan counties, reflecting the expanded membership of the Northwoods Rail Transit Commission. Economic profiles were developed for each of these 22 counties. The survey found trucking was used for the more than 70 percent of products shipped (mostly logs, lumber, wood, and pulp products). Lower shipping rates would make rail shipping attractive if it was available. With full diversion from truck to rail of the businesses that responded to the survey, more than 100,000 additional rail carloads could be generated each year. Recommendations included further research on potential rail-served businesses, especially their origin-destination pairs. Additionally, the study recommended greater collaboration among state and local agencies, and between businesses and the public sector. The report also recommended further investigation of short lines purchasing or leasing lines in the region.[85]

At the start of 2020, WisDOT worked to determine the potential value of the out-of-service lines in northern Wisconsin. The goal of these efforts was to return the lines to service with a contracted operator, thereby preserving them for rail service. The study determined that disjointed segments would not be viable; however, a larger system would be viable if it connected the origins and destinations for pulpwood and timber movements. The study involved coordinating with a block of shippers – the Wisconsin Central Group and Lake States Shippers Association – to receive rail shipping information and data.[86]

In July 2020, CN announced it would market 850 miles of light-density branch lines located in northern Michigan, Wisconsin, and Ontario. CN stated its intention that the buyer would be an operator capable of managing and growing business.[87] In late March 2021, CN announced it had come to agreement with Watco on the sale of 650 miles of railroad corridors in Wisconsin and Michigan, and 250 miles in Ontario. The sale of the U.S. lines was approved by the Surface Transportation Board and terms of the sale were not disclosed.[88]

The Wisconsin Central Group and Lake State Shippers Association filed notices with the STB in 2021 asking that the sale be designated as a "significant" transaction, and therefore subject to a higher level of scrutiny. Following meetings with both rail companies, the shipper groups filed an amended petition, noting their support of the sale and satisfaction with the outcome of those

[85] https://wisconsindot.gov/Documents/projects/multimodal/rail/northwoods2018.pdf
[86] Internal documentation of WisDOT Northwoods Team.
[87] https://www.trains.com/trn/news-reviews/news-wire/cn-to-sell-850-miles-of-low-density-lines-in-wisconsin-michigan-ontario/
[88] https://www.cn.ca/en/news/2021/03/cn-and-watco-reach-agreement-on-sale-of-rail-lines-in-northern-o/

meetings.[89] In December 2021, the STB approved exemption from regulated oversight of the sale process, allowing the transaction to proceed. Watco took over operations in February 2022, with most of the Wisconsin lines operating under the newly created Fox Valley & Lake Superior Rail System.

Intermodal Subcommittee and Report

Wisconsin has been an overhead state for most intermodal freight traffic for decades. Prior to 2001, Wisconsin had direct intermodal container service at multiple eastern Wisconsin locations. The last of these locations, the CP terminal at Port Milwaukee, closed in 2012. The terminals that remained included one private terminal in Arcadia (for Ashley Furniture) and a CN terminal in Chippewa Falls which opened in 2012. These locations are generally too far from primary business operations in eastern Wisconsin to be used by them. Further, the truck costs to ocean ports have placed Wisconsin at a disadvantage, especially for exports. With driver hours-of-service regulations, many northeastern Wisconsin locations cannot receive one-day access to intermodal facilities.

Following internal presentations and discussions within the Freight Advisory Committee (FAC), the group identified intermodal freight as a concern of both great importance and potential for the state to play a role. The Intermodal Subcommittee of the FAC was created to examine these challenges and guide research. This group met through 2018, contributing operational insight and data to the project. One partner organization, Wisconsin Manufacturers and Commerce, conducted a detailed survey of businesses to gauge current and potential future volumes of intermodal containers – both inbound and outbound, domestic, and overseas. The survey found continued interest in intermodal freight opportunities, especially across southeastern and northeastern Wisconsin. While volumes indicated a facility in eastern Wisconsin could be viable, the survey also found lane imbalances between inbound and outbound volumes that would present challenges to an operation.[90]

Recognizing the need for further research, in 2019 the Wisconsin Legislature included a provision to allow grants to intermodal freight facilities that have a public purpose.[91] A study sponsored by the East Central Wisconsin RPC and New North is underway in 2022 to assess if sustainable volumes of intermodal freight exist, and if rail and other services can be provided for a cost

[89] https://www.trains.com/trn/news-reviews/news-wire/stb-approves-watco-purchase-of-wisconsin-michigan-lines-from-cn/
[90] https://wisconsindot.gov/Pages/doing-bus/freight/inter-sub.aspx
[91] https://docs.legis.wisconsin.gov/statutes/statutes/85/093

competitive with trucking. Meanwhile, CN has established intermodal terminal operations in Duluth through the Duluth Cargo Connect collaboration, which incorporates warehousing and other value-added opportunities.[92] As noted, CN began intermodal service in New Richmond in 2021.[93]

Capital and Maintenance Projects of Significance

Ongoing investments in infrastructure are critical for maintaining a safe and reliable rail system, whether that system is in public or private ownership. The following section discusses some of the challenges and looks at some sample projects.

State-Owned system

As the primary railroad operating on the state's publicly owned system, Watco's Wisconsin & Southern (WSOR) has been tasked with utilizing a system built for lighter equipment. Over the past 30 years, WSOR has conducted ongoing efforts to rebuild these light-density lines with state assistance, including rail replacement, bridge rehabilitation and replacement, and track rehabilitation including tie replacement. WisDOT's assistance to WSOR is outlined in **Table 3-20**.[94]

Table 3-20: WisDOT Assistance for WSOR Projects (1994 – 2021)

Improvement Category	FRIIP Loans (Millions of $)	FRPP Grants (Millions of $)
Track Rehabilitation and Construction	7.5	39.4
Bridge Replacement and Rehabilitation	5.4	51.5
Rail Replacement	11.7	108.1
WSOR Communication System	2.2	-
TOTAL	**26.8**	**199.1**

Source: https://wisconsindot.gov/Documents/doing-bus/local-gov/astnce-pgms/aid/rail-proj.pdf

WSOR's track and bridge engineering was challenged in summer 2018 when a record rain event in western Dane County washed out several track sections of WSOR's Prairie Sub. To address the

[92] https://duluthcargo.com/services/intermodal/
[93] https://www.cn.ca/en/news/2020/12/new-cn-terminal-deepens-network-reach-in-twin-cities-and-midwest/
[94] https://wisconsindot.gov/Documents/doing-bus/local-gov/astnce-pgms/aid/rail-proj.pdf

damage, WisDOT awarded a $750,000 emergency FRPP grant and a $586,000 FRIIP loan to WSOR.[95]

Class I Railroads

Most Class I railroad projects are routine in nature, consisting of resurfacing rail, replacing wooden ties, and performing limited replacement of older and/or lighter-weight rail. Some larger projects, however, are of greater significance.

Muskego Yard Bypass

The Muskego Yard Bypass project will have significant benefits to rail freight operations and is designed to improve Hiawatha passenger rail operations and frequency. Currently, freight trains passing through Milwaukee on Canadian Pacific (CP) go through the Milwaukee Intermodal Station (MIS), adding noise and safety concerns in a facility dedicated to passenger travel. CP's main freight facility in Milwaukee is the Muskego Yard, several blocks southwest of the MIS in the Menominee River Valley. This project will extend a two-track main line along the southern edge of Muskego Yard, allowing up to 11 freight trains per day to bypass the MIS. The project will also incorporate centralized traffic control to the bypass and rail yard and replace or renovate multiple bridge structures. The corridor through the MIS would be retained as a secondary route for freight trains. In addition to the benefits of smoother and faster freight train operations through Milwaukee, Muskego Yard will benefit from improved access and operational flexibility.

WisDOT has been coordinating with CP on this improvement concept since 2010, and in March 2020 received a $26.3 million grant from FRA to complete the final design and construction. The timeline for the project identifies a late-2023 completion for the final design, and construction would begin in early 2024.[96]

Rail Infrastructure for frac sand transportation

Canadian National and Union Pacific made significant infrastructure investments in the 2010s to serve the frac sand sector. These include CN's $35 million project, started in 2012, to rebuild the Barron Subdivision, 40 miles of the former Soo Line corridor between Ladysmith and Poskin (just west of Barron), to serve a sand processing facility.[97] Also in 2012, CN began a $33 million, 3 year

[95] *https://wisconsindot.gov/Documents/doing-bus/local-gov/astnce-pgms/aid/rail-proj.pdf*
[96] *https://wisconsindot.gov/Pages/projects/multimodal/muskego.aspx*
[97] *https://www.prnewswire.com/news-releases/cn-to-invest-35-million-in-wisconsin-to-serve-superior-silica-sands-frac-sand-plant-and-other-producers-in-future-165969706.html*

project to improve the Whitehall Subdivision, a 74-mile section between Wisconsin Rapids and Blair.[98]

Altoona Yard

In 2014 and 2015, Union Pacific rebuilt and expanded its yard in Altoona, just southeast of Eau Claire. Five new classification tracks were built; eight existing tracks were extended. Power switches, CTC traffic control, and locomotive tracks were added.[99]

Port Milwaukee

The Harbor District in Milwaukee has been a connection point between rail, truck, and maritime operations for 150 years. For several decades, the rail and maritime operations combined as car ferries transported freight cars between Wisconsin and Michigan. The Port also hosted an intermodal rail yard until 2012, when it was closed by CP. As Port Milwaukee looked to redevelop underutilized parcels and encourage the reopening of the intermodal yard, it began reconstruction of the rail infrastructure with a 2017 FRPP grant of $1.8 million to reconstruct 15 grade crossings.[100] In 2018, it applied for and received a $2.99 million FRPP grant to upgrade more than 8,000 feet of Port-owned track, including the former intermodal yard and the west yard.[101] In late 2020, the Port issued an invitation to bid for a rail project to rebuild 5,600 feet of track (half in asphalt) and ten turnouts.[102] Additional details of Port Milwaukee are included in the **Ports with Rail Connections** section of this chapter.

Modal Connections

While some rail shipments go from origin to destination entirely by rail, many rely on other modes for first/last mile movements. The transfer points to and from rail fit into two general categories: transload and intermodal.

Transload

Transload locations include sites that handle bulk items such as aggregate, coal, grain, and potash; liquid bulk transfer of petroleum products or ethanol; and transfers of paper and

[98] https://www.railway-technology.com/uncategorised/newscanadian-national-complete-wisconsin-branch-line-upgrade-2014/
[99] https://www.therailroadcollection.com/railroad-photography/union-pacifics-yard-expansion-through-the-seasons-altoona-wisconsin/
[100] https://wisconsindot.gov/Documents/doing-bus/local-gov/astnce-pgms/aid/rail-proj.pdf
[101] https://www.bizjournals.com/milwaukee/news/2019/04/26/port-milwaukees-3-7m-rehab-will-benefit-region.html
[102] https://publicnotices.dailyreporter.com/search/detail.aspx?detail=11520729

paperboard products from warehouses. Some facilities offer value-added services, such as inventory management, processing, and packaging.

Some examples of transload operations include:

- Rail & Transload, Inc. in Watertown, which handles food-grade liquid and dry bulk, and offers services such as product blending[103]
- WSI, based in Appleton with rail-served warehouses across central Wisconsin, handles paper, lumber, steel, and other construction materials[104]
- Watco's Oshkosh Transload Terminal is a critical link in the movement of military equipment to and from Oshkosh Corporation[105]
- Watco's Madison Transload Terminal, primarily handles dry bulk and breakbulk materials including salt, fertilizer, steel, lumber, grain, machinery, industrial products, and plastic[106]

Wisconsin's most active transload locations include ports with rail access, which are discussed later in this chapter.

Intermodal

Intermodal operations are more narrowly defined modal transfers. By industry definitions, intermodal freight is that which is containerized for the entire duration of shipping. The containers may be those designed for global service (generally in 40-foot and 20-foot lengths), or for service across North America (generally 53-foot lengths). The intermodal definition also encompasses trailer-on-flat-car (TOFC) operations, otherwise called "piggyback."

Overview of intermodal freight in Wisconsin

As part of the activities of the Intermodal Subcommittee of the Freight Advisory Committee, WisDOT published a thorough examination of the intermodal freight operations in and near Wisconsin, and the global and continental factors shaping the availability of intermodal freight transportation for Wisconsin's business operations.

Among the key findings of the report:

- North America's busiest container ports are at Los Angeles-Long Beach, New York-New Jersey, Savannah, Seattle-Tacoma, and Vancouver.

---

[103] https://transloadwi.com/
[104] https://www.wsinc.com/service/transload-services/
[105] https://www.ci.oshkosh.wi.us/OshkoshTransloadTerminal.aspx
[106] https://www.watco.com/service/terminals/madison-wi/

- Intermodal trade grew by 50% from 2009 to 2016 and has grown at least 5% each year since then.
- Many of the top exports for the U.S. are grown or manufactured in Wisconsin and comprise a large portion of the state's economy.
- Balance is essential to intermodal trade; for a container to be available for exporters, an importer needs to bring that container into the state. In general, importers pay most of the round-trip costs for container availability.
- Wisconsin shippers are challenged by factors that include container availability, the concentration of facilities in the Chicago area, availability of equipment and drivers to truck containers to and from terminals, and hours-of service limits to truckers. All these factors contribute to high drayage (trucking) costs, especially in the northeastern part of the state.
- A WisDOT sponsored survey found current and future volumes of intermodal container traffic to justify consideration of a facility in the eastern/southeastern part of Wisconsin.[107]

Since early 2020, consumer demand for home items increased as more employees worked from home, and as consumers redirected spending from experiences (travel, dining, entertainment) to goods. This demand challenged the capacity of the intermodal sector, with shortages of containers, vessel space, docking slots at ports, and other bottlenecks.

Intermodal facilities in Wisconsin

In Wisconsin, three intermodal facilities are active. These facilities, all rail served by Canadian National (CN), are:

- Arcadia, a privately managed facility dedicated to supplying inbound product to Ashley Furniture, which receives more than 13,000 containers per year.[108]
- Chippewa Falls, operated by CN[109], with Menards as an anchor customer for inbound products.[110]
- New Richmond, also operated by CN, which functions as a transload facility (an "Autoport" where automobiles and light trucks are transferred to trucks for delivery) and a developing intermodal facility; both operations have the Twin Cities as the target service area.[111]

[107] https://wisconsindot.gov/Pages/doing-bus/freight/inter-sub.aspx
[108] https://www.ashleydistributionservices.com/Intermodal.html
[109] https://www.cn.ca/en/advertising/chippewa-falls/
[110] https://www.weau.com/content/news/Last-call-at-The-Lodge-Menards-purchasing-Chippewa-Falls-restaurant-431629403.html
[111] https://www.cn.ca/-/media/Files/Investors/Presentations/CN-Investor-Presentation-en.pdf

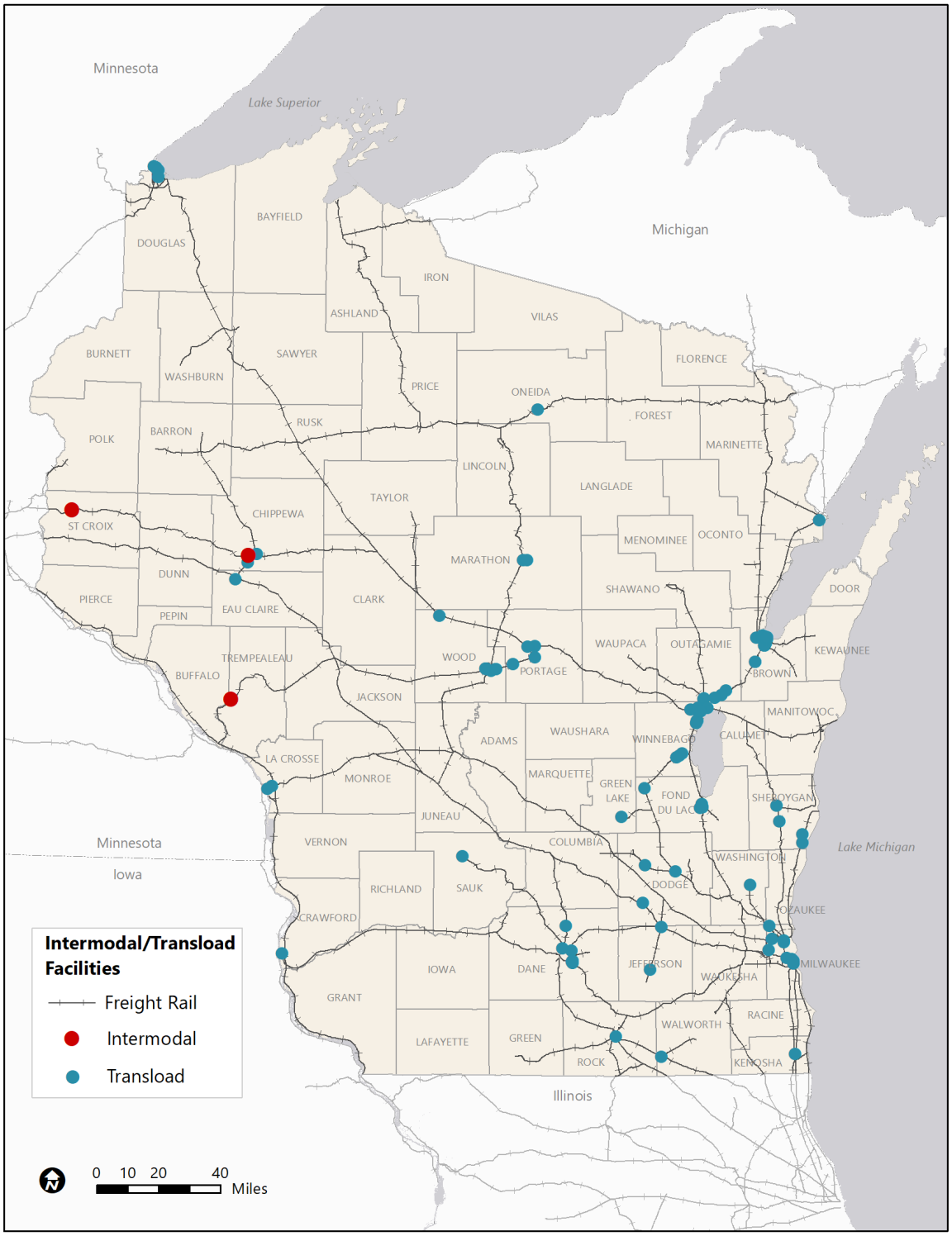
Figure 3-4 shows the transload and intermodal facilities in Wisconsin.

Until 2012, eastern Wisconsin had a truck/rail intermodal operation based at the Port Milwaukee and rail served by Canadian Pacific. The state's business community[112] and the Port itself have been actively encouraging the reopening of the facility[113], but as of July 2022 the reopening of the intermodal facility remains an unmet goal.

One application that has been funded is a research project from the East Central Wisconsin RPC, in conjunction with New North, to study the viability of an intermodal terminal in northeastern Wisconsin. The Northeast Wisconsin Intermodal Freight Facility Study was completed in May 2022.[114]

[112] https://www.wmc.org/wp-content/uploads/WMC_IntermodalSvc_MKE.pdf
[113] https://www.jsonline.com/story/money/business/2018/08/22/boosted-foxconn-push-cargo-terminal-gains-steam/1061753002/
[114] NE-Wisconsin-Intermodal-Study-Final-Report.pdf (ecwrpc.org)

Figure 3-4: Transload and Intermodal Facilities in Wisconsin 2021



Source: WisDOT facility inventory in 2021

Also growing out of the study were two WisDOT led Intermodal Summits in late 2019 – one in Milwaukee, sponsored by the Metropolitan Milwaukee Association of Commerce; the other in Appleton, sponsored by New North. Each Summit drew more than 100 attendees with interest in working together on building a business case for an intermodal facility, and in developing partnerships and other connections to facilitate development of a facility, if warranted.[115]

Ports with rail connections

As noted above, the largest rail transload locations in Wisconsin are at port facilities along the Great Lakes and Mississippi River. **Figure 3-5** shows the location of ports with rail access.

The largest port in terms of volume, Superior has been a critical transload location for more than 150 years. Combined with Duluth, MN, the Twin Ports move 35 million tons of bulk commodities per year. Coal, grain, dry bulk, taconite pellets, salt, stone, aggregate, and cement are among the commodities that move from ten facilities on the Superior side. Four Class I railroads (BNSF, CN, CP, and UP) have operations in the Twin Ports.[116]

Port Milwaukee is a major export port for bulk grain; other important traffic includes breakbulk loads such as steel, fabricated metals, mining equipment, forest products, agricultural machinery, machinery (including wind power generation components), and electrical transformers. Bulk commodities handled include salt, cement, fertilizers, limestone, and other aggregates. Milwaukee's ten-year average tonnage is 2.57 million tons, and in 2020, Port Milwaukee handled 2.81 million tons. CP and UP are the two Class I rail companies serving the Port.

With assistance from WisDOT's FRPP, Port Milwaukee has undertaken a multi-year project to upgrade all its internal rail lines. In 2020, the third phase of the Port's railroad crossing reconstruction project was finished, with seven new at-grade crossings completed. The first phase of the intermodal and classification yard railroad project was also completed in 2020, including the replacement of 2,000 feet of track on Jones Island. The fourth phase of crossing work and the second and final phase of intermodal rail work were awarded at the end of 2020 and completed in 2021. The final phase of crossing work will be completed in 2022.

In addition, Port Milwaukee was one of the first nationwide recipients of the U.S. Department of Transportation's Port Infrastructure Development Program grant, which along with a $9.5 million harbor assistance grant, will partially fund the Port's new Agricultural Maritime Export Facility

[115] *https://wisconsindot.gov/Pages/doing-bus/freight/inter-sub.aspx*
[116] *https://duluthport.com/*

(AMEF). Construction of the $31 million AMEF is the largest one-time investment in the Port's history. The Port began work on this project, in partnership with the DeLong Co., Inc. in 2021.[117] The facility is expected to be fully operational in 2023.[118]

The Port of Green Bay encompasses both sides of the Fox River channel in Green Bay, with 14 terminal operators. Top commodities include limestone, coal, cement, salt, petroleum products, ash, forest products, petroleum coke, asphalt, tallow, fuel oil, and pig iron. Annual cargo volumes ranged between 1.8 and 2.3 million tons per year between 2012 and 2018.[119] Rail service is provided exclusively by CN.[120]

Port facilities in Prairie du Chien handle 600,000 tons per year of bulk commodities, including coal, salt, sand, cement, grains, and fertilizer. Rail service is provided by BNSF and Wisconsin & Southern Railroad.[121]

Port facilities in La Crosse handle more than one million tons each year. The commodities include cement and grains. BNSF and Canadian Pacific have access to the port.

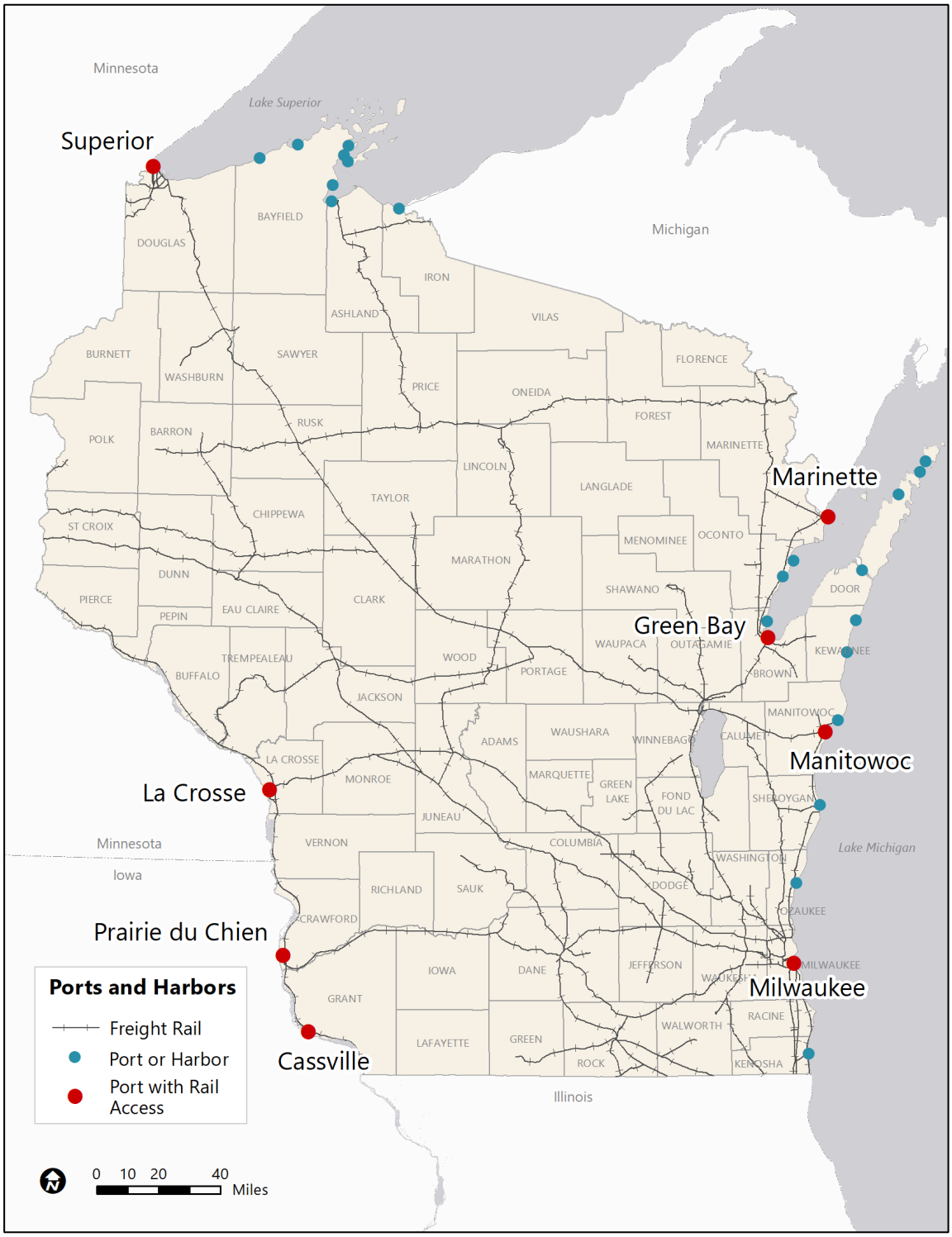
The BNSF has access to the Cassville port via the Nelson Dewey Power Plant, decommissioned in 2015. There is no current rail/port activity.

Although there is no current rail/port activity in Manitowoc, CN does have port access.

Escanaba & Lake Superior (E&LS) has access to businesses at the Marinette port, though there is no current rail/port activity.

[117] https://portmilwaukee.com/port
[118] Port Milwaukee, The DeLong Company Break Ground on Major Agricultural Maritime Export Facility - Word Search - The DeLong Co., Inc.
[119] https://www.portofgreenbay.com/
[120] https://wisconsindot.gov/Documents/travel/rail/railmap.pdf
[121] http://www.driftlessdevelopment.com/business-advantages/transportation-logistics/

Figure 3-5: Wisconsin Ports with Rail Access 2021



Source: WisDOT and Local Governments

Chapter 4 Commuter Rail

Commuter trains typically provide the most service on weekdays, with the highest frequencies during morning and evening commute hours. Most riders make trips of less than 50 miles, although some commuter operations in the largest metropolitan areas provide services over longer distances. Commuter rail systems usually have strong connections to other local transit modes such as buses. The Federal Transit Administration (FTA) is the primary source of federal funds for commuter rail systems.

There were 32 commuter rail systems operating in the United States in 2021. Some systems run their own trains while others contract out for the service. Commuter rail systems often rely on track sharing with freight railroads, with around half operating at least partially on freight-owned track. Before operating on freight-owned property, the freight and commuter railroads reach legal agreements governing the relationship including hours of operation, access, number of trains, and shared maintenance costs. These partnerships have contributed to significant growth in commuter rail, increasing from six commuter rail systems 40 years ago.

WisDOT's Role in Commuter Rail

WisDOT has a long-standing commitment to transit services as a key part of a healthy economy and the mobility of residents. Supporting locally driven commuter rail remains part of that commitment.

Wisconsin law defines commuter rail as:

> *rail passenger service, operating primarily on a dedicated right-of-way on existing railroad tracks used for rail freight service or intercity rail passenger service between and within metropolitan and suburban areas, connecting these areas with large business or urban centers in this state or another. Commuter rail usually operates during peak travel times with limited stops and in conjunction with other transit modes as part of a regional transit system.*[1]

Metra provides the only commuter rail service in Wisconsin. Unlike many states with commuter rail service, Wisconsin does not have any special purpose authorities or agencies with commuter rail oversight. Metra and its parent agency, the Illinois Regional Transportation Authority, are responsible for its service in Wisconsin. The State of Wisconsin does not contribute state funds to

[1] *Wis. Stat. 85.064* Wisconsin Legislature: 85.064

the service, nor own the station or track. WisDOT and Metra staff have long standing working relationships to ensure coordination on safety and other rail related issues.

Local governments, including Metropolitan Planning Organizations, are prominent in decision making about the nature, amount, and location of transit services to be provided.

WisDOT continues its commitments to supporting the potential implementation of commuter rail. This most often has involved providing coordination and technical assistance to local government led studies. WisDOT's support focuses on efforts on common issues and considerations when planning new or extended commuter rail service, including:

- Coordination between different rail providers
- Intermodal connections
- Governance

Coordination Between Different Rail Providers

Existing and planned commuter rail services in Wisconsin do not and most likely will not operate on track dedicated solely to commuter rail operations. Instead, commuter rail will likely share track with freight and/or intercity passenger rail service. Sharing track with other rail users requires infrastructure to protect capacity for current and future rail operations as well as a high level of schedule coordination to ensure efficiency and safety. WisDOT does not have a direct role in coordinating track use between host railroads and commuter rail operators.

Commuter rail operations do not have a legal right of access to the railroad system. For commuter rail operations to access freight railroad-owned lines, the commuter rail operator must reach agreement with the host railroad as does Amtrak. These agreements typically discuss liability issues, compensation for access and maintenance, and capacity issues.

Intermodal Connections

A well-designed commuter rail service is integrated with other transportation services. For example, the Kenosha Metra station is served directly by Kenosha Transit, taxi, and regional commuter bus service. The station also provides vehicle and bicycle parking. These services increase the number of ways to access the station and increase personal mobility of users.

As new commuter rail service and stations are planned, intermodal connections may be identified, evaluated, and included where possible. WisDOT continues its commitment to support intermodal connections by focusing on:

- Improving coordination among transportation modes, including providing technical assistance in developing specific strategies for creating connections between modes and working with local governments to identify opportunities for new connections.
- Increasing the availability of transportation modes that can provide intermodal connections by implementing WisDOT's policies and programs for travel by intercity passenger rail, intercity bus; public transit, county-based transit service for seniors and people with disabilities, bicycling; and walking.

Funding

Studying, planning for, and implementing commuter rail projects requires money. This is especially true in the early planning stages such as feasibility studies and alternatives analysis. Funding is also needed for railroad operations, service planning, environmental studies, and to support capital and operating expenses.

New commuter rail projects commonly seek funding through the FTA's Section 5309 Transit Capital Investment Grant (CIG) program for funds.

The federal Bipartisan Infrastructure Law, enacted as the Infrastructure Investment and Jobs Act in 2021, continues the CIG program. Eligible applicants for the CIG program include state or local governmental authorities. Applicants seeking CIG funding are required to complete a series of steps over several years.

There are three categories of eligible projects under the CIG program: New Starts, Small Starts, and Core Capacity. Completion and acceptance by FTA of two phases of study (Project Development and Engineering) is required before competing for a construction grant agreement.[2] CIG funding can be used to reimburse up to 80% of the cost to develop preliminary engineering and final design after acceptance into the program. The program requires federal funds be matched by a public sponsor. The CIG program is highly competitive and requires a

[2] *Fact Sheet: Capital Investment Grants Program | FTA (dot.gov); Final Interim Policy Guidance Federal Transit Administration Capital Investment Grant Program June 2016 (dot.gov))*

considerable initial investment to complete environmental and design/engineering work before reimbursement.[3]

In addition to the CIG grants program, FTA provides transit operating assistance under Section 5307. This funding assistance is available to all forms of public transit, including commuter rail. Section 5307 funding is available to designated recipients that are public bodies with the legal authority to receive and dispense federal funds. Public-private partnerships can be structured to participate in the program.[4]

Wisconsin has a program that can provide funding to commuter rail transit. Under Section 85.064 Wis. Stats., WisDOT has the authority to administer a commuter rail transit system development grant program.[5] This program is unfunded as of early 2022.

Governance

Wisconsin's commuter rail study areas cross many municipal boundaries. Successful commuter rail service now and in the future not only hinges on operating characteristics but also on the cooperation of local governments.

Often used for commuter rail, regional transit authorities (RTAs) is a special purpose unit of government that plan, administer, and fund, transit systems on a regional basis. Wisconsin law does not have enabling legislation for RTAs or other special purpose regional transit bodies.

Existing Commuter Rail Service

Wisconsinites have access to commuter rail from the Northeast Illinois Regional Commuter Railroad Corporation – commonly known as Metra. Metra is one of three of the Illinois Regional Transportation Authority's service boards: Metra (rail); Pace (regional bus); Chicago Transit Authority (bus and rail). Founded in 1982, Metra brought together several commuter rail lines operating separately until put under the Regional Transportation Authority's (RTA) and then Metra's jurisdiction.[6] The RTA also took over some of the bankrupt Rock Island and Milwaukee Roads' extensive commuter operations and track that provided service into Wisconsin when it was sold off in the early 1980's.

---

[3] *Capital Investment Grants Program | FTA (dot.gov)*
[4] *Urbanized Area Formula Grants - 5307 | FTA (dot.gov); FTA maintains a list on its website of competitive grant programs, some of which could be used for commuter rail Grant Programs | FTA (dot.gov)*
[5] *Section 85.064, Wis. Stats. Wisconsin Legislature: 85.064*
[6] *Regional Transportation Authority (RTA) | RTAMS webpage accessed February 2022*

Metra's Service at the Kenosha Metra Station[7]

Metra's Union Pacific North Line's (UP-N) northern most stop is the Kenosha station. It is the only commuter rail service in Wisconsin. The city of Kenosha owns the land and maintains the parking and depot. The city of Kenosha does not directly financially contribute to Metra for operational costs through sales tax or other direct payments. Financial support is provided through its in-kind contribution owning and maintaining the station. UP owns the tracks and yard facilities in Kenosha.

Metra UP-N service provides five trains in each direction daily Monday – Friday, and three to seven in each direction on weekends depending on demand.[8] A nearby maintenance yard services trains overnight. Metra owns and maintains the train cars and locomotives; UP is the host railroad operating and dispatching the trains. Service runs 52 miles with 28 stops on the UP-N track ending at its southern most stop at Chicago's Richard B. Ogilvie Transportation Center.

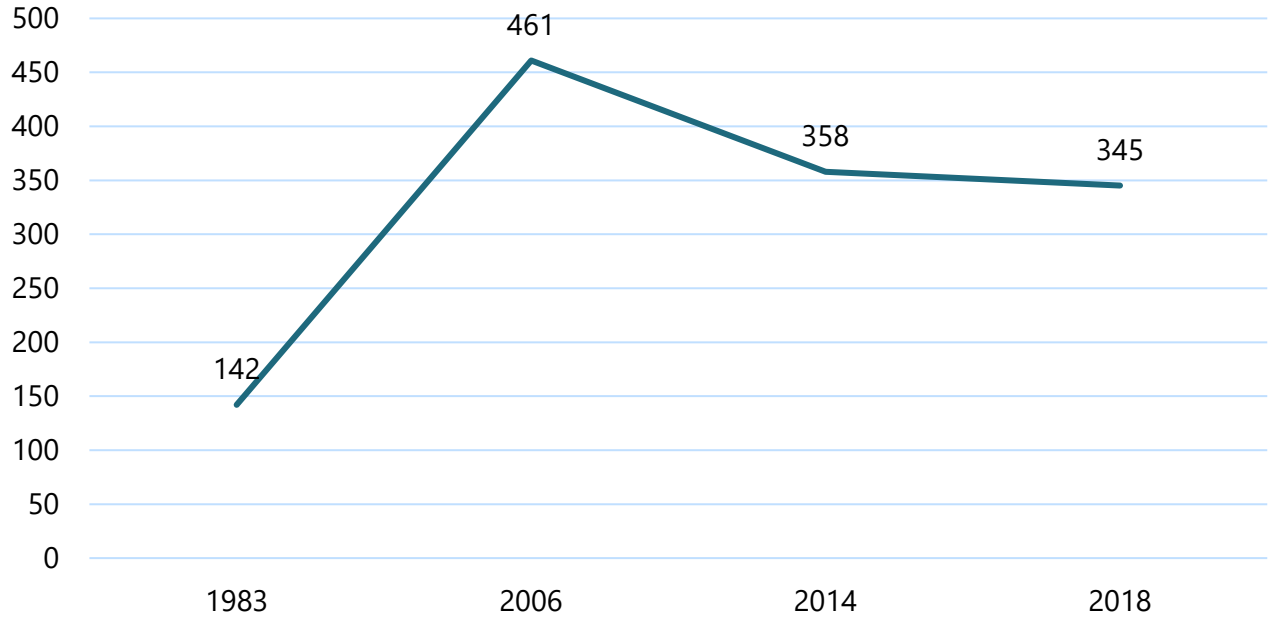
The Kenosha Metra station serves as an intermodal connection point for the region. The Kenosha streetcar system and two Kenosha transit bus routes service the station. Wisconsin Coach Lines is the intercity bus carrier providing regional commuter coach service to the Metra station from Milwaukee and Racine.

Eight of the 26 stations on the UP-N line had at least 1,000 daily boardings on to trains in 2018. The Kenosha station had around 350 daily passengers getting on the train in 2018. Eighteen trains served the Kenosha station on weekdays in 2018. In 2018, Kenosha ranked first in boardings and alightings among the three UP-N stations with similar numbers of weekday trains.[9]

Kenosha Metra Station boardings have generally remained stable between 2013 and 2018, having reached a peak in 2006 (**Figure 4-1**).

[7] *Station information in this section from Kenosha | Metra unless noted otherwise UP-North. Accessed February 2022*
[8] *UP-N.pdf (metrarail.com) accessed February 2022; effective Aug. 20021*
[9] *State of the System - Union Pacific North Line.pdf (metra.com) TABLE 3: UP-N STATION CHARACTERISTICS; published 2021*

Figure 4-1: Kenosha Metra Station Boarding 1983 - 2018[10]



In 2009, ridership on the UP-N Line peaked at 9,839,792 riders and then dropped off during and shortly after the recession of 2008 and 2009. Between 2012 and 2016, ridership on the Union Pacific North Line remained steady. Ridership dropped slightly after 2016 to 8,552,117 in 2019.

Metra reduced service on all its lines in 2020 and early 2021 in response to the COVID-19 pandemic. As a result, UP-N ridership in 2020 was dramatically reduced to 2,300,363 [11] Weekday service on the entire line was reduced nearly 43% from 2019 to 2020. The entire Metra system saw weekday service reduced about the same amount.[12] Metra's service levels are expected to rebound as the economic recovery from the pandemic continues.

On-time performance on the UP-N line exceeded that of the system as a whole in 2020 for all measured services:[13]

- Weekdays: 98.7% on UP-N vs. 95.9% for the Metra system

[10] State of the System - Union Pacific North Line.pdf (metra.com) *TABLE 3: UP-N STATION CHARACTERISTICS; published 2021*
[11] Microsoft Word - 2020 Annual Ridership Report v4 (metra.com) *Ridership Trends Annual Report 2020 published by Metra February 2021; Table 3: Estimated Passenger Trips by Rail Line*
[12] Microsoft Word - 2020 Annual Ridership Report v4 (metra.com) *Ridership Trends Annual Report 2020 published by Metra February 2021; Table 13: Trains Per Day 2019 vs 2020*
[13] DelaysAndTrains_ServicePeriod_2020.xlsx (metra.com) *; On time Performance published by Metra January 2020*

- Saturdays: 96.2% on UP-N vs. 95.2% for the Metra system
- Sundays and holidays: 97.8% on UP-N vs. 96.5% for the Metra system
- Total all days: 98.5% on UP-N vs. 95.9% for the Metra system

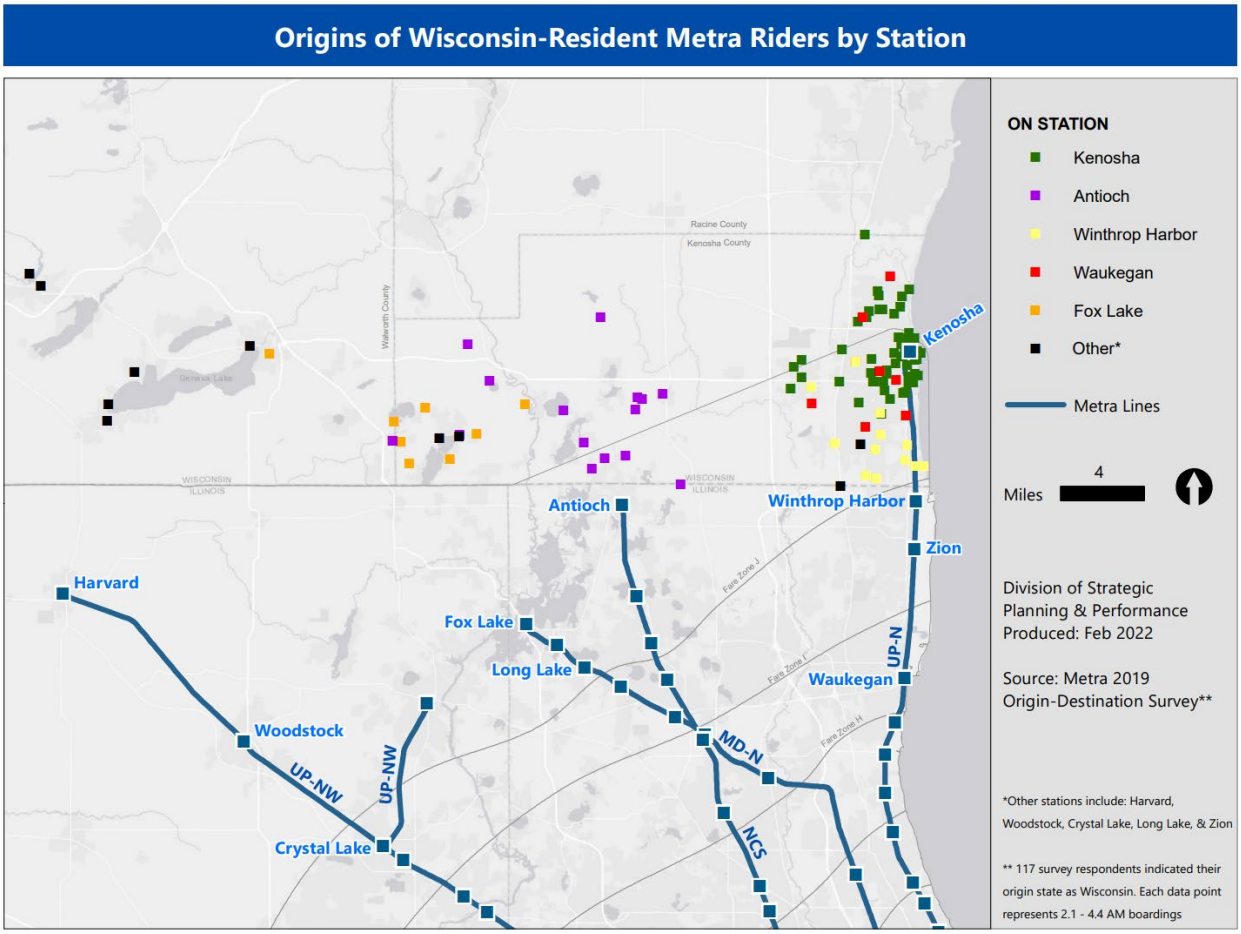
A spring 2019 passenger survey indicated how Kenosha Metra Station users accessed the station:[14]

- 37% drove alone
- 27% were dropped off
- 15% walked
- 13% car-pooled
- 3% ride share (transportation network companies)
- 2% biked

Figure 4.2 shows the Wisconsin origins of Metra riders responding to the 2019 Metra survey.[15]

[14] *Microsoft Word - 2019 MOA and MOE Introduction_revised (metra.com); percentages do not add up to 100 due to rounding and 2% of riders accessing the station by an unspecified mode.*
[15] *Unpublished map provided by Metra staff February 2022.*

Figure 4-2: Origins of Wisconsin Resident Metra Riders by Station 2019



The Kenosha Metra station provides connections to national passenger service and Chicago area transit by bringing riders to downtown Chicago's two rail station hubs – Ogilvie and Union Station.

Ogilvie Transportation Center is the hub for three Metra routes serving Chicago's north and northwest suburbs with connections to a dozen Chicago Transit Authority (CTA) bus routes and three CTA trains. Ogilvie station is the second busiest in Chicago, after nearby Union Station.[16]

Located a half mile away from Ogilvie Transportation Center, Chicago Union Station (CUS) consistently ranks among the top ten busiest rail stations in North America. In 2018, it was the third busiest passenger railroad terminal in the United States, with an average of over 120,000

[16] *Ridership by Station | RTAMS Data points from 2002, 2006, 2014, 2016, 2018.*

daily weekday intercity passengers and commuters, including Metra and Amtrak riders. CUS serves 16 different Amtrak intercity rail lines and six Metra commuter rail lines - more than 300 weekday trains in total. It serves as one of the major hubs for Amtrak's national network with 12 Amtrak routes. The station also serves as a hub for intercity bus services, including several Amtrak Thruway connecting bus services to Wisconsin and other states. There are five CTA rail lines and several CTA bus routes within three blocks of Chicago Union Station.[17]

Wisconsin Access to Commuter Rail Service in Illinois and Minnesota

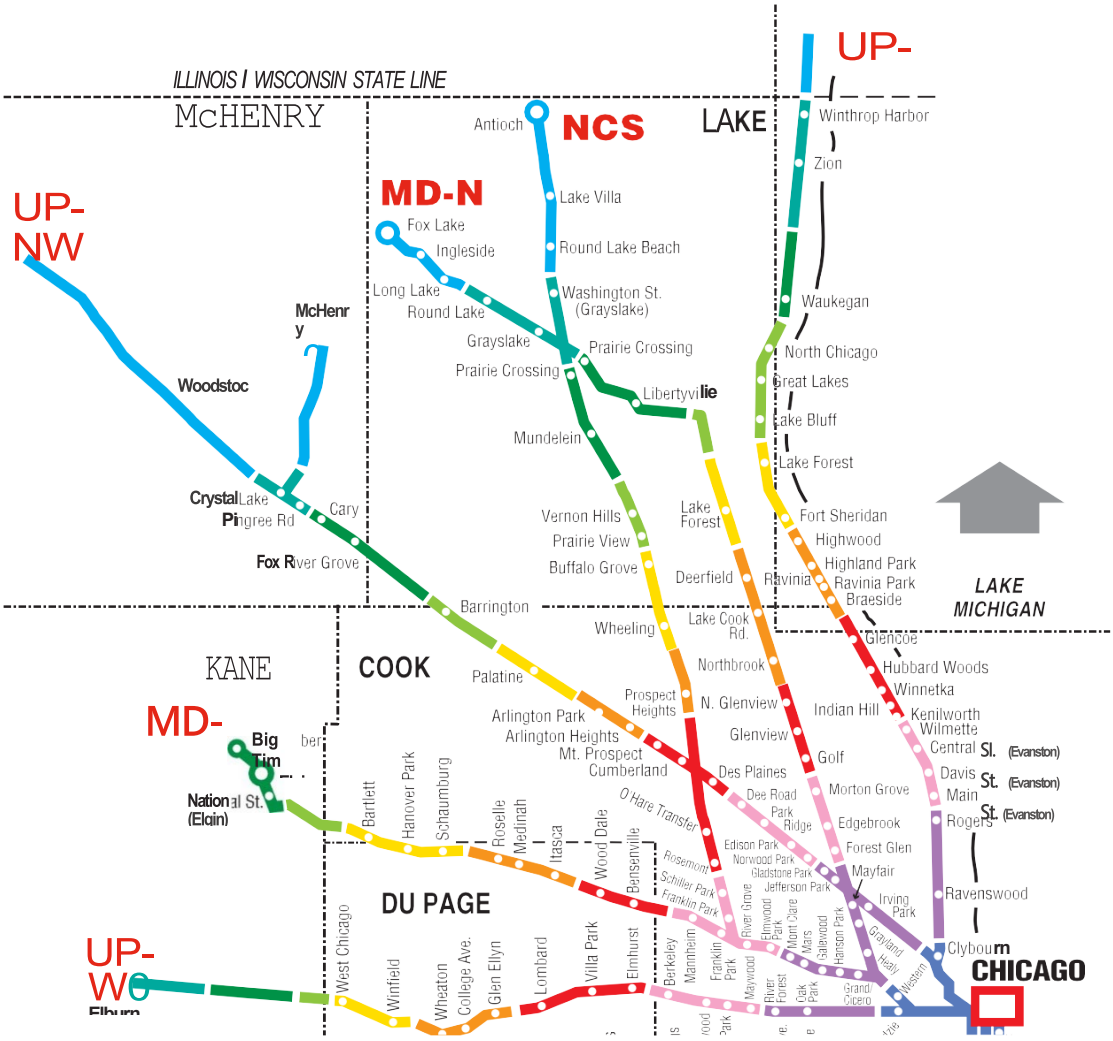
The Twin Cities (St. Paul and Minneapolis, Minnesota) has one commuter rail line, the NorthStar. The NorthStar travels northwest between downtown Minneapolis and Big Lake, MN.[18]

There are four Metra commuter rail stations in northern Illinois near the border with Wisconsin (**Figure 4.3**):

- **Antioch, Illinois**
  - Location: in Lake County less than five miles across the Wisconsin border from Racine County; midway between downtown Milwaukee and downtown Chicago at 53 miles from Union Station and 47 miles from Milwaukee.
  - Rail Service: northern end point of the North Central line; frequent daily service.
- **Harvard, Illinois**
  - Location: in McHenry County about six miles across the Wisconsin border from Walworth County; as Chicago's most northwesterly commuter rail station, attracts commuters from the Rockford region of northern Illinois and from South-Central Wisconsin; 63 miles from Ogilvie Station in downtown Chicago.
  - Rail Service: northern end point of the UP-Northwest line with frequent daily service.

[17] *CUS-Fact-Sheet-2019.pdf (chicagounionstation.com) Union Station Station Facts 2019*
[18] *NorthStar - Metro Transit*

Figure 4-3: Metra System Map North and West of Downtown Chicago 2019 [19]



- **Fox Lake, Illinois**
  - Location: in Lake and McHenry Counties about 12 miles across the Wisconsin border from Kenosha County; about 50 miles from Chicago's Union Station.
  - Rail Service: northern most stop on the Milwaukee District North line with frequent daily service. Service into Wisconsin ended in the early 1980s. The line from just north of the Fox Lake Metra Station to the Wisconsin border is owned by the Wisconsin River Rail Transit Commission and WisDOT owns the rail corridor on the Wisconsin side of the border.

[19] *System_Map_Fares_Zones_08_2020 (metra.com)*

- **McHenry, Illinois**
  - Location: in McHenry County about 12 miles across the Wisconsin border from Walworth County; 50 miles from Ogilvie Station.
  - Rail Service: northern end point of the Metra UP Northwest Line; Limited service as this Metra line splits into two routes at Crystal Lake with most trains going to McHenry or Harvard; Service once extended to Williams Bay WI (near Geneva Lake) until ending in the early 1980s.

Commuter Rail Plans and Studies[20]

WisDOT provides technical assistance and support and may study commuter rail identified by Metropolitan Planning Organizations as a priority in their area.

MPOs with active commuter rail studies or discussions in their MPO long-range transportation plans include:

- Southeastern Wisconsin Regional Planning Commission (SEWRPC)
- State Line Area Transportation Study (SLATS) (Beloit area MPO)
- Joint Janesville MPO - SLATS commuter rail study
- Chicago Metropolitan Agency for Planning (CMAP)
- Dubuque Metropolitan Area Transportation Study (DMATS)

SEWRPC

SEWRPC is the MPO for the Milwaukee urbanized area, the largest metropolitan area in the state. SEWRPC's area includes just over two million people, more than a third of Wisconsin's total population. SEWRPC's planning area includes the seven-county region of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha.

Racial Demographics

The area's racial make-up is 71% White and 29% racial/ethnic minority. That contrasts with the state, which is 87% White. However, the racial distribution is not uniform across the region, as racial/ethnic minorities are concentrated in Milwaukee County. The population of each of the

[20] *This inventory of plans and studies is current as of January 2022; Air quality determinations are accurate as of July 2021.*

seven counties is majority White. Milwaukee County's population has the smallest percentage of Whites, representing 70% of the population. The city of Milwaukee is the only minority majority city in the state, with 63% of the population being racial/ethnic minorities.[21] See **Chapter 9 Equity Context** for more detail about the geographic distribution of other demographic groups, such as those living in poverty, relative to the location of train tracks and passenger rail service.

Air Quality Status – Non-attainment and Maintenance Areas

Portions of several counties in SEWRPC's region are federally designated air quality non-attainment or maintenance areas as of July 2022:[22]

- Milwaukee County – particulate matter and ozone
- Kenosha County (partial) – ozone
- Ozaukee County – particulate matter and ozone
- Racine County (partial) – particulate matter and ozone
- Washington County (eastern portions of the county) - particulate matter and ozone
- Waukesha County (partial) – particulate matter and ozone

SEWRPC, as an MPO with non-attainment and maintenance areas for air quality, used a technical process called conformity determination in development of their long-range transportation plan to account for the potential impacts on air quality of plan implementation.[23]

Vision 2050 Long-range Transportation Plan

SEWRPC's Vision 2050 long-range transportation plan includes major expansion of all types of transit service. If implemented, commuter rail service would increase from the current level of 10 hours a day (Metra only service) to 190 hours daily, mostly from four new commuter rail lines.[24]

Two of the commuter rail lines would start from downtown Milwaukee, with two spokes from one of those main lines. The south line would go from downtown Milwaukee into Racine, Kenosha

---

[21] *Population statistics are from SEWRPC long-range transportation plan Vision 2050 pr-55-vol-1-ch-2-final.pdf (sewrpc.org) Census 2020 statistics were not yet available at the time of the writing of the draft Wisconsin Rail Plan 2050*

[22] *Wisconsin Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants | Green Book | US EPA*

[23] *Southeastern Wisconsin Regional Planning Commission Memorandum Report No. 245 ASSESSMENT OF CONFORMITY OF THE FISCALLY CONSTRAINED TRANSPORTATION SYSTEM AND TRANSPORTATION IMPROVEMENT PROGRAM Microsoft Word - 00253757.DOCX (sewrpc.org) maps pages 20 & 21; text page 19*

[24] *PUBLIC TRANSIT | VISION 2050 (vision2050sewis.org) 2020UpdateReportFinal.PDF (sewrpc.org)*

and on to downtown Chicago. The western line would go from downtown Milwaukee to the western suburb of Oconomowoc in Waukesha County. One of the branch lines from the western line would go up the city of Milwaukee's North 30th Street Rail Corridor. The other would branch off at Pewaukee to go south to the City of Waukesha.

Vision 2050's multi-modal transit system would integrate commuter rail with park and ride lots; local and express buses; bus rapid transit lines; streetcar lines; and the downtown Milwaukee Intermodal Amtrak station (**Figure 4.4**).

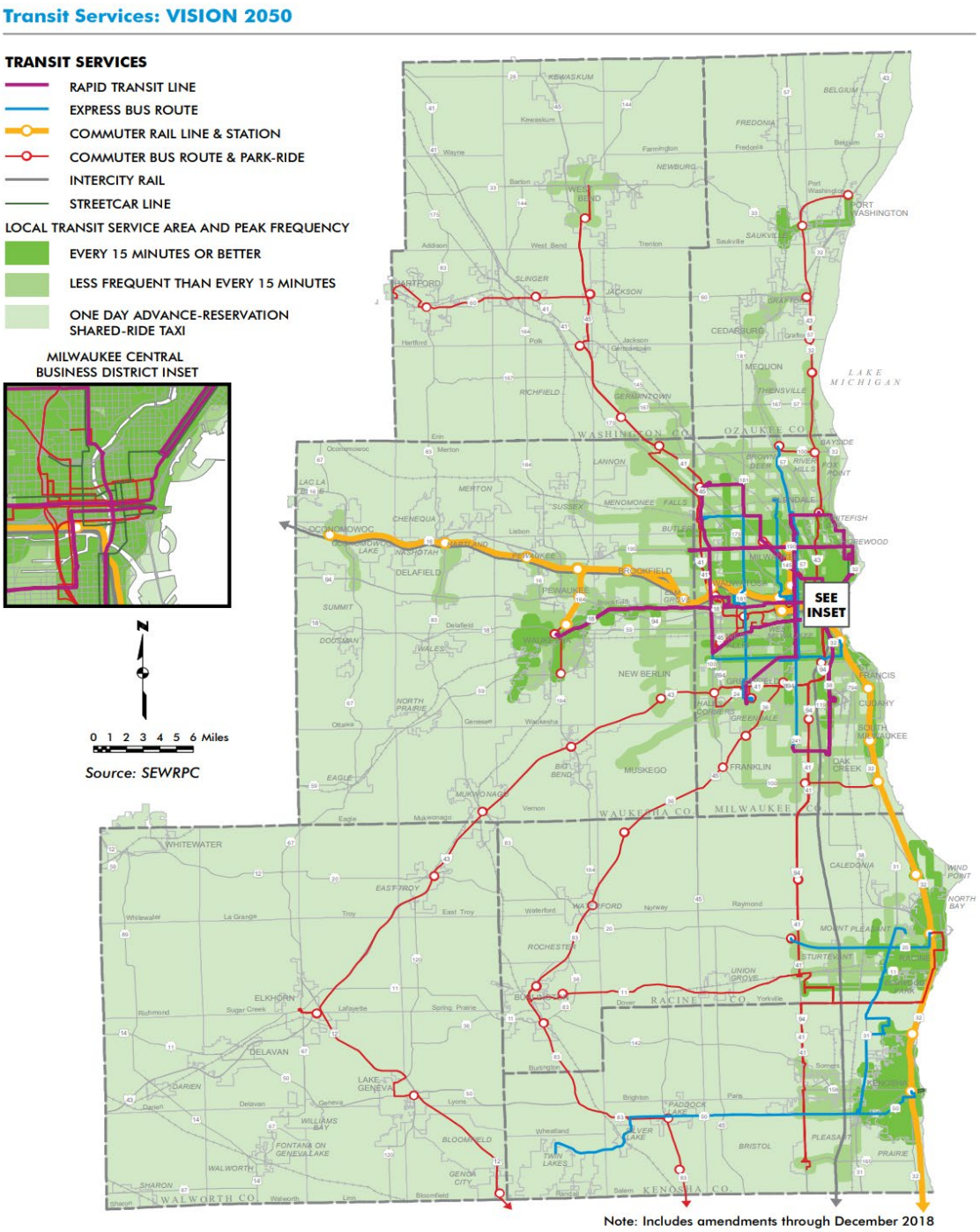
The fiscally constrained portion of Vision 2050 acknowledges that without additional revenue sources, implementation of commuter rail recommendations cannot be achieved. Private investment and/or state enabling legislation to create a special purpose transit authority may be necessary to be able to raise revenues. Therefore, commuter rail is not in the fiscally constrained portion of Vision 2050. Expanded commuter rail service remains in Vision 2050 to implement should fiscal conditions change.[25]

Private Commuter Rail Initiatives in SEWRPC Area

Privately owned companies have been exploring implementing commuter rail service in the Milwaukee region. No privately owned and initiated commuter rail service is currently operating in the U.S. WisDOT will continue to provide technical assistance as these proposals develop further.

[25] *pr-055-vol-3-2nd-Ed-complete-final-reduced.pdf (sewrpc.org) volume 3 chapter 2 pdf 194+*

Figure 4-4: SEWRPC Vision 2050 Transit Map (not fiscally constrained)[26]



[26] 2020UpdateReportFinal.PDF (sewrpc.org), Map 2.2

SLATS – the Beloit MPO Urban Area[27]

The Stateline Area Transportation Study (SLATS) MPO area includes a portion of northern Illinois, with most of its planning area in Wisconsin. The northern MPO boundary is less than ten miles from the Janesville MPO area boundary and its eastern MPO boundary is about six miles from SEWRPC's southwestern boundary. The SLATS area is not served by commuter rail.

Racial Demographics

The population in the Beloit Urbanized Area is 70% White. About 30% identify as racial/ethnic minority, with the two largest groups being Hispanic or Latino (12%) and Black (9%). The City of Beloit racial/ethnic minority make up is 39%, which is higher than less densely developed locations in the MPO area.[28] See **Chapter 9 Equity Context** for more detail about the geographic distribution of other demographic groups, such as those living in poverty, relative to the location of train tracks and passenger rail service.

Air Quality[29]

The Beloit MPO area is in an air quality attainment area.

Commuter Rail Studies

Several completed studies identify commuter or regional rail connections with the Janesville and Madison urban areas or the Chicago based Metra service might be feasible. No alignments from these studies advanced for further study or implementation.

The most recent study was completed in 2021. The SLATS Passenger Rail Study coincides with the update to the MPO long-range transportation plan, which began in 2021. Five rail alignments were examined:

1. Rockford-Beloit-Janesville-Evansville-Madison, labeled as Rockford-Madison (West)
2. Rockford-Beloit-Janesville-Milton-Madison, labeled as Rockford-Madison (East)
3. Harvard-Janesville-Evansville-Madison, labeled as Harvard-Madison (West)

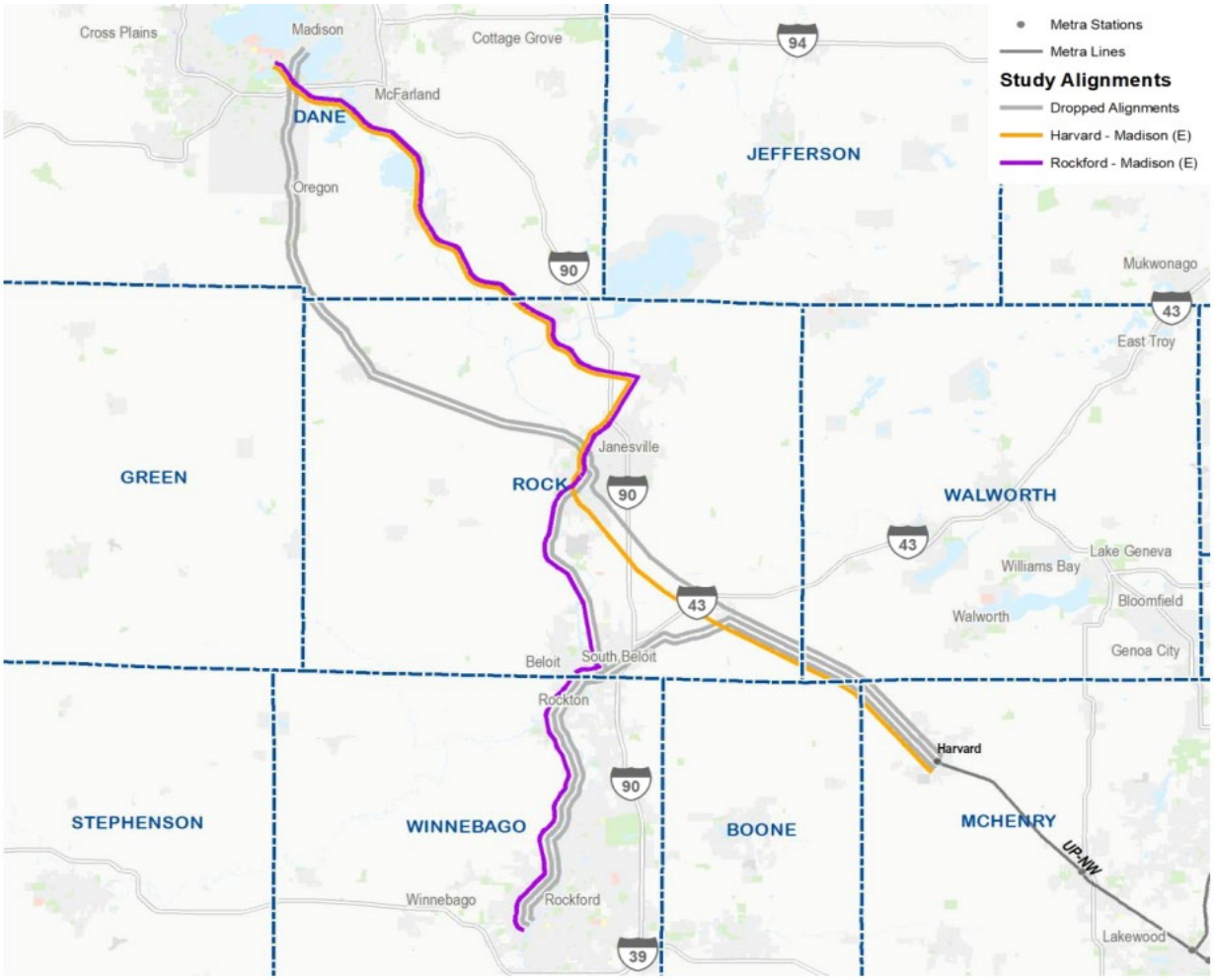
---

[27] *SLATS Rail Study (beloitwi.gov)*
[28] SLATS 2045 LRTP Appendix C_Demographics Trends.pdf (beloitwi.gov) *SLATS 2045 Long Range Transportation Plan, Appendix C Demographic Trends, October 2021, pages 9-10.*
[29] *Current Nonattainment Counties for All Criteria Pollutants | Green Book | US EPA*

4. Harvard-Janesville-Milton-Madison, labeled as Harvard-Madison (East)
5. Harvard-Beloit (with an optional connection to Rockford)

The SLATS Passenger Rail Study identified alignments 2 and 4 as viable enough to advance to further study (**Figure 4.5**). The Passenger Rail Study indicates its results will be used in development of the SLATS long-range transportation plan update in 2022.[30]

Figure 4-5: SLATS Study Alignments to Advance for Further Study



[30] *SLATS Rail Study (beloitwi.gov)*

Janesville and Beloit MPOs

The Janesville MPO is located less than ten miles north of the SLATS MPO area. The southernmost part of SEWRPC's MPO boundary is in the next county to the east. The Janesville area is not served by commuter rail.

Racial Demographics

The population of the Janesville MPO area is 92% White with 7% racial/ethnic minority. The population varies greatly among the jurisdictions in the MPO area from as low as 1.2% in the Town of Janesville, to a high of 17.7% in the Town of Rock.[31] See **Chapter 9 Equity Context** for more detail about the geographic distribution of other demographic groups, such as those living in poverty, relative to the location of train tracks and passenger rail service.

Air Quality[32]

The Janesville and Beloit MPO areas are in air quality attainment areas.

Commuter Rail Studies[33]

The Janesville MPO, SLATS, some of their partner communities, and WisDOT partnered to examine extending Metra service on UP's Northwest line from Harvard, Illinois. The 28 conceptual alternatives in the 2008 South Central Wisconsin Commuter Transportation Study (SCWCTS) included nine commuter rail alternatives connecting the Janesville-Beloit areas to Chicago and four connecting Madison, Janesville, Beloit, and Rockford. Two commuter rail alternatives were recommended for future study:

- Madison to Rockford with routing variants through Milton and Evansville, Wisconsin
- Janesville (and/or Beloit) to Harvard, Illinois, which would connect to Metra service (i.e., not an extension of Metra service)

The SCWCTS also prioritized five rail corridors for preservation of rail facilities and rights of way for continued freight rail service and potential future commuter rail service:

- Janesville to Harvard

---

[31] *Microsoft Word - Table of Contents (janesvillewi.gov) Environmental Justice Analysis adopted May 2021*
[32] *Current Nonattainment Counties for All Criteria Pollutants | Green Book | US EPA*
[33] *Exec Report cover (beloitwi.gov) South Central Wisconsin Commuter Transportation Study Executive Summary*

- Beloit to Clinton
- Janesville to Rockford
- Madison to Milton to Janesville
- Madison to Evansville to Janesville

Reference to the study and its outcome are cited in both the Janesville MPO and SLATS long range transportation plans.[34]

Chicago Area MPO Commuter Rail Recommendations

The Chicago Metropolitan Agency for Planning (CMAP) is the MPO for the greater Chicago area. The MPO area extends to several northern Illinois counties adjacent to Wisconsin's southern border. CMAP's area includes seven counties (Cook, DuPage, Kane, Kendall, Lake, McHenry and Will) and 284 communities.

Racial Demographics

The CMAP MPO area includes eight and a half million people. Demographically the area is split almost evenly between White (51%) and racial/ethnic minorities (49%). The two largest racial/ethnic minority groups are Hispanic (23%) and Black (17%).[35]

Air Quality – Non-Attainment[36]

The Chicago area includes counties that are federally designated as air quality non-attainment areas for ozone and particulate matters. The MPO conducts technical analysis known as conformity determination in development of their long-range transportation plan to account for the potential impacts on air quality of plan implementation.

CMAP's GO To 2040 Long-Range Transportation Plan

CMAP's long-range transportation plan, Go To 2040, includes some commuter rail projects scheduled for implementation relevant to Wisconsin travelers:[37]

---

[34] *2020-2050 Long Range Transportation Plan (Update) | Janesville, WI (janesvillewi.gov) ; 2016 - Laserfiche WebLink (beloitwi.gov)*
[35] *Socioeconomic shifts in the Chicago region - CMAP (illinois.gov) SOCIOECONOMIC SHIFTS IN THE CHICAGO REGION, published by CMAP July 2017.*
[36] *Current Nonattainment Counties for All Criteria Pollutants | Green Book | US EPA*
[37] *Download the Full Plan - CMAP (illinois.gov) ; major capital projects 51a1943f-0c2d-4243-8d94-9232f4598566 (illinois.gov)*

- Improvements to Metra's UP North line**:** The Kenosha Station is the northern end of the line. Improvements will address the operating capacity and reliability of the line between Ogilvie Transportation Center and Kenosha through installation of additional crossovers and track improvements. A new outlying coach yard will allow for more efficient servicing of equipment and accommodate expansion of service.
- Improvements to Metra's UP-Northwest line**:** The closest station to Wisconsin is in McHenry. The two planned improvements are infrastructure upgrades and a 1.6-mile extension to Ringwood from McHenry. Infrastructure upgrades include improvements to the existing signal system, additional crossovers, and other track improvements to increase operating capacity and reliability.

CMAP's previous long-range transportation plans included two Metra studies that included extending service towards Wisconsin. Neither of these alternatives have been advanced for implementation:

- An extension of the Milwaukee District North line past Fox Lake into Wisconsin.
- An extension of the UP-Northwest line from Elgin to Rockford, which is about 18 miles from Beloit.

Chapter 5 Intercity Passenger Rail - Corridor and Long-Distance Service

Intercity passenger rail refers to passenger rail service providing transportation between cities, metropolitan areas, and rural communities at speeds and distances greater than that of commuter rail. Intercity passenger rail in Wisconsin is further broken down into corridor and long-distance service. Amtrak's Thruway bus service supports intercity passenger rail by providing direct intercity bus service to rail stations timed to train arrivals and departures.

Intercity passenger rail corridor service as described in the Wisconsin Rail Plan 2050 generally includes:

- Stations in multiple municipalities
- Connections to nearby metropolitan or urban areas
- Travelling greater distances than commuter rail
- Service that supports multiple trip purposes
- Fares higher than commuter rail but less than long-distance rail
- Faster speeds than commuter rail
- Total route length of less than 750 miles
- Financially supported by the state

Amtrak has partnered with states to provide intercity passenger rail corridor service since its start in the early 1970s. The 1970 Rail Passenger Services Act created the framework for individual states to request additional rail services in addition to Amtrak's long-distance service. Cost share arrangements for these services varies among the states and corridors.

The state-supported intercity passenger rail corridor service operations are an integral element of Amtrak's national intercity passenger rail network. These 750-mile or less routes generally operate in corridors within a single state or connect two states and serve intermediate-distance trips. State-supported corridor routes provide a valuable alternative to air or auto travel. Amtrak's statutory right of access over the freight railroads allows states to receive these services at relatively low cost compared to not partnering with Amtrak.

Section 209 of the Passenger Rail Investment and Improvement Act of 2008 (PRIIA) directed the states and Amtrak to develop and implement a standardized methodology for operating and

capital costs between the states and Amtrak for trains that operate on corridors of 750 miles or less.[1] The state-supported cost sharing policy at that time could result in states paying up to 85 percent of the operating costs for new corridor service, divided between state funds and ticket revenues. The Surface Transportation Board adopted a new cost sharing policy for state supported routes resulting from this effort in 2012.[2] The newest federal transportation reauthorization law signed into law in late 2021 significantly revised the federal state partnership grant program (Section 22307) and includes a provision to develop a new cost sharing methodology to be presented to Congress in 2023. Elements of the law indicate the new cost share and changes to FRA grant funding programs will enable additional state supported services to be implemented.[3]

Amtrak partners with 20 states and special entities known as Joint Powers Authorities[4] to provide state-supported passenger rail service, including Wisconsin. Amtrak's responsibilities include providing rolling stock, on-board operating crews, station staff, management and administrative support, maintenance of equipment, maintenance of way (tracks and signals) on Amtrak-owned tracks, marketing and advertising, reservation sales, and ticketing.

The Amtrak Hiawatha route from Milwaukee to Chicago is Wisconsin's only corridor service in operation, and the only state supported service as of early 2022. However, the Twin Cities-Milwaukee-Chicago (TCMC) Intercity Passenger Rail project described later in this chapter will be the second state supported route when full service begins in 2024.

WisDOT's Intercity Passenger Rail Program

WisDOT's passenger rail program focuses on intercity passenger rail corridor service. WisDOT remains committed to developing an intercity passenger rail system that links urban and rural communities in Wisconsin to the Midwest region's major economic centers. The system will provide connections within Wisconsin and to cities throughout the Midwest with other transportation modes, provide enhanced mobility and to help grow the state's economy.

WisDOT's efforts and technical assistance continue to focus on:

---

[1] *Public Law No. 110-432, Division B, enacted October 16, 2008*

[2] *03/15/2012 - Decision - 42257 (stb.gov)*

[3] *See Chapter 12 Detail of Programs to Implement the Plan and Chapter 13 Financial Plan Overview for information on grant programs that fund state supported service*

[4] *Joint Powers Authorities are special legal entities typically formed by multiple state, regional, or local governments joining together to create an authority to oversee rail passenger service in their area. Responsibilities and powers vary among Joint Powers Authorities.*

- Budgeting state funding costs for operations and equipment
- Seeking federal grants to conduct studies, making incremental rail infrastructure improvements, implementing service improvements, and implementing new service extensions
- Implementing improved intercity passenger rail service extensions in existing corridors
- Studying and implementing intercity passenger rail service along corridors connected to existing service based on ridership and financial analysis.
- Addressing limitations of existing intercity passenger rail service in meeting transportation needs
- Focusing on safety on shared-use passenger and freight rail corridors and coordinating with freight rail operations
- Coordinating with other state DOTs in planning and implementing new intercity passenger rail services
- Participating in and providing technical assistance to rail service studies conducted by MPOs or local governments
- Addressing intercity passenger rail equipment needs for upgrading or replacing passenger cars or expanding capacity by acquiring additional cars
- Addressing existing intercity passenger rail stations needs
- Supporting intermodal connectivity
- Optimizing operational speed of new intercity passenger rail services
- Supporting governance options for regional intercity passenger rail systems

Existing Intercity Passenger Rail Corridor Service – Amtrak's Hiawatha Service

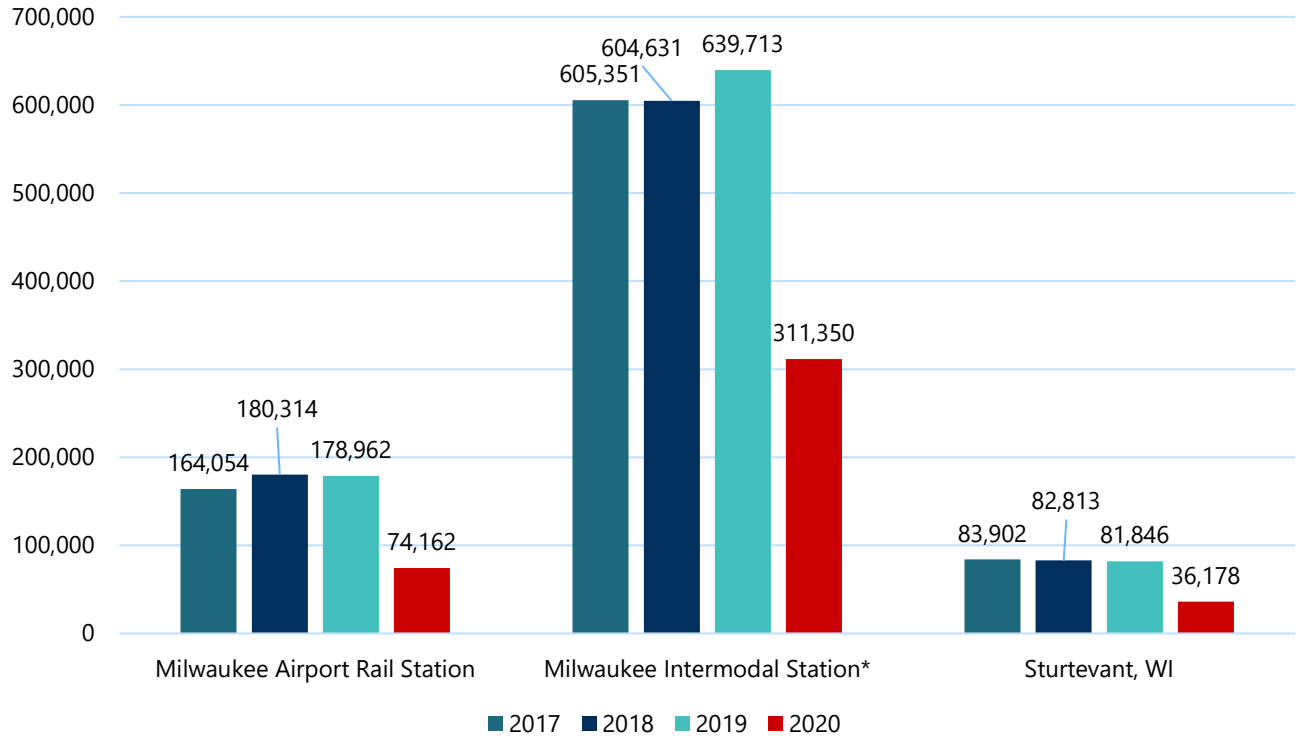
Amtrak's Hiawatha route is Wisconsin's only state-supported intercity passenger rail corridor service in operation as of early 2022. The 86-mile-long Hiawatha route connects Milwaukee and Chicago via Canadian Pacific and the Metra Milwaukee District North tracks. The Hiawatha serves the following station stops:

- **Downtown Milwaukee's Intermodal Station** with connections to five intercity bus providers, Amtrak's Empire Builder long-distance route, the Milwaukee streetcar, and nine Milwaukee County Transit Service bus routes within four blocks
- **Milwaukee Airport Rail Station** located on the grounds of General Mitchell International Airport which also is serviced by two intercity bus routes and four Milwaukee County Transit System bus routes
- **Sturtevant Station** located in the Racine urban area, a Racine Belle Urban system bus route services the station
- **Glenview Illinois** (shared stop with Metra)
- **Chicago Union Station** downtown

Current service includes seven daily roundtrips (six on Sunday) between Milwaukee and Chicago, 89-minute travel time between downtown Milwaukee and downtown Chicago, with a maximum train speed of 79 mph. Originally, Hiawatha service began in 1989 when Wisconsin and Illinois jointly funded a two-year demonstration project that added two daily round trips to Amtrak's Milwaukee-Chicago service to evaluate the potential of state-supported intercity passenger rail service. The demonstration proved successful. The two states have jointly funded Amtrak's Hiawatha route ever since. Wisconsin and Illinois have made incremental improvements to the service, such as adding frequencies, building new stations, and improving track infrastructure.

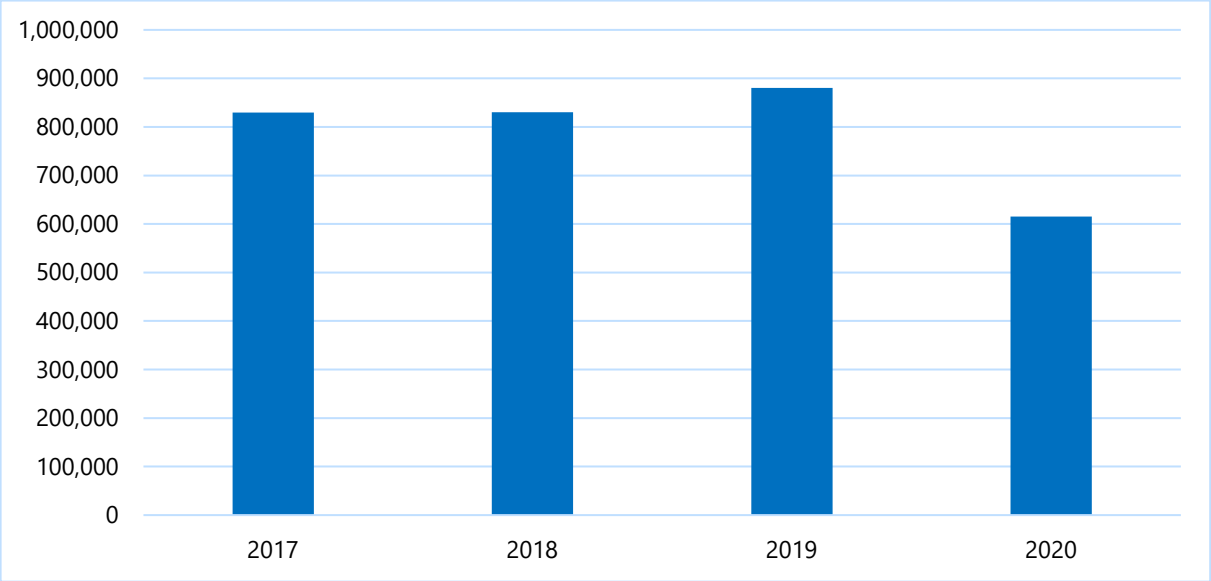
Annual Amtrak Hiawatha Service ridership continued its general pattern of increases from 2015 to 2019 (**Figure 5-1** and **Figure 5-2**). Instances of near and over-capacity have increased, causing standing room only conditions on some trains during peak hours. Hiawatha ridership is expected to continue growing.

Figure 5-1: Wisconsin Stations with Hiawatha Service – Number of Passenger On/Offs [5]



[5] *Milwaukee Intermodal Station includes both Hiawatha Services and Empire Builder on/offs; data compiled from Amtrak's monthly reports submitted to WisDOT. Each passenger is counted once when they get on the train, and then counted again when they get off.*

Figure 5-2: Total Hiawatha Ridership[6]



State fiscal year 2020 saw a significant decrease in annual ridership due to reduced travel from COVID-19, as well as reduced Hiawatha schedules beginning in March 2020. In 2019, ridership was 880,227 for the state fiscal year, which is an increase of 6% compared with 2018, and a record high. The Hiawatha is one of the most successful routes in the Amtrak system and has the highest ridership of any route outside the east and west coasts. Since Amtrak went to e-ticketing with more accurate, real-time rider counts starting in 2014, ridership has increased on average two percent annually.

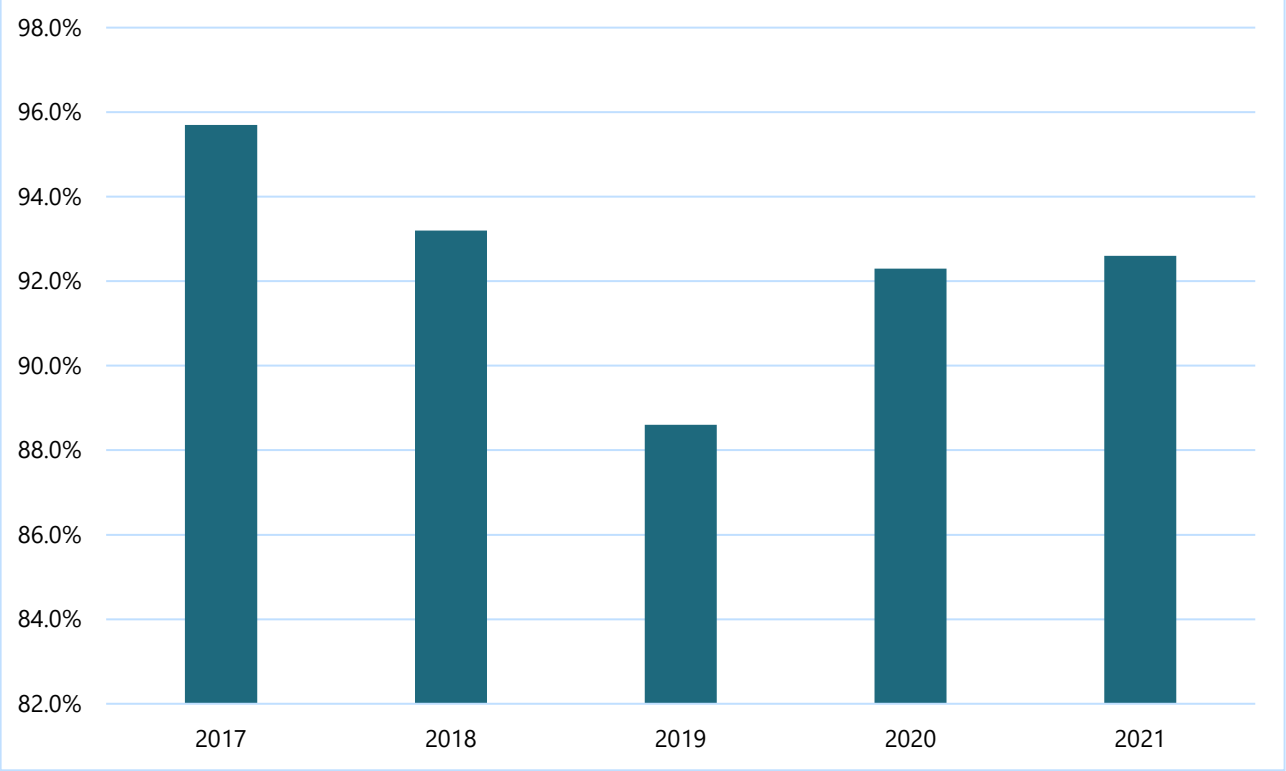
There are several external factors affecting ridership, including COVID-19, the price of gasoline, weather, highway construction on parallel routes, alternative transportation available, on-time performance of host railroads dispatching the Hiawatha Service trains, and the state of the economy. Fare increases also could affect ridership. If an increase is implemented, ridership may slightly decrease initially.

WisDOT regularly reviews performance with Amtrak and IDOT. This includes an in-depth analysis of a range of considerations, including but not limited to ridership, revenue, customer satisfaction, on-time performance, and complaints. WisDOT, IDOT and Amtrak then look for any issues evident from the performance results and propose actions. Adjustments can also be made to the annual contract with Amtrak to address issues. Although ridership numbers are highly

[6] *WisDOT analysis of Amtrak data; Based on state fiscal year which is July 1 to June 30th.*

dependent on outside factors, many of which are beyond Amtrak's and WisDOT's or IDOT's control, WisDOT, IDOT and Amtrak continually look for ways to implement service improvements to increase ridership and revenue. Overall, the Hiawatha has a history of very good on-time performance (**Figure 5-3**).

Figure 5-3: Hiawatha Customer On-Time Performance[7]



Existing Long-Distance Intercity Passenger Rail Service

The national long-distance intercity passenger rail network connects communities across the lower 48 states on routes over 750 miles, and commonly operates at top speeds of at least 79 to 90 miles per hour. Amtrak is the primary operator of long-distance intercity passenger rail services in the U.S. Amtrak's long-distance routes operating costs are exclusively funded through Amtrak's federal appropriation and are not funded by state or local funds. Amtrak long-distance routes offer one daily round-trip or less at any given station along the route. The long-distance trains typically share track with freight and commuter trains, and typically operate on track owned by freight or commuter railroads.

[7] *WisDOT analysis of Amtrak data; Uses customer on-time performance measure.*

WisDOT National Long-Distance Intercity Passenger Rail Related Activities

WisDOT continues to cooperate and coordinate with Amtrak, the FRA, intercity bus providers, and local station owners/operators to support the state's connections with the national long-distance network.

Existing Service – Empire Builder Service

Chicago Union Station is Amtrak's hub for its nationwide long-distance network and its Midwest corridor services. Wisconsinites' access to Union Station is excellent, by service on the Hiawatha, Metra's Kenosha stop, the Empire Builder, intercity bus service, and Thruway bus connections.

Amtrak operates one long-distance train route through Wisconsin, the Empire Builder. The Empire Builder is one of Amtrak's most popular long-distance trains. It provides one daily round-trip between Chicago, Milwaukee, Minneapolis/St. Paul, and Seattle/Portland. Amtrak provides the Empire Builder service as part of its national network, without any state financial support.

Wisconsin Empire Builder stops include:

- Milwaukee Intermodal Station
- Columbus
- Portage
- Wisconsin Dells
- Tomah
- La Crosse

On Time Performance[8]

On time performance for many of Amtrak's long-distance routes is impacted by a number of issues related to routes operating over long distances and over several host freight railroads. In 2020, 14 out of 15 Amtrak long-distance routes were late by Amtrak's on-time standards. The Empire Builder was on-time 66% of the time. The minimum standard set by federal rule is 80% of customers should arrive at their destination within 15 minutes of the scheduled time.

[8] *Freight Delays and Your Amtrak Service | Amtrak*

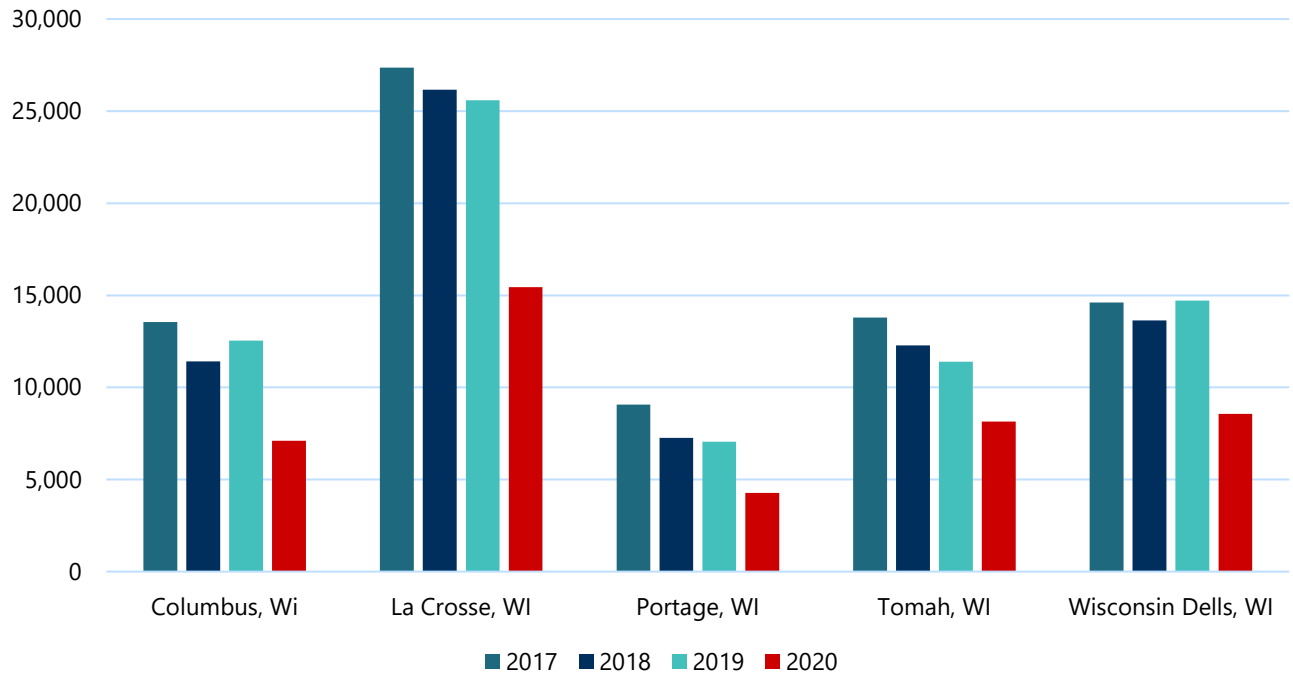
Delays are typically caused by weather, scheduled track maintenance, mechanical issues on trains or with train infrastructure, obstructions on the tracks, and interference from freight train traffic. The leading cause of delay continues to be associated when an Amtrak train, traveling on freight railroad tracks, is delayed by slower freight trains. Federal law requires that passengers be given preference over freight, but performance and record of meeting this law varies.

Ridership

The number of passengers using a station can be measured by station on/offs, or the number of passengers getting on or off a train at that station. From 2017 to 2019, ridership trends varied from station to station. Some stations experienced a decline in ridership over the three-year period, while others experienced an increase (**Figure 5-4**).

Passenger on/offs for 2020 show a drastic decline from the three previous years. In some instances, the number decreased by over half of the 2019 totals. This decrease is likely attributable in part to changes in travel patterns, working from home, and reduced travel on all modes due to the COVID-19 pandemic. Amtrak temporarily reduced the frequency of the Empire Builder service in response.

Figure 5-4: Wisconsin Stations Served by Empire Builder Trains Only – Number of Passenger On/Offs



Asset Line Plans - Amtrak Equipment and infrastructure Needs

The Fixing America's Surface Transportation (FAST Act) established a framework for Amtrak's capital improvement program.[9] Amtrak started producing Asset Line Plans in 2019 to lay out the five-year program for Amtrak's four business lines:

- Equipment: Amtrak-controlled rolling stock, locomotives, and mechanical shop facilities that are used to maintain and overhaul equipment.
- Infrastructure: All Amtrak-controlled Northeast Corridor infrastructure assets and other Amtrak controlled infrastructure, along with the associated facilities that support the operation, maintenance, and improvement of those assets.
- Stations: All passenger rail stations served by Amtrak trains, with a focus on Amtrak controlled stations and elements of other stations for which Amtrak has legal responsibility or where it intends to make capital investments.
- National Assets and Corporate Services (NACS): Cross-cutting assets such as systems for reservations, security, training, training centers, and others associated with Amtrak's national rail passenger transportation system. Corporate Services include company-wide functions such as legal, finance, government affairs, human resources, and information technology.

The Asset Line Plans include discussion of asset line strategies, asset inventories, and a five-year capital plan to show how investments are prioritized to provide safe and reliable services. WisDOT is moving towards state owned train sets for state supported services instead of Amtrak owned. As a result, it is expected these purchases will not appear in future Asset Line Plans.

Existing Thruway Bus Services Linking to Corridor and Passenger Rail Services

Amtrak Thruway bus services are scheduled intercity bus services that connect Amtrak stations with other communities across the state that are not directly served by passenger trains. Thruway bus service connects both to Amtrak's long-distance Empire Builder route as well as corridor routes like Hiawatha.

[9] *Amtrak-Asset-Line-Plans-FY21-25.pdf*

Amtrak designates Thruway routes once interlining agreements are established. Interlining agreements provide for:

- Direct connection from bus to rail or vice versa to complete a trip
- Through-ticketing (one ticket for an entire trip that involves both the rail and the bus connection to the final destination) when bought through Amtrak
- Coordinated scheduling between bus and train arrivals and departures
- Bus schedules included on Amtrak's system schedules
- Online ticketing and trip planners
- Discounted fare categories the same as on Amtrak trains: seniors, students, veterans
- Buses with at-seat electrical plug-ins and Wi-Fi service
- Reservations for bicycles
- Reclining seats with seatbelts, extra legroom, tables and cupholders
- Bus status location tracking through Amtrak.com

Thruway rail/bus connections can be made at the Milwaukee Intermodal Station, Columbus, Portage, Chicago Union Station and St. Paul Amtrak stations. At the time of the previous Wisconsin Rail Plan in 2014, Wisconsin had four Thruway bus connections and nine Thruway bus routes.[10] Thruway bus service in 2022 includes:

- Green Bay - De Pere - Appleton - Oshkosh - Fond du Lac - Milwaukee service operated by Wisconsin Coach Lines/Coach USA
- Duluth, MN (Superior) - Cloquet, MN - Sandstone, MN - St. Paul, MN service operated by Jefferson Lines
- Wausau - Stevens Point - Waupaca - New London - Appleton - Oshkosh - Fond du Lac - Milwaukee service operated by Lamers Bus Company

[10] *Wisconsin Department of Transportation Amtrak passenger rail service (wisconsindot.gov) Thruway Bus service and schedules is available on Amtrak.com . For a complete listing of locations accessible by intercity bus see WisDOT's Get Around Guide Wisconsin Department of Transportation Long distance intercity bus service (wisconsindot.gov)*

- Houghton, MI - L'Anse, MI - Marquette, MI - Escanaba, MI - Powers, MI - Stephenson, MI - Marinette - Oconto - Green Bay - Manitowoc – Sheboygan - Milwaukee service operated by Indian Trails
- Madison - Janesville - South Beloit, IL - Rockford, IL - Chicago, IL service operated by Van Galder/Coach USA
- Madison - Columbus - Fond du Lac - Oshkosh - Appleton - Green Bay service operated by Lamers Bus Company
- Madison - Portage - Stevens Point - Wausau service operated by Lamers Bus Company
- Madison - Milwaukee Intermodal Station service operated by Badger Bus
- Minneapolis/St. Paul, MN - Hudson - Menomonie - Eau Claire - Wausau - Shawano - Green Bay - Manitowoc - Sheboygan - Milwaukee service operated by Wisconsin Coach Lines/Coach USA

Wisconsin's Potential Intercity Passenger Rail Service in 2050

The potential intercity passenger rail system discussed in Wisconsin Rail Plan 2050 incorporate results from various plans and studies. **Figure 5-6** shows the potential intercity passenger rail system for 2050. While the endpoints of the corridors shown in the map have been established, specific route alignments and intermediate station stops will be determined through route alternatives analyses as part of environmental and preliminary engineering studies. Route alignments shown are base routes identified in previous planning efforts.

Implementation of corridor service requires federal and state participation in planning, funding, and operations. An overview of the planning and implementation process for federally funded intercity passenger rail corridor projects is shown in **Figure 5-5**.

Figure 5-5: Overview of Planning and Implementation Process[11]

Statewide and system-level plans

- High-level planning, conceptual routes

↓

Corridor feasibility studies

- Preliminary evaluation of ridership, revenue, operating costs, line capacity, capital costs of proposed routes, and could include a benefit/cost analysis

↓

Service Development Plan

- Rationale (purpose and need)
- Public benefit/public investment assessment
- Service/operating plan
- Capacity study
- Prioritized capital plan
- Implementation plan

↓

NEPA study, environmental clearance, and preliminary engineering

- Environmental documentation resulting in a finding from the FRA
- Preliminary Engineering
- Stakeholder Agreements

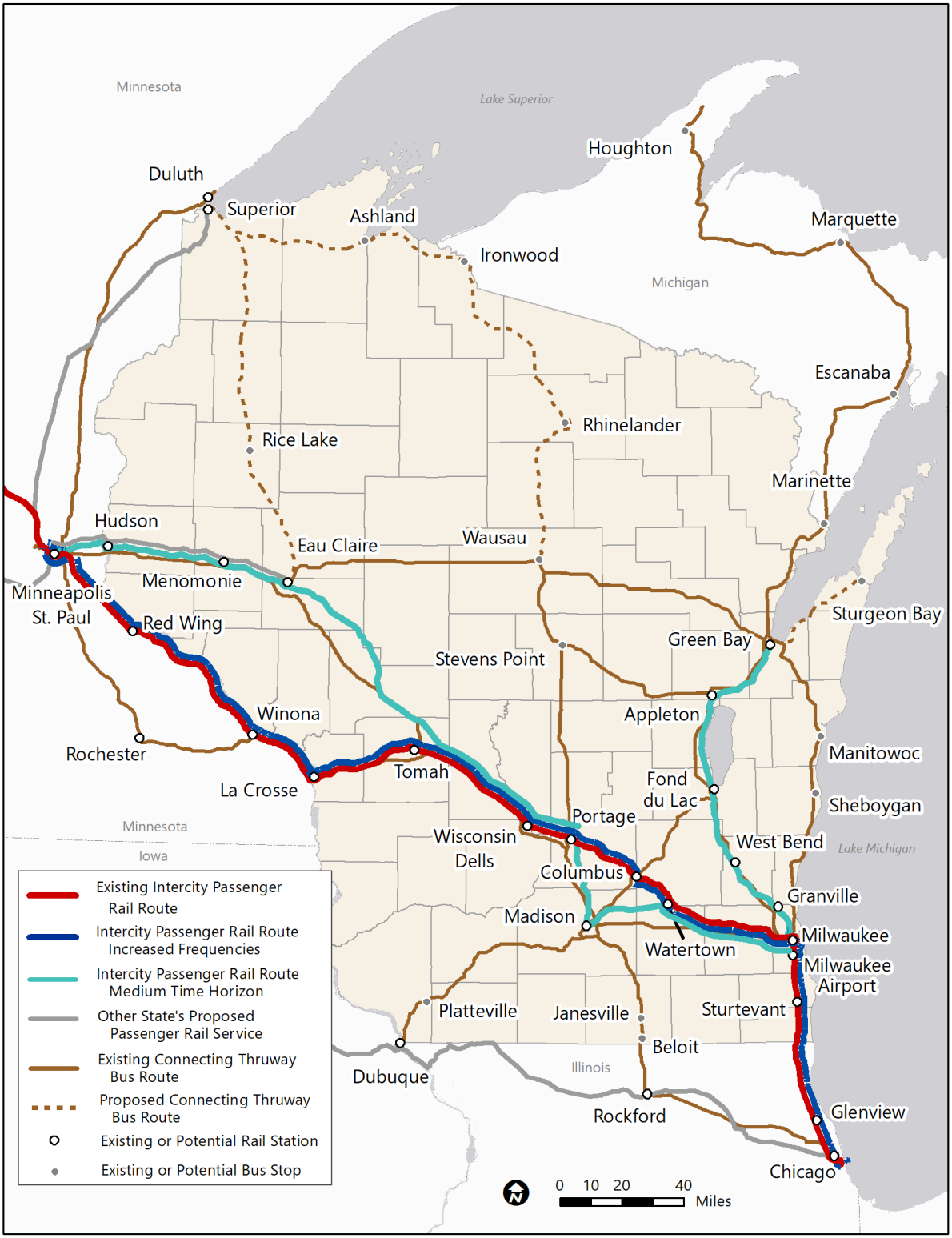
↓

Implementation

- Final Design
- Stakeholder Agreements
- Construction
- Operations

[11] *This flow chart provides an overview of the general steps used in recent corridor planning efforts. The actual processes followed for each corridor project will be in conformance with applicable federal and state laws.*

Figure 5-6: Wisconsin 2050 Potential Intercity Passenger Rail System



A travel demand model forecast was used to forecast future intercity passenger rail demand. This forecast looked at the passenger demand growth due to both demographic increases and service improvements over the near-, mid-, and long-term. The model also considered the impacts of

- Line haul travel time
- Access/egress time
- Travel cost or fare
- Frequency of service

The service tested throughout the travel demand model forecast is representative of service improvements that will be in place at certain points in time. Any changes in the implementation of these service improvements will require revisiting and updating the ridership forecast results. The model results are also not intended to replace detailed corridor- or project-level analyses, which will have more detailed assumptions regarding background conditions and service levels. The model results also do not reflect or reference MPO or state travel demand forecasting efforts.

The future service improvements were developed based on existing rail plans addressing intercity passenger rail and Thruway bus service that could impact Wisconsin, including the following list of projects and plans:

-
- Expanding existing Chicago-Milwaukee Hiawatha service
- Incremental improvements in the Hiawatha service corridor
- New Hiawatha corridor service to Waukesha County, Watertown, and Madison
- New Hiawatha corridor service to Green Bay and the Fox Cities
- FRA's Midwest Regional Rail Plan
- Amtrak ConnectUS plan

Intercity passenger rail service between the urban areas of Eau Claire and the Twin Cities is a separate regionally sponsored effort that was not modeled as part of the travel demand forecast model. Intercity passenger rail service in the Eau Claire – Twin Cities corridor is not included in FRA's Midwest Regional Rail Plan or in Amtrak's ConnectUS plan, which also includes Thruway bus connecting service. Therefore neither intercity passenger rail nor non-Thruway intercity bus service in the corridor is discussed in the following pages. However, advanceable intercity passenger rail and/or Thruway bus service options may be identified through the on-going Eau

Claire – Twin Cities intercity passenger rail project and study. This, or other changes to the assumptions of future service improvements, would involve updating the model.

The passenger demand forecasts were prepared for two near-term years of 2024 and 2026, two mid-term years of 2032 and 2037, and a long-term forecast year of 2050. The forecast years are not intended to represent the years in which the improvements are implemented but are representative of the services that will be in place for each of those years.

Table 5-1 through **Table 5-3** provide an overview of ridership and passenger miles by route, and VMT reduction in total for each forecast year. The tables present the results of pre-service improvements and the results after the service improvements have been implemented which allows for a direct comparison of the service implementation, not including any demographic growth. **Table 5-1** and **Table 5-3** reflect ridership shifts between new and existing service within the same corridor as new service is implemented.

Table 5-1: Total Annual Rail Ridership

	Pre-Service Improvements				Post-Service Improvements				% Change			
	Empire Builder	TCMC	Hiawatha	Total	Empire Builder	TCMC	Hiawatha	Total	Empire Builder	TCMC	Hiawatha	Total
2024	131,850	922,200	-	1,054,050	107,050	779,250	225,750	1,112,050	-18.8%	15.5%	0.0%	5.5%
2026	108,900	794,150	229,400	1,132,450	112,300	908,100	229,000	1,249,400	3.1%	14.3%	-0.2%	10.3%
2032	117,300	931,650	227,600	1,276,550	96,450	918,350	511,000	1,525,800	-17.8%	-1.4%	124.5%	19.5%
2037	99,550	951,350	525,300	1,576,200	92,800	920,050	551,250	1,564,100	-6.8%	-3.3%	4.9%	-0.8%
2050	99,250	991,500	596,850	1,687,600	94,450	1,763,350	1,493,250	3,351,050	-4.8%	77.8%	150.2%	98.6%

Table 5-2: Total Annual Passenger Miles

	Pre-Service Improvements				Post-Service Improvements				% Change			
	Empire Builder	TCMC	Hiawatha	Total	Empire Builder	TCMC	Hiawatha	Total	Empire Builder	TCMC	Hiawatha	Total
2024	33,470,600	75,316,500	-	108,787,100	26,707,300	64,313,100	57,137,700	148,158,100	-20.2%	14.6%	0.0%	36.2%
2026	27,195,900	65,530,100	57,920,600	150,646,600	27,928,500	74,952,300	58,742,400	161,623,200	2.7%	14.4%	1.4%	7.3%
2032	29,161,200	77,177,000	56,970,200	163,308,400	23,995,600	90,822,300	120,599,800	235,417,700	-17.7%	17.7%	111.7%	44.2%
2037	24,778,100	94,101,600	123,605,800	242,485,500	22,960,400	89,887,700	113,037,900	225,886,000	-7.3%	-4.5%	-8.5%	-6.8%
2050	24,548,700	97,123,100	122,427,700	244,099,500	22,758,000	180,316,600	349,812,900	552,887,500	-7.3%	85.7%	185.7%	126.5%

Table 5-3: Annual Vehicle Miles Travelled

	Pre-Service Improvements	Post-Service Improvements	VMT Avoided
2024	29,413.6	29,392.2	21.4
2026	29,830.3	29,821.9	8.4
2032	30,826.5	30,789.7	36.8
2037	31,548.1	31,557.3	(9.2)
2050	33,292.8	33,106.1	186.7

In addition to the rail service, the forecasts also include changes to the Thruway bus network, as shown in **Table 5-4.** In the near-term, additional routes are planned to support the new TCMC service and increased Hiawatha frequencies, while in the mid- and long-term, some Thruway bus routes are replaced by new Hiawatha service. The model forecast identifies four new routes that will be implemented to further support new Hiawatha service and increase the accessibility of the state to the rail network, particularly to the north which does not have existing Thruway bus service. Existing intercity bus service in the Eau Claire – Twin Cities corridor is not included because it is not Thruway bus service.

Table 5-4: Thruway Bus Service by Route Base Year 2019; 2032 Forecast year

	Daily Round-trips per Route			
Bus Route	**Existing (2019)**	**Near-Term (2024)**	**Near-Term (2026)**	**Mid- and Long-Term (2032 and beyond)**
La Crosse-Rochester-Minneapolis	1	1	1	1
Minneapolis-Rochester	1	1	1	1
Minneapolis-Duluth	1	1	1	0
Minneapolis-Wausau-Green Bay - Sheboygan	1	1	1	1
Portage-Wausau	1	1	1	1
Columbus-Fond du Lac-Green Bay	1	1	1	1
Chicago-Madison	7	8	9	0
Milwaukee-Madison	6	7	7	0
Milwaukee-Sheboygan-Green Bay-Wausau-Eau Claire-Menomonie	1	1	1	1
Milwaukee-Sheboygan-Green Bay-Marquette-Hancock	1	1	1	1
Milwaukee-Fond du Lac-Green Bay-Wausau	1	1	1	1
Milwaukee-Fond du Lac-Green Bay	2	2	2	0

Bus Route	Daily Round-trips per Route			
	Existing (2019)	Near-Term (2024)	Near-Term (2026)	Mid- and Long-Term (2032 and beyond)
Tomah-Eau Claire-Menomonie	0	1 / 2	1 / 2	0
Portage-Wausau-Duluth	0	0	0	1
Eau Claire-Duluth	0	0	0	1
Green Bay-Wausau-Duluth	0	0	0	1
Green Bay-Sturgeon Bay	0	0	0	1
Total	**24**	**27 / 28**	**28 / 29**	**12**

Intercity Passenger Rail Corridor Service Planning Studies and Projects – Short term Time Horizon (2022 -2026)

WisDOT continues its long-standing practice of leading corridor initiatives, providing technical assistance and other support to intercity passenger rail corridor rail studies, and planning to identify feasible alternatives. WisDOT has led and received federal grant funds for several corridor initiatives.

A group of projects and studies focus on Hiawatha corridor improvements to be implemented in the short term:

- Twin Cities-Milwaukee-Chicago passenger rail service
- Chicago-Milwaukee Hiawatha service expansion – increase service seven to 10 daily round trips, with incremental increase to eight in 2024
- Incremental improvements in the Hiawatha service corridor
- Muskego Yard Freight Bypass of Milwaukee Intermodal Station (Milwaukee)
- Milwaukee Intermodal Station signals and train control upgrades
- Milwaukee Airport Rail Station second train platform
- Hiawatha next generation equipment acquisition
- Hiawatha sealed corridor
- Continued station improvements along Hiawatha and Twin Cities-Milwaukee-Chicago routes

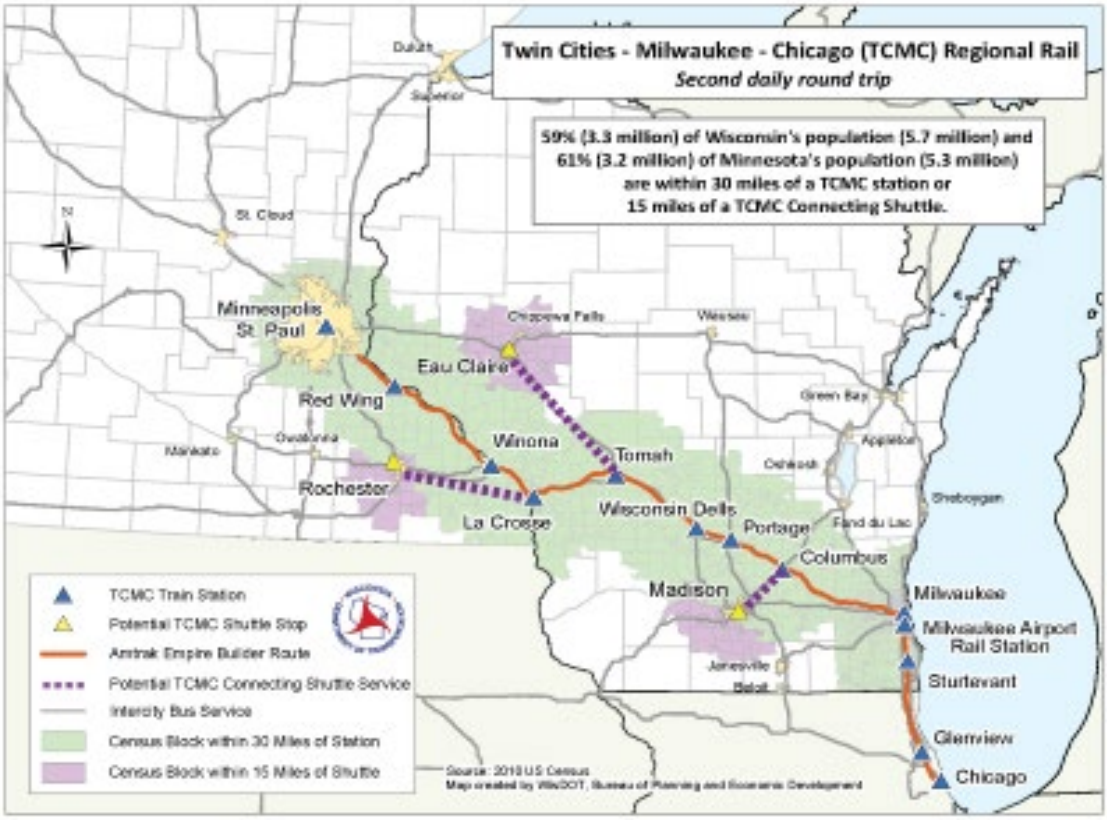
- Continued equipment purchases as part of the Amtrak Midwest states equipment group

New Intercity Passenger Rail Corridor Service in 2024 - Twin Cities Milwaukee Chicago (TCMC)[12]

The TCMC adds a second daily round-trip passenger train on the 411-mile corridor between Chicago and the Twin Cities. The second daily train will be set a few hours apart from the Empire Builder schedule. When full service begins in 2024, the TCMC service will become Wisconsin's second state supported intercity passenger rail corridor service.

TCMC uses existing rail infrastructure, stations, and train equipment. The service will operate at conventional speeds of 79 miles per hour and stop at the following locations: St. Paul, Red Wing, Winona, La Crosse, Tomah, Wisconsin Dells, Portage, Columbus, Milwaukee Intermodal Station, Milwaukee Airport Rail Station, Sturtevant, Glenview, and Chicago Union Station (**Figure 5-7**).

Figure 5-7: Twin Cities Milwaukee Chicago Service Area Map



[12] *WisDOT project website Wisconsin Department of Transportation Twin Cities-Milwaukee-Chicago Intercity Passenger Rail Service (wisconsindot.gov). It is anticipated TCMC service will be rebranded the Great River service.*

Amtrak's Empire Builder route currently only serves the full Twin Cities-Milwaukee-Chicago corridor once daily in each direction. The full Empire Builder route connects Chicago to Seattle/Portland. Wisconsinites use the Empire Builder as a corridor service, with more than 70% of travelers getting on or off at Wisconsin stations travelling to or from stations within the TCMC corridor.

Planning for the TCMC began in 2012 when project partners requested Amtrak to assess the feasibility of providing a state-supported second round-trip intercity passenger train service between the Twin Cities and Chicago Union Station. Amtrak's findings, completed in 2015, showed favorable ridership and revenue projections. Minnesota DOT and Wisconsin DOT led different phases of the extensive planning process that followed.

WisDOT led the service development plan, environmental review, and federal grant applications for final design and construction. The environmental documentation was completed in 2021; the final design is anticipated to be completed in 2023. Construction is scheduled to begin in 2023, with completion in 2024, Full TCMC rail service is estimated to start in 2024, however partial service may begin earlier.

The additional daily round-trip benefits passengers and station communities by:

- Increasing schedule options from the existing one daily round-trip to two daily roundtrips between the Twin Cities, Milwaukee, Chicago, and intermediate stations
- Providing more reliable service with better on-time performance (particularly eastbound), especially important for business and student travel
- Providing more convenient travel times for shorter, regional trips
- Providing morning and midday departures for travelers from St. Paul and Chicago when combined with the Amtrak Empire Builder
- Providing more seating capacity on the corridor relieving pressure during peak periods
- Offering improved connections between other trains, intercity buses, local public transit, and air service
- Bringing in more visitors and workers to station communities
- Enabling communities to leverage the rail service to attract and retain jobs and businesses

Implementation of the TCMC project also results in freight network improvements[13], such as:

- Key railroad improvements associated with the project eliminate bottlenecks that had been impacting passenger and freight trains
- Improved freight rail operations and capacity
- Grade-crossing and capacity improvements improve safety and reduce gate-down times
- More efficient freight operations reduce emissions and take trucks off roads
- Operators and shippers will save an estimated $34.7 million over 30 years by moving freight more efficiently through the TCMC corridor

Three major population centers, several regional centers, and 60% of the population in Minnesota and Wisconsin are located within 15 miles of a proposed connecting bus shuttle stop or 30 miles of a TCMC rail station.[14] The service follows the Empire Builder and Hiawatha routes, which use Metra, Canadian Pacific (CP), and Union Pacific (UP) right of way and tracks.

Railroad infrastructure improvements completed to implement TCMC service include**:**

- La Crosse Yard and Depot Area Improvements (at La Crosse) - Rebuild second mainline track, extend yard lead to the west, and reconstruct passenger platform
- Mississippi River Bridge (at La Crescent) - Realign track approaches, replace switches and trackwork
- River Junction Yard Improvements (at La Crescent) - Conversion of yard track to signalized second main track, including signal improvements, new mainline track, turnouts, and connection track, and an upgrade to existing yard track
- Winona Siding Improvements (at Winona) - Upgrade siding track, switches, and signals
- Tower CK (at Winona) - Construct new siding track connecting main track to CPR Waseca subdivision and add switches and signals

Funding to study, plan, construct, and operate the service came from a variety of state and federal sources. The TCMC received a $31.8 million Consolidated Rail Infrastructure and Safety Improvements (CRISI) Program grant in 2020 that will cover 60% of the project's total capital cost of $53.3 million. Amtrak has committed $5 million in funding. An additional $16.2 million in

---

[13] *TCMC Project Booklet, May 2021, Twin Cities - Milwaukee - Chicago Intercity Passenger Rail (wisconsindot.gov)*

[14] *See Chapter 9 Equity Context for discussion of population characteristics of people living near the corridor.*

approved state match dollars - $6.2 million from Wisconsin, and $10 million from Minnesota - will cover the rest of the capital funding costs.

A $12.6 million FRA Restoration and Enhancement Program grant was awarded to WisDOT in 2020 to offset cost of operations for the first three years. The grant covers up to 80% of operating support needed for year one, 60% for year two, and 40% for year three. As revenue increases over time, shared state partner support decreases. WisDOT is currently researching new BIL guidelines to the Restoration and Enhancement Program which could benefit Wisconsin.

The TCMC project and/or improved service in the Chicago-Milwaukee-Twin Cities corridor are included in the following long-range transportation plans:

- Amtrak's Feasibility Report on Proposed Amtrak Service Chicago-Milwaukee-La Crosse-Twin Cities- (St. Cloud)[15]
- Minnesota State Rail Plan 2015[16]
- Illinois 2017 Illinois State Rail Plan Update (Chicago-Milwaukee increased service)[17]
- La Crosse MPO long range transportation plan, Coulee Vision 2040[18]
- Metropolitan Council Thrive MSP2040[19]
- SEWRPC's Vision 2050[20]
- FRA's Midwest Regional Rail Plan[21]
- Amtrak ConnectUS plan[22]

Chicago-Milwaukee Hiawatha Service Expansion – Increase Service Seven to 10 Daily Round Trips[23]

Hiawatha service is well used by travelers, with increased demand and full trains during heavy travel times. WisDOT has been involved in work to increase train frequencies from seven to 10

[15] *PROJECT HISTORY (state.mn.us)*
[16] https://www.dot.state.mn.us/planning/railplan/
[17] Rail Plan Report_12_28_2017_FULL_Final_FRA.pdf (illinois.gov)
[18] Beyond Coulee Vision 2040 (lacrossecounty.org)
[19] 2018 Update to the 2040 TPP - Metropolitan Council (metrocouncil.org)
[20] 2020UpdateReportFinal.PDF (sewrpc.org)
[21] Midwest Regional Rail Plan - Final report (dot.gov); released jointly by FRA and the Midwest Interstate Passenger Rail Commission
[22] Invest in America. Invest in Amtrak. - Amtrak Connects US
[23] See the project website for more details on this project and its environmental documentation Wisconsin Department of Transportation Chicago - Milwaukee Intercity Passenger Rail Corridor (wisconsindot.gov)

daily round trips. The corridor investment plan is an essential part of the process to implement the increased service.

Corridor Investment Plan

The corridor investment plan is made up of an Environmental Assessment (EA) and a service development plan (SDP). A draft EA and draft SDP were completed in 2016 but require revisions and updates. WisDOT will work with its partners, including Illinois DOT, Amtrak, CP Rail, and Metra, to identify the full program of projects required to increase frequencies to 10 roundtrips daily, update the EA to reflect these projects, and take the next steps towards implementation through preliminary engineering, final design, and construction.

Environmental Assessment (EA)

The purpose of the EA is to provide the Federal Railroad Administration (FRA), WisDOT, IDOT, local governments, and the public with a full understanding of the service-wide environmental impacts associated with the proposed service changes. The EA will be developed in compliance with environmental laws and regulations from the federal government (National Environmental Policy Act), Wisconsin, and Illinois.

Service Development Plan

A Service Development Plan (SDP) is prepared by the project sponsors (in this case, Wisconsin DOT and Illinois DOT) during the planning phase for intercity passenger rail programs. The SDP lays out the overall scope and approach of the proposed service (**Figure 5-8**).

Figure 5-8: Hiawatha Service Development Plan Map



The primary objectives of the SDP are:

- To demonstrate the purpose and need for the proposed intercity passenger rail improvements.
- To describe the analysis of alternatives for the proposed intercity passenger rail improvements.
- To demonstrate the operations and financial feasibility of the proposed intercity passenger rail improvements.
- To identify the specific capital improvements necessary to support the additional frequencies. The environmental impacts of the improvements will be analyzed in the EA.

- Other intercity passenger rail corridor service-related projects/studies – medium term time horizon.

Chicago-Milwaukee corridor improvements are included in the following plans:

- SEWRPC's Vision 2050[24]
- 2017 Illinois State Rail Plan Update[25]
- CMAP Go TO 2040 [26]

Muskego Yard Freight Bypass of Milwaukee Intermodal Station[27]

In 2019, Wisconsin's Department of Transportation received an FRA CRISI grant of $26.6 million for a freight rail bypass through CP Rail's Muskego Yard in Milwaukee, enabling a reduction in freight trains through the Milwaukee Intermodal Station used by Amtrak. The Muskego Yard Freight Rail Bypass Project is an improvement project to update and reconfigure existing rail and yard facilities along the Canadian Pacific Railway (CP) railroad corridor in Milwaukee.

The Muskego Yard Freight Rail Bypass Project is one of the infrastructure projects needed to prepare the corridor for additional roundtrips between Milwaukee and Chicago by Amtrak's Hiawatha service. Final design is planned to commence in 2023, with construction in 2024 and 2025. The project will improve signal, track, and structure upgrades resulting in:

- Improved freight and passenger rail operations by developing a new double-track freight mainline through Muskego Yard, improving yard operations and infrastructure, and separating freight and passenger trains in the area near Milwaukee Intermodal Station
- Improved safety by removing freight traffic through Milwaukee Intermodal Station (MIS)
- Improved safety and fewer delays for car, bus, bicycle, and pedestrian traffic by routing freight rail traffic to grade separated crossings
- Decreased cost by improving travel times for freight trains

[24] *2020UpdateReportFinal.PDF (sewrpc.org)*
[25] *Rail Plan Report_12_28_2017_FULL_Final_FRA.pdf (illinois.gov)*
[26] *The Plan - CMAP (illinois.gov)*
[27] *Wisconsin Department of Transportation Muskego Yard Freight Rail Bypass Project (wisconsindot.gov)*

- Facilitates additional passenger rail trains by freeing up rail capacity through MIS

Milwaukee Intermodal Station Signals and Train Control Upgrades

WisDOT was awarded a grant of $2.7 million for signals and centralized train control for about two miles of track near the Milwaukee Intermodal Station. These improvements will allow trains to operate at higher speeds through the area and facilitate the increased Hiawatha frequencies.

Milwaukee Airport Railroad Station Second Platform

WisDOT received a $5.05 million grant in 2019 to build a second platform at the Milwaukee Airport Railroad Station (MARS). The MARS station is a rail station serving Hiawatha and future TCMC riders, located on the western edge of Milwaukee Mitchell International Airport. The airport terminal and station are connected by a free shuttle bus. The new platform will have elevator towers and an overhead pedestrian bridge connecting to the station over the tracks to allow riders access to the new platform. Work is expected to be completed in 2024.

Hiawatha Next Gen Equipment Acquisition[28]

WisDOT participated in a joint purchase pool of locomotives and passenger rail cars with other Midwestern states.[29] Thirty-three state-owned locomotives are in service on state-supported routes in Wisconsin, Illinois, Michigan, and Missouri. The locomotives have greater fuel efficiency and improved performance than the Amtrak locomotives they replaced and meet EPA Tier 4 emission standards. Eighty-eight new Siemens Venture coach cars will be in service across the four states in 2022. The Venture Cars are next generation single-level equipment that meet modern accessibility standards. Once in revenue service, the 88-car Midwest order will equip the Hiawatha with six coaches, or 50% of the equipment needed for the Hiawatha at this time.

WisDOT is acquiring an additional six Siemens Venture coach cars and three cab cars to fulfill the remaining equipment needed to maintain efficient and cost-effective Hiawatha operations. This additional equipment will go into service in 2024 and 2025.

Hiawatha Sealed Corridor

Engineering studies and projects will begin in the medium term to create a sealed corridor along the Hiawatha service corridor. Developing a sealed corridor may involve enhanced traffic control

[28] *WisDOT Annual Freight Railroad Conference - 2021 Presentation (wisconsindot.gov)*
[29] *The equipment services eight Amtrak midwestern routes serving Wisconsin, Illinois, Indiana, Michigan, and Missouri*

devices, grade crossing improvements to install either median barriers or quad gates at most public crossings, consolidating or closing crossings and grade separated crossings. This will improve safety at rail crossings and facilitate potential future increases of train speeds in the corridor of up to 90 mph.

Continued Station Improvements Along Hiawatha and Twin Cities-Milwaukee-Chicago Routes

Incremental improvements to stations will begin in the near term and continue during all plan time horizons. Station improvements may include improvements in accessibility, multi-modal access to stations, parking, station signage, passenger information systems and other facility related operations.

Intercity Passenger Rail Corridor Projects and Plans – Medium Term Time Horizon (2027- 2037)

Pending evaluation for feasibility:

- Continued station improvements along Hiawatha and Twin Cities-Milwaukee-Chicago routes
- Continued equipment purchases as part of the Amtrak Midwest states equipment group
- New service connecting Chicago, Milwaukee, Waukesha County, Watertown, and Madison
- New service connecting Green Bay and the Fox Cities to Milwaukee and Chicago
- Duluth/Superior – Twin Cities intercity passenger rail service (Northern Lights Express)
- Eau Claire – Twin Cities intercity passenger rail service
- Dubuque Metropolitan Area Transportation Study (Dubuque Iowa MPO) service studies
- FRA's Midwest Regional Rail Plan (full implementation in long term)
- Midwest Regional Rail Plan (Federal Railroad Administration) and future Midwest implementation plan to be completed by the Midwest Interstate Passenger Rail Commission (MIPRC)
- Amtrak ConnectUS plan

New service connecting Chicago, Milwaukee, Waukesha County, Watertown, and Madison

The Madison metropolitan area, Watertown, and Waukesha County are not currently served directly by intercity passenger rail service. Travelers making connections to passenger rail service from Madison use intercity bus service to get to trains in Columbus, Milwaukee, or Chicago. Current providers and community endpoints served include

- Amtrak Thruway bus connection operated by Van Galder/Coach USA from Madison to Chicago's Union Station
- Amtrak Thruway bus connection operated by Van Galder/Coach USA from Madison to the Columbus Amtrak station
- Amtrak Thruway bus connection operated by Badger Bus from Madison to Milwaukee Intermodal Station

Studies or projects to implement passenger rail service connecting Madison, Watertown, and Waukesha County to Milwaukee, Chicago, and/or Minneapolis/St. Paul have been included in state and regional plans for over three decades. The majority of these plans show the connection to these communities on CP Rail track to Watertown, and on track owned by the Wisconsin River Rail Transit Commission (operated by Wisconsin and Southern) to Madison.

WisDOT continues to support the study and possible implementation of this service. WisDOT's efforts to implement more frequent Hiawatha daily round trips from seven to 10 is part of this support. Higher frequencies could allow new Hiawatha trips to provide service to these locations without negatively impacting existing service on the Milwaukee to Chicago corridor. Most recently, support for this corridor has been included in the following long-range transportation plans:

- Greater Madison MPO Regional Transportation Plan 2050[30]
- FRA Midwest Regional Rail Plan[31]
- Midwest Regional Rail Initiative[32]

[30] *RTP_2050_Chapter_5_Needs_Analysis_FINAL.pdf (greatermadisonmpo.org)*
[31] *FRA Midwest Regional Rail Plan (midwestrailplan.org)*
[32] *2004 Midwest Regional Rail Initiative Project Notebook https://miprc.org/Portals/0/pdfs/MWRRI_Project-Notebook-Final-2004_red.pdf?ver=2019-06-11-110003-757*

- Amtrak ConnectUS[33]
- SEWRPC's Vision 2050 [34]

There are differences between some of these plans in how this corridor may be implemented. These differences will be addressed at the corridor planning level.

New service connecting Green Bay and the Fox Cities to Milwaukee and Chicago

The Green Bay area does not currently have intercity passenger rail service. Its closest connection to service is via Amtrak Thruway bus service to Milwaukee. Amtrak and WisDOT worked together to begin operation of Thruway intercity bus service between Green Bay, the Fox Valley, Milwaukee Intermodal Station, and Milwaukee Mitchell International Airport in 2019. This bus service effectively extends the accessibility to Chicago provided by the Amtrak Hiawatha Service to Fond du Lac, Oshkosh, Appleton, and Green Bay by interlining bus and rail service.

WisDOT continues to support the study and possible implementation of this service. WisDOT's actions related to implementing more frequent Hiawatha daily round trips from seven to 10 is part of this support. Higher frequencies could allow new Hiawatha trips to provide service to these locations without negatively impacting existing service on the Milwaukee to Chicago corridor. Support for this service is included in the following long-range transportation plans:

- Green Bay Metropolitan Planning Organization (MPO) 2045 Long-Range Transportation Plan Update [35]
- FRA Midwest Regional Rail Plan[36]
- Midwest Regional Rail Initiative[37]
- Amtrak ConnectUS[38]
- SEWRPC Vision 2050[39]

---

[33] *Invest in America. Invest in Amtrak. - Amtrak Connects US*
[34] *in reference to the TCMC corridor service) 2020UpdateReportFinal.PDF (sewrpc.org)*
[35] *Final LRTP document.pdf (brown.wi.us) pg. 80*
[36] *FRA Midwest Regional Rail Plan (midwestrailplan.org)*
[37] *2004 Midwest Regional Rail Initiative Project Notebook https://miprc.org/Portals/0/pdfs/MWRRI_Project-Notebook-Final-2004_red.pdf?ver=2019-06-11-110003-757*
[38] *Invest in America. Invest in Amtrak. - Amtrak Connects US*
[39] 020UpdateReportFinal.PDF (sewrpc.org)

- Fox Cities MPO plans[40]
- Amtrak's ConnectUS plan[41]
- FRA Midwest Regional Rail Plan[42]
- Midwest Regional Rail Initiative[43]

There are differences between some of these plans in how this corridor may be implemented. These differences will be addressed at the corridor planning level.

Eau Claire-Twin Cities

Connecting the Eau Claire area to the intercity passenger rail network has been discussed for many years. WisDOT continues to support local stakeholders in the evaluation of options to connect Eau Claire and West Central Wisconsin with the Twin Cities, as well as Milwaukee and Chicago.

Local efforts continue to focus on establishing passenger rail service from Eau Claire to the St. Paul Amtrak station about 82 miles away. This would connect the Eau Claire area to Amtrak's national service on the Empire Builder and to the TCMC corridor service when operational. There has also been strong support locally for passenger rail service to Milwaukee and Chicago.

The West Central Wisconsin Rail Coalition[44] (WCWRC) was formed in 1999 by a group of businesses and governments to promote establishing passenger rail service to Eau Claire. The proposed service being studied is four daily round trip service between Eau Claire and St. Paul Union Depot to be provided by a public-private entity.

In 2019, the Chippewa-St. Croix Rail Commission was formed to advance implementation of passenger rail service to the West Central Wisconsin area, including the Chippewa Valley and St. Croix Valley. The coalition includes the counties of Chippewa, Dunn, Eau Claire, Pierce, and St. Croix; and the municipalities of Altoona, Baldwin, Chippewa Falls, Eau Claire, Hudson, Menomonie, New Richmond, and River Falls. Activities the commission are involved in include:[45]

---

[40] Long Range Transportation Planning | ECWRPC
[41] Invest in America. Invest in Amtrak. | Amtrak Connects US
[42] Regional Rail Planning | FRA (dot.gov)
[43] 2004 exec summary Midwest Regional Rail System (miprc.org)); 2004 Midwest Regional Rail Initiative Project Notebook https://miprc.org/Portals/0/pdfs/MWRRI_Project-Notebook-Final-2004_red.pdf?ver=2019-06-11-110003-757
[44] What We Do — West Central Wisconsin Rail Coalition (westwisconsinrail.org)
[45] tmp_40189_1-5-2021_32755_.pdf

- Identifying public benefits of passenger rail service in the region
- Identifying, supporting, and facilitating initiatives to implement passenger rail service
- Determining and coordinating zoning, environmental, safety, and other regulatory related requirements

Consideration of passenger train service in this corridor is included in the following long-range transportation plans:

- Minnesota State Rail Plan 2015[46]
- Eau Claire MPO Long Range Transportation Plan 2020 - 2045 [47]

There are differences between these plans in how this corridor may be implemented. These differences would be resolved at the corridor planning level.

Duluth/Superior–Twin Cities (Northern Lights Express)[48]

The Northern Lights Express (NLX) is a passenger rail project that would provide service between Minneapolis, Coon Rapids-Foley, Cambridge, Hinckley, Superior, and Duluth. The NLX proposes four daily intercity passenger rail roundtrips at speeds up to 90 MPH.

The Federal Railroad Administration issued a Finding of No Significant Impact (FONSI) on the Tier 2 Project Level Environmental Assessment in 2018. FRA's issuance of the FONSI means that the NLX Project will not have significant negative environmental impacts. Preliminary Engineering has also been completed.

Next steps after construction and operational funds are secured is final design and construction, with service beginning three years after construction begins. Consideration of passenger train service in this corridor is included in the following long-range transportation plans:

- Met Council 2040 Transportation Plan[49]
- Metropolitan Interstate Commissions Sustainable Choices 2045 (Duluth-Superior MPO)[50]

---

[46] https://www.dot.state.mn.us/planning/railplan/
[47] *West Central Wisconsin Regional Planning Commission - Chippewa - Eau Claire MPO (wcwrpc.org)*
[48] *Northern Lights Express Passenger Rail Service (state.mn.us)*
[49] *2018 Update to the 2040 TPP - Metropolitan Council (metrocouncil.org)*
[50] *Sustainable-Choices-2045-Chapters1-8_FINAL-compressed.pdf (dsmic.org)*

- Minnesota State Rail Plan 2015[51]
- FRA Midwest Regional Rail Plan[52]
- Amtrak's ConnectUS plan[53]
- Midwest Regional Rail Plan[54]

Dubuque Metropolitan Area Transportation Study (Dubuque, Iowa MPO)[55]

The Dubuque MPO (DMATS) area is located along the Mississippi River with a small portion of its boundary extending into Wisconsin. Passenger rail service in this MPO area would be accessible to Wisconsin residents in the rural southwest part of the state.

DMATS has worked for many years to establish an Amtrak passenger rail route between Dubuque and Chicago. In 2006, IDOT sent a request to Amtrak for a feasibility study for service between Chicago, Rockford, Galena, and Dubuque. The resulting report, published in 2007, identified one feasible route between Dubuque and Rockford, and four feasible routes between Rockford and Chicago. The report was updated in 2010, reducing the routes under consideration to two.

In 2014, following unsuccessful negotiations with CN, Illinois announced a $233 million plan to extend Amtrak service to Rockford along lines owned by Metra and the Union Pacific Railroad. Improvements included upgrading tracks, capacity improvements, bridge improvements, and new stations. The plan included a future service extension to Dubuque with stops in Freeport and Galena. However, in 2015 Illinois placed the project on hold due to lack of funding. It has not advanced for implementation.

DMATS is in the process of updating its Long-Range Transportation Plan 2045 to extend to the 2050-time horizon. A passenger rail project for the Rockford-Dubuque corridor is included in the Long-Range Transportation Plan 2045 project prioritization list without any cost estimates or timelines.[56]

---

[51] *https://www.dot.state.mn.us/planning/railplan/*
[52] *FRA Midwest Regional Rail Plan (midwestrailplan.org)*
[53] *Invest in America. Invest in Amtrak. - Amtrak Connects US*
[54] *ttps://www.midwestrailplan.org/*
[55] *DMATSLRTPFinalAmended1-12-17.pdf (eciatrans.org)*
[56] *DMATSLRTPFinalAmended1-12-17.pdf (eciatrans.org) Figure 9.1 Project Prioritization Results*

DMATS Rockford – Dubuque High Speed Intercity Passenger Rail Feasibility Study

The goal of the study is to re-establish passenger rail services from Chicago to Dubuque. The proposed service would be a part of the Chicago–Dubuque passenger rail corridor, which is one part of the vision set up by the Midwest Regional Rail Initiative to expand existing and develop new regional passenger rail service. This service could be considered intercity or commuter rail depending on the outcome of the study.[57]

FRA's Midwest Regional Rail Plan[58]

FRA completed a Preliminary National Rail Plan in 2009 as a precursor to the development of a long-range National Rail Plan. The Preliminary Plan's goals include improving safety, fostering livable communities, increasing the economic competitiveness, and promoting sustainable transportation. [59]

FRA has shifted its focus away from national rail planning to regional rail plans. FRA's Midwest Regional Rail Plan is one of four Regional Rail Plans completed.

A regional rail plan serves several purposes:

- Identifies a long-term vision for regional passenger rail service and the required infrastructure network
- Develops projections of future travel demand
- Creates an outline of how to rail fits into and integrated transportation system throughout the region in the most cost-effective manner
- Identifies the potential institutional arrangements, financial requirements, and planning and development activities needed to achieve the vision.

FRA's Midwest Regional Rail Plan study explores the potential for a high-performance, multi-state intercity passenger rail network in the Midwest region. The study builds on current rail planning efforts within the twelve states of Illinois, Missouri, Iowa, Michigan, Wisconsin, Ohio, Nebraska, Kansas, South Dakota, North Dakota, Indiana, and Minnesota. WisDOT is an active member of the Stakeholder Planning group working with FRA's project team.

---

[57] *DMATS - Dubuque Metropolitan Area Transportation Study & Regional Planning Affiliation 8 (eciatrans.org)*
[58] *https://www.midwestrailplan.org/*
[59] *National Rail Plan | FRA (dot.gov)*

The Midwest Regional Rail Plan is a strategic plan that provides a framework for investments by state DOTs, Amtrak, and FRA; sets service goals; and identifies opportunities for network integration.

The purpose of the study is to advance Regional Rail Planning for the Midwest by: [60]

- Engaging in long-term visioning process
- Performing conceptual planning of high-performance passenger rail at the regional level
- Supporting National Rail Planning objectives
- Supporting existing statewide and regional processes such as State Rail Plans and other Long-Range Transportation Plans
- Facilitating future planning and streamline implementation

Phase I

The Midwest Regional Rail Planning Study began in 2016. The Phase I effort evaluated potential markets, corridors, ridership, and costs as well as governance and institutional options that will ultimately feed into the Midwest Regional Rail Plan.

Phase II

The second phase of the study started in 2019. Efforts incorporated improvements to the CONNECT passenger sketch planning tool which serves as the analytical foundation of FRA-led regional passenger rail planning studies. The CONNECT tool outputs are used to:

- Describe potential high-performance rail (HPR) network
- Develop high-level service plans
- Generate operational data
- Estimate the financial and operational performance of the network

Midwest Regional Rail Final Report[61]

The Final Report was released in 2021. The Final Report represents a 40-year framework for the Midwest intercity passenger rail network, including a prioritization of corridors and investment

[60] *PowerPoint Presentation (squarespace.com)*

[61] *Midwest Regional Rail Plan - Final report (dot.gov)*

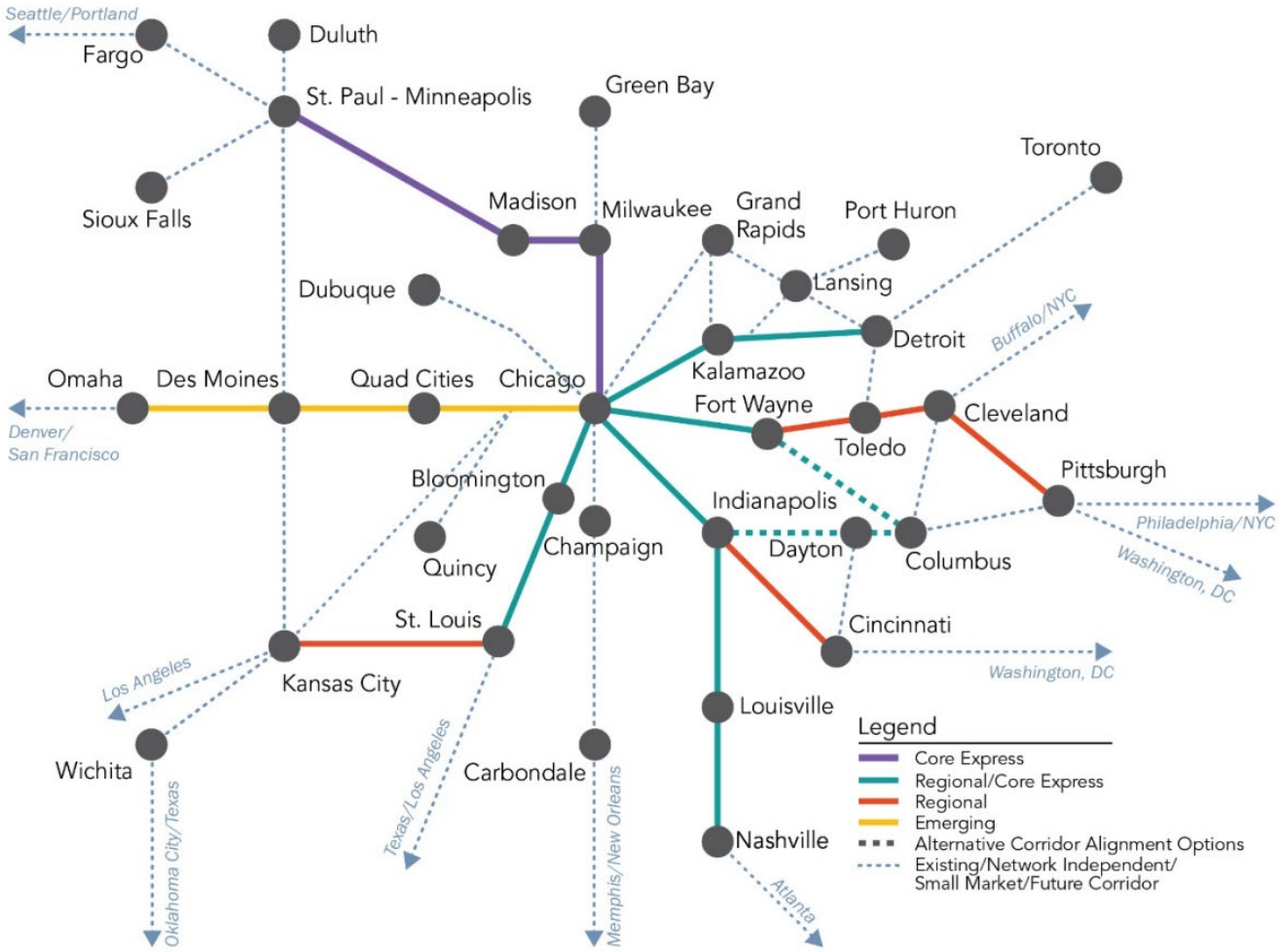
projects, a governance structure, and funding strategy. The Final Report includes detailed data on route performance, network interactions, and potential service levels. It also identified hubs to aggregate service, appropriate service tiers for each corridor, and crucial network interactions. This resulted in recommendations for a full network instead of standalone corridors. The Final Report does not:

- Identify specific routes or alignments for corridors that make up the network
- Identify specific station locations
- Come to conclusions about capacity or operating feasibility
- Represent a commitment to implementing any specific project

Wisconsin corridors examined for passenger rail service in Phase I and II include (**Figure 5-9:**):

- The Empire Builder route on existing track between Chicago, Milwaukee, and the Twin Cities
- Minneapolis/St. Paul-Madison-Milwaukee-Chicago
- Green Bay-Milwaukee- Chicago

Figure 5-9: FRA's Midwest Regional Rail Plan Conceptual Map



The Plan identifies the strongest corridors for prioritized development are those that connect to Chicago. Phased implementation of the network beginning with subsets of the larger plan was identified as a viable first step. Connections between the small- and mid-sized cities and the larger population areas were shown to improve the viability of the four main pillar corridors. Pillar corridors are those whose connections to existing bus, commuter rail, and air service are strong and whose population growth is expected to continue. The pillar corridor that includes Wisconsin is Chicago - Milwaukee – Madison-Minneapolis/St. Paul. The initial service tier recommendation is Core Express, the highest service tier (**Table 5-5**).

Table 5-5: FRA's Midwest Regional Rail Plan Service Tier Attributes

Service Tier	Top Speed	Other Characteristics	Primary Markets Served	Target On-Time Performance	WI Related Corridor
Core Express	Over 125 mph	Frequent service; dedicated tracks, except in terminal areas; electric-powered	Serving major metropolitan center	99%	Chicago-Milwaukee – Madison-Minneapolis/ St. Paul
Regional	90 -125 mph	Frequent service; dedicated and shared tracks; electric- and diesel-powered	Connecting mid-sized urban areas with each other or with larger metropolitan areas	95%	None
Emerging/ Feeder	Up to 90 mph	Tracks shared by passenger and freight trains	Connecting mid-sized and smaller urban areas with each other or with larger metropolitan areas	85%	None

The other recommended service corridors and service tiers include:

- Green Bay – Milwaukee - Chicago: core express between Milwaukee and Chicago, future independent corridor that can contribute to the network but is not a core component of it.
- Twin Cities-Duluth: future independent corridor that can contribute to the network but is not a core component of it.
- Dubuque-Chicago: future independent corridor that can contribute to the network but is not a core component of it.

Midwest Regional Rail Initiative and the Midwest Interstate Passenger Rail Commission

The Midwest Regional Rail Initiative (MWRRI) was a cooperative, multi-agency planning effort that began in 1996 through 2010 involving nine Midwest states (Indiana, Illinois, Iowa, Michigan, Minnesota, Missouri, Nebraska, Ohio, and Wisconsin). An early effort, the Midwest Regional Rail System Plan elements include:

- Use of 3,000 miles of existing rail right of way to connect rural and urban areas

- Operation of a hub and spoke passenger rail system
- Introduction of trains operating at speeds up to 110 mph
- Provision of multi-modal connections to improve system access

The Midwest Regional Rail Initiative plan includes the 435-mile corridor from the Twin Cities to Chicago as well as some short corridor routes connecting Madison, Eau Claire, and Green Bay to the corridor. States have implemented corridor improvements included in the first phases of the Midwest Regional Rail Initiative (MWRRI) plan.

A multi-state compact was created to form the Midwest Interstate Passenger Rail Commission (MIPRC). The MIPRC works towards implementing the Midwest Regional Rail Initiative network, FRA's Midwest Regional Rail Plan, and other passenger rail plans. The MWRRI steering committee last updated the Plan in 2004. The MWRRI steering committee has now shifted focus to working with the FRA on its Midwest Regional Rail Plan. FRA's Midwest Regional Rail builds from the planning and implementation of the MWRRI.

MIPRC has a primary role in advocating for the federal government to develop an enduring collaboration with states for passenger rail development like the partnership it has with states for other modes of transportation. MIPRC also works to ensure that Midwestern states have the support and interstate coordination needed to move forward.

Various segments or corridors in the MWRRI Plan are included in MPO plans, as outlined in this section. Additionally, the Year 2045 Sheboygan Area Transportation Plan includes a commitment to pursuing intercity bus connection to MWRRI service if implemented.[62]

Amtrak ConnectUS[63]

Amtrak's ConnectUS plan outlines Amtrak's potential national intercity passenger rail network. The ConnectUS network would deliver by 2035 more frequent, reliable, and sustainable intercity passenger rail service to over 160 more communities and 20 million more passengers annually than the current system. ConnectUS implementation is dependent upon collaboration with states, local communities, FRA, and many other stakeholders. The Corridor Vision plan builds upon Amtrak's national network, integrating new and improved corridors to expand the existing system.

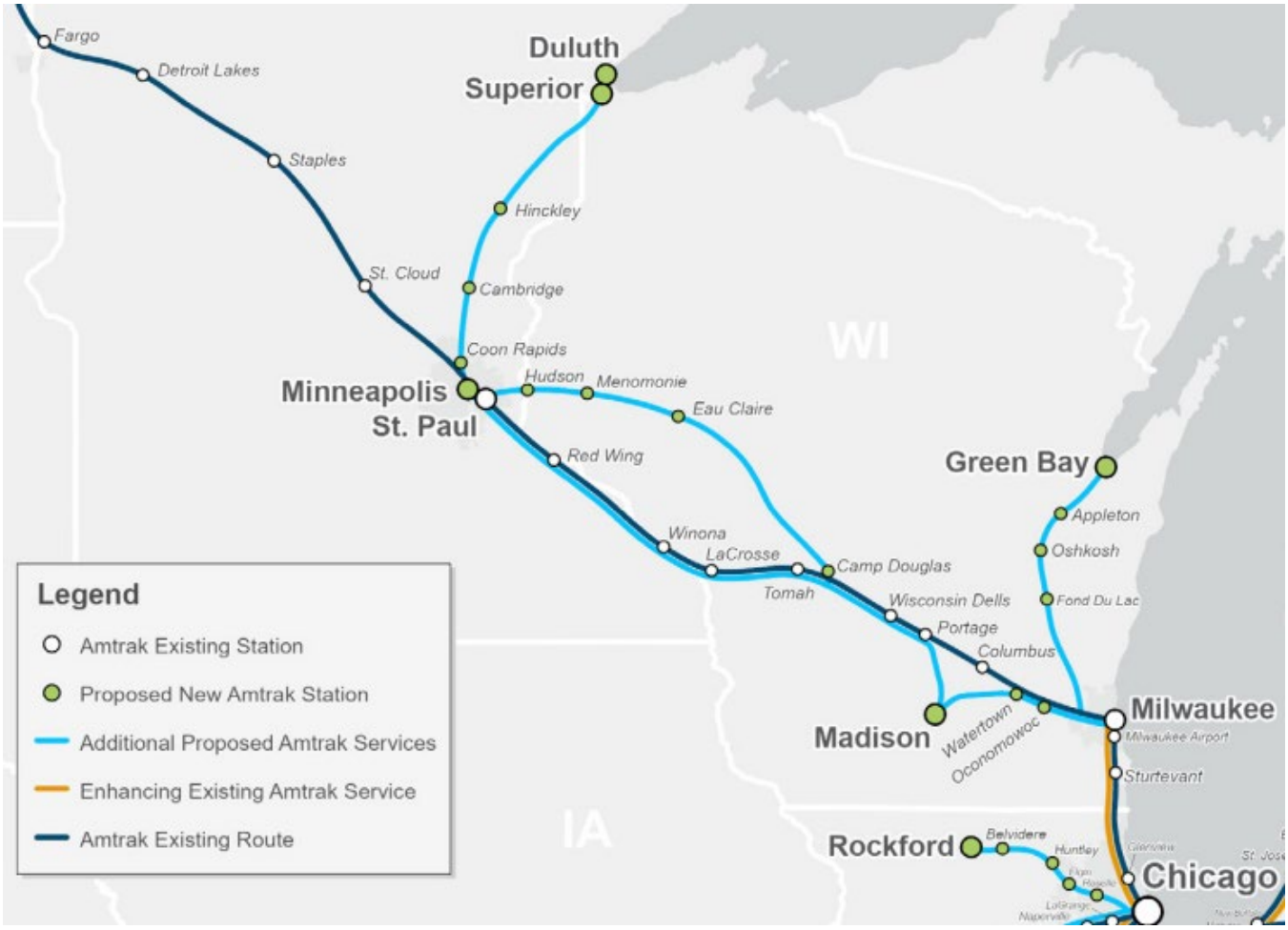
---

[62] *Update to the Year 2045 SATP.pdf - Google Drive*
[63] *Invest in America. Invest in Amtrak. - Amtrak Connects US*

Wisconsin related corridors shown in ConnectUS (**Figure 5-10**):

- Existing Hiawatha Corridor (Milwaukee-Chicago corridor): expand from seven to 10 daily roundtrips
- New Madison Hiawatha Service (Madison – Milwaukee - Chicago corridor); extend four daily Hiawatha trips to Madison
- New Green Bay Hiawatha Service (Green Bay – Milwaukee - Chicago corridor); extend three daily Hiawatha trips to Green Bay
- TCMC (Chicago – Milwaukee - Twin Cities corridor); add three Hiawatha daily round trips to the Twin Cities
- Northern Lights Express (Duluth/Superior – Twin Cities corridor): four round trips between Duluth/Superior – Minneapolis
- Rockford-Chicago corridor: two round trips between Rockford – Chicago

Figure 5-10: Amtrak ConnectUS Service Map



Intercity Passenger Rail Corridor Service Planning Studies and Projects – Long term Time Horizon (2038 - 2050)

- Full implementation of Amtrak ConnectUs and FRA Midwest Regional Plan as study results in mid-term indicate.
- Changes to Thruway Bus routes. Depending on implementation of intercity passenger rail service changes, some Thruway bus routes may become intercity passenger rail service, remain as bus service but increase in frequency to tie in with new intercity passenger rail routes, and may check to reflect increased frequencies of existing intercity passenger rail service.
- West Loop Transportation Center – Chicago Union Station. This project involves reconfiguring Union Station in downtown Chicago to become the hub of a Midwest high-performance rail network, which will also have significant immediate benefits to Metra service and will improve connections between rapid transit, bus, commuter rail, and intercity rail services. Only Phase 1 is included in the fiscally constrained project list of the Chicago Metropolitan Area Planning (CMAP) and may start at an earlier time frame depending on funding.

Chapter 6 Intercity Passenger Rail Stations – Corridor and Long-Distance Service

Combined, the Hiawatha and Empire Builder train routes serve eight Wisconsin stations. This chapter provides:

- Explanation of Station Accessibility Development Plans related to station upkeep and achievement of accessibility for people with disabilities
- Descriptions of each Wisconsin intercity passenger rail station
- Descriptions of the Illinois and Minnesota intercity passenger rail stations most relevant to service through Wisconsin

Amtrak's Station Accessibility Development Plans

Each intercity passenger rail station is required to be accessible to and usable by people with disabilities. The owners and operators of stations, track right of way owners, and passenger train service providers share responsibility for ensuring compliance with applicable federal requirements primarily under:

- Americans with Disabilities Act (ADA) (42 U.S.C 12141-12165)
- ADA implementing regulations (49 C.F.R. Part 37)
- U.S. DOT Standards for Accessible Transportation Facilities (49 C.F.R. Sections 37.9 and 37.43; 49 C.F.R. Part 37 Appendix A)[1]

Under direction from Congress, Amtrak conducted research to identify ownership of basic station elements of all stations under its responsibility to assist in identifying parties responsible for ADA compliance. This was necessary in part because it is common for station elements to be owned or operated by different entities. Basic station elements in the property audits included:

- Parking lots
- Station buildings and interiors (including rest rooms, waiting areas, passenger information equipment, etc.)

[1] *Code of Federal Regulations Title 49 – Part 37—Transportation Services for Individuals with Disabilities (Subpart C: Transportation Facilities); U.S. DOT ADA Standards for Transportation Facilities (2006)*

- Access to station platforms
- Station platforms (including ownership of the track right of way around the platforms)
- Degree, type, and frequency of freight train usage of tracks (to identify how to engineer level boarding platforms)

Amtrak's Accessible Station Development Program (ASDP) began in 2009 to address accessibility issues. The ASDP guides planning, conceptual and detailed design, construction, and ongoing maintenance to deliver physical station improvements. The program is funded through individual Congressional appropriations that may vary from year to year, therefore, the scope of work able to be funded may vary among 5-year plans.

The deficient accessible elements identified in the ADA audits and related property surveys for the stations where Amtrak has sole or shared ADA responsibility were integrated in to the ASDP five-year station strategic plans. Implementation in 2015 of changes in federal rules increased the level boarding platform requirements at commuter and intercity passenger rail platforms. Additional platform work driven by these changes were added to Amtrak's ASDP project lists. A summary of how Amtrak prioritizes ADA improvements nationally is available on Amtrak's website.[2]

Amtrak's efforts identified it as having shared or sole responsibility for accessibility for at least one station element at six out of eight Wisconsin stations.[3] **Table 6-1** shows entities with responsibility for accessibility at Wisconsin stations according to Amtrak's determination:

Table 6-1: Responsibility for Wisconsin Station ADA Elements

Station	Station structures	Platform	Parking
Columbus	Amtrak	Amtrak	Amtrak
La Crosse	Amtrak	Amtrak	Amtrak
Milwaukee Intermodal	WisDOT / Amtrak	WisDOT / Amtrak	WisDOT
Milwaukee Airport	WisDOT	WisDOT	Milwaukee County
Portage	Amtrak	Amtrak	Amtrak
Sturtevant	Village of Sturtevant	Amtrak	Village of Sturtevant

[2] *Stations Asset Line Plan Appendix FY21-26 (amtrak.com)*
[3] *Exhibit 3 Settlement Agreement between the United States and National Passenger Railroad Corporation - Amtrak (ada.gov)*

Station	Station structures	Platform	Parking
Tomah	Amtrak	Amtrak	Amtrak
Wisconsin Dells	City of Wisconsin Dells	Amtrak	Amtrak

WisDOT has partial or full ownership or operating responsibilities at two stations: Milwaukee Intermodal and Milwaukee Airport Rail Station. WisDOT will continue to work with Amtrak to make accessibility improvements for stations under its responsibility.

In response to Amtrak ADA accessibility and access complaints nationally, the U.S. Department of Justice filed a civil rights lawsuit against Amtrak where it has sole or shared responsibility for station accessibility. Amtrak and the U.S. Department of Justice reached a settlement agreement in December 2020.[4]

Amtrak agreed as part of the settlement agreement to use its ASDP to implement the required ADA changes. The ASDP includes a rolling five-year list of projects, updated annually. ADA accessibility updates occurred at several Wisconsin Amtrak stations before the settlement agreement was reached. For example, some ADA improvements at Tomah, Portage and Columbus stations were completed in 2019, and additional improvements are planned by Amtrak in 2022 and 2023.

Station Inventory Listings[5]

The following **Table 6-2**, **Table 6-3**, and **Table 6-4** outline Amtrak's 2020 inventory for each passenger rail station in Wisconsin where it provides service. The information provided for each station includes ownership, ridership, facility, and ADA compliance. Listed in order from south to northwest, Amtrak provided information for the stations in:

- Sturtevant
- Milwaukee Airport Rail Station
- Milwaukee Intermodal Station
- Columbus
- Portage

[4] *Settlement agreement (Dec. 2020): Settlement Agreement between the United States and National Passenger Railroad Corporation - Amtrak (ada.gov)*
[5] *Amtrak Stations in Wisconsin | Amtrak Guide*

- Wisconsin Dells
- Tomah
- La Crosse

Passenger train ons and offs at each station includes numbers for each federal fiscal year from 2018 through 2020 to provide context. The public health response to the global COVID-19 pandemic resulted in dramatically less passenger travel on all modes of transportation, including passenger rail in mid-2019, 2020, 2021 and at least into early 2022. Amtrak and Metra were among the many transportation providers that reduced service or limited capacity in response. See WisDOT's Get Around Guide for the most up to date intercity bus, local transit, and passenger train connection information.[6]

Table 6-2: Details of Wisconsin Intercity Passenger Stations

Sturtevant, WI

Owner:		Facility and Parking Lot: Village of Sturtevant Platform: Canadian Pacific Railway Company
Operator/Management:		Village of Sturtevant
Passenger Rail Services:		Amtrak Hiawatha Service
Train Frequency in 2021:		Hiawatha – 14 trains per day (7 northbound and 7 southbound)
Annual Ridership:	Fiscal Year 2018; 2019; 2020	82,813; 81,846; 36,178 (reduced train frequencies in 2019 and 2020)
Annual Ticket Revenue:		$741,824 (Fiscal Year 2020)
Average daily station on/offs:	Fiscal Year 2018; 2019; 2020	227; 224; 102 (reduced train frequencies in 2019 and 2020)
Parking Spaces:		169, including accessible spaces. 15-minute parking is free. There is a charge for long-term parking.
Facilities, Services, and	Facility:	Enclosed heated waiting room with seating. Two shelters on two 400-foot platforms with benches.

[6] *Wisconsin Department of Transportation Travel by public transit (wisconsindot.gov)*

Passenger Information:		Enclosed pedestrian bridge with elevators to access platforms.
	Services:	Restrooms, vending, and air conditioning
	Passenger Information	Public announcement system operated by train conductors; no electronic passenger information
Attendant:		Caretaker
Ticketing Facility:		None
Checked Baggage:		No
ADA Compliance:	Parking:	10 accessible parking spaces
	Facility:	ADA compliant building and restrooms
	Platform:	ADA compliant platform access. Platforms at 8 inches above top of rail. Trains require a wheelchair lift.
	Information:	Public announcement system allows train conductors to remotely make announcements on station speakers
Year Built:		2006
Intermodal Connections:	Intercity bus/Thruway connections:	None
	Transit connections:	Belle Urban Transit: Serves station seven days per week. More frequent service on weekdays than weekends.
	Bike parking facility:	Bike racks outside station building

Milwaukee Airport Rail Station

Owner:	Facility and Platform: Wisconsin Department of Transportation Parking Lot: Milwaukee County
Operator/Management:	Milwaukee County

Passenger Rail Services:		Amtrak Hiawatha Service
Train Frequency in 2021:		2021:14 trains per day (7 northbound and 7 southbound)
Annual Ridership:	Fiscal Year 2018; 2019; 2020	180,314; 178,962; 74,162 (reduced train frequencies in 2019 and 2020)
Annual Ticket Revenue:		$1,804,194 (Fiscal Year 2020)
Average daily station on/offs:	Fiscal Year 2018; 2019; 2020	494; 490; 203 (reduced train frequencies in 2019 and 2020)
Parking Spaces:		281
Facilities, Services, and Passenger Information:	Facility:	Enclosed heated waiting room with seating. One 400-foot platform with canopy.
	Services:	Restroom and vending machines.
	Passenger Information:	Public announcement system operated by train conductors. Passenger information screens display static train system and dynamic real-time airport flight information.
Attendant:		None
Ticketing Facility:		None
Checked Baggage:		No
ADA Compliance:	Parking:	Accessible parking stalls
	Facility:	ADA compliant building.
	Platform:	ADA compliant platforms at eight inches above top of rail with tactile strip. Trains require a wheelchair lift.
	Information:	Public announcement system allows train conductors to remotely make announcements on station speakers.
Year Built:		2005

Intermodal Connections:	Intercity bus/Thruway connections:	Connections to Badger Coaches and Airport Express/Coach USA at airport terminal (reached via shuttle from station).
	Transit connections:	Connections to Milwaukee County Transit System transit service at airport terminal (reached via shuttle from station).
	Bike parking facility:	Bike Rack

Milwaukee Intermodal Station

Owner:		Facility, Parking Lot, and Platform: Wisconsin Department of Transportation
Operator/Management:		Milwaukee Intermodal Partners
Passenger Rail Services:		Amtrak Empire Builder, Hiawatha Service
Train Frequency in 2021:		Empire Builder: 2 trains per day (1 westbound and 1 eastbound); Hiawatha: 14 trains per day (7 northbound and 7 southbound).
Annual Ridership:	Fiscal Year 2018; 2019; 2020	604,631; 639,713; 311,350 (reduced train frequencies in 2019 and 2020)
Annual Ticket Revenue:		$8,536,034 (Fiscal Year 2020)
Average daily station on/offs:	Fiscal Year 2018; 2019; 2020	1,656; 1,753; 583 (reduced train frequencies in 2019 and 2020)
Parking Spaces:		278 parking stalls
Facilities, Services, and Passenger Information:	Facility:	Full-service station with heated and air-conditioned waiting areas. Three platforms with underground access.
	Services:	Restrooms, ticketing, checked baggage, café, vending machines, and taxi stand.

	Passenger Information:	Electronic passenger information screen displaying daily train schedule.
Attendant:		Yes
Ticketing Facility:		Amtrak ticketing agent
Checked Baggage:		Yes
ADA Compliance:	Parking:	Accessible short-term and long-term parking
	Facility:	ADA compliant restrooms, ticket office, waiting room, drinking fountain.
	Platform:	ADA compliant platforms (8-15 inches above top of rail) Wheelchair lift available.
	Information:	Electronic passenger information available.
Year Built:		Terminal Building: 2007. Train Shed: 1965
Intermodal Connections:	Intercity bus/Thruway connections:	• Badger Bus: Madison, Lake Mills, Waukesha, (Amtrak Thruway) • Greyhound: Chicago, Madison, Wisconsin Dells, Tomah, Eau Claire, Minneapolis/St. Paul • Lamers: Fond du Lac, Oshkosh, Appleton, Stevens Point, Wausau. Amtrak Thruway • Indian Trails: Sheboygan, Manitowoc, Green Bay, Marinette, Upper Peninsula of Michigan. (Amtrak Thruway) • Wisconsin Coach Lines/Coach USA: Kenosha, Racine • Amtrak Thruway/Wisconsin Coach Lines: Fond du Lac, Oshkosh, Appleton, Green Bay.(Amtrak Thruway) • Jefferson Lines: Madison, La Crosse, Winona, MN, Rochester, MN, Minneapolis/St. Paul. Sheboygan, Manitowoc, Green Bay, Wausau, Eau Claire. (Amtrak Thruway) Bus ticketing, information, and waiting area at station.

	Transit connections:	Milwaukee County Transit System - Route 57 directly serves the station every day of the week; additional routes on Wisconsin Avenue 3 blocks away; Milwaukee streetcar the Hop serves the station 2 blocks away.
	Bike parking facility:	Bike lockers and bike rack

Columbus, WI

Owner:		Facility: CMC Heartland Partners Platform: Canadian Pacific Railway Company/Soo Line Railroad
Operator/Management:		Amtrak
Passenger Rail Services:		Amtrak Empire Builder
Train Frequency in 2021:		Empire Builder: 2 trains per day (1 westbound and 1 eastbound)
Annual Ridership:	Fiscal Year 2018; 2019; 2020	11,414; 12,537; 7,103 (reduced train frequencies in 2019 and 2020)
Annual Ticket Revenue:		$700,777 (Fiscal Year 2020)
Average daily station on/offs:	Fiscal Year 2018; 2019; 2020	31; 34; 19 (reduced train frequencies in 2019 and 2020)
Parking Spaces:		22 parking stalls
Facilities, Services, and Passenger Information:	Facility:	Enclosed waiting room with seating. Two platforms below top of rail. No platform canopies.
	Services:	Restrooms
	Passenger Information:	Passenger information posted.
Attendant:		Unstaffed station; station caretaker
Ticketing Facility:		None
Checked Baggage:		Yes

ADA Compliance:	Parking:	1 accessible parking stall
	Facility:	Accessible waiting room, accessible restrooms. Caretaker office window (formerly the ticket window) is not accessible.
	Platform:	Platform below top of rail. Wheelchair lift available.
	Information:	Static passenger information
Year Built:		1906
Intermodal Connections:	Intercity bus/Thruway bus connections:	Van Galder/Coach USA (Green Bay, Appleton, Oshkosh, Fond du Lac, Waupun, Beaver Dam)
	Transit connections:	None
	Bike parking facility:	Onsite

Portage, WI

Owner:		Facility, Parking Lot, and Platform: Canadian Pacific Railway.
Operator/Management:		Amtrak
Passenger Rail Services:		Amtrak Empire Builder
Train Frequency in 2021:		Empire Builder: 2 trains per day (1 westbound and 1 eastbound)
Annual Ridership:	Fiscal Year 2018; 2019; 2020	7,266; 7,061; 4,268 (reduced train frequencies in 2019 and 2020)
Annual Ticket Revenue:		$287,710 (Fiscal Year 2020)
Average daily station on/offs:	Fiscal Year 2018; 2019; 2020	20; 19; 12 (reduced train frequencies in 2019 and 2020)
Parking Spaces:		Limited long-term parking available in the Canadian Pacific Railway (CP Rail) parking lot. CP Rails allows Amtrak long-term customers to use some spaces in

		the CP Rail Portage rail yard and office parking lot if available.
Facilities, Services, and Passenger Information:	Facility:	Enclosed shelter on platform.
	Services:	No restrooms, waiting room, or ticket office
	Passenger Information	No passenger information
Attendant:		Unstaffed Station
Ticketing Facility:		None
Checked Baggage:		No
ADA Compliance:	Parking:	2 accessible parking spaces
	Facility:	No accessible restrooms, ticket office, or waiting room.
	Platform:	ADA compliant platform at eight inches above top of rail with tactile strip. Wheelchair lift available.
	Information:	N/A
Year Built:		1990
Intermodal Connections:	Intercity bus/Thruway bus connections:	Van Galder/Coach USA (Wausau, Wausau-Rothschild, Wisconsin Rapids, Stevens Point, Westfield)
	Transit connections:	Portage shared-ride taxi
	Bike parking facility:	None

Wisconsin Dells, WI

Owner:	Facility: City of Wisconsin Dells Parking Lot and Platform: Canadian Pacific Railway
Operator/Management:	City of Wisconsin Dells
Passenger Rail Services:	Amtrak Empire Builder
Train Frequency in 2021:	Empire Builder: 2 trains per day (1 westbound and 1 eastbound)

Annual Ridership:	Fiscal Year 2018; 2019; 2020	13,631;14,722; 8,559 (reduced train frequencies in 2019 and 2020)
Annual Ticket Revenue:		$476,298 (Fiscal Year 2020)
Average daily station on/offs:	Fiscal Year 2018; 2019; 2020	37; 40; 23 (reduced train frequencies in 2019 and 2020)
Parking Spaces:		Approximately 25 parking spaces adjacent to the station, municipal parking lots nearby. Nine one-hour slots available (paved), long-term spaces are gravel and unmarked.
Facilities, Services, and Passenger Information:	Facility:	Enclosed waiting area. One raised asphalt platform with benches with no canopy.
	Services:	Restrooms
	Passenger Information:	Posted schedule information
Attendant:		Unstaffed Station; station caretaker
Ticketing Facility:		None
Checked Baggage:		No
ADA Compliance:	Parking:	One accessible parking stall located on site; 4 stalls located in nearby municipal lot.
	Facility:	No accessible waiting room, accessible restrooms
	Platform:	Platform below top of rail, wheelchair lift available
	Information:	N/A
Year Built:		1989
Intermodal Connections:	Intercity bus/Thruway bus connections:	Greyhound serves Wisconsin Dells and the stop is about 1 mile from the station
	Transit connections:	None (private taxi available)
	Bike parking facility:	None

Tomah, WI

Owner:		Facility, Parking Lot, and Platform: Canadian Pacific Railway
Operator/Management:		Canadian Pacific Railway
Passenger Rail Services:		Amtrak Empire Builder
Train Frequency in 2021:		Empire Builder: 2 trains per day (1 westbound and 1 eastbound)
Annual Ridership:	Fiscal Year 2018; 2019; 2020	12,278; 11,394; 8,151 (reduced train frequencies in 2019 and 2020)
Annual Ticket Revenue:		$474,156 (Fiscal Year 2020)
Average daily station on/offs:	Fiscal Year 2018; 2019; 2020	34; 31; 22 (reduced train frequencies in 2019 and 2020)
Parking Spaces:		50 parking spaces
Facilities, Services, and Passenger Information:	Facility:	Enclosed waiting area.
	Services:	Restrooms
	Passenger Information:	Posted route information
Attendant:		Unstaffed Station; station caretaker
Ticketing Facility:		None
Checked Baggage:		No
ADA Compliance:	Parking:	2 accessible parking stalls
	Facility:	Accessible waiting area, and accessible bathrooms
	Platform:	Accessible platform, wheelchair lift available
	Information:	N/A
Year Built:		Early 1900's
Intermodal Connections:	Intercity bus/Thruway bus connections:	Greyhound serves Tomah with a stop about 2 miles from the Amtrak station.

	Transit connections:	Tomah shared-ride taxi
	Bike parking facility:	None

La Crosse, WI

Owner:		Facility and parking Lot: La Crosse Depot, LLC Platform: Canadian Pacific Railway
Operator/Management:		La Crosse Depot, LLC
Passenger Rail Services:		Amtrak Empire Builder
Train Frequency in 2021:		Empire Builder: 2 trains per day (1 westbound and 1 eastbound)
Annual Ridership:	Fiscal Year 2018; 2019; 2020	26,157; 25,587; 15,450 (reduced train frequencies in 2019 and 2020)
Annual Ticket Revenue:		$1,025,625 (Fiscal Year 2020)
Average daily station on/offs:	Fiscal Year 2018; 2019; 2020	72; 70; 42 (reduced train frequencies in 2019 and 2020)
Parking Spaces:		50 parking stalls, 20 short-term and 30 long-term. Permit required for long-term parking (free).
Facilities, Services, and Passenger Information:	Facility:	Full-service station with enclosed waiting area. One asphalt platform raised above 8 inches top of rail with tactile strip. Canopy does not cover platform.
	Services:	Restrooms, payphones, ticket sales office, vending machines.
	Passenger Information:	Passenger information available
Attendant:		Fully staffed
Ticketing Facility:		Amtrak Ticket Agent
Checked Baggage:		Yes
	Parking:	Accessible short-term and long-term parking

ADA Compliance:	Facility:	Accessible waiting room, restrooms, and water fountain. Ticket office is not accessible.
	Platform:	Accessible platform. Track side wheelchair lift.
	Information:	No public announcement system, static information available.
Year Built:		1927, renovated in 1998. Station is on the National Register of Historic Places.
Intermodal Connections:	Intercity bus/Thruway bus connections:	Amtrak Connecting Services, operated by Groome Transportation, provides connections to Rochester, MN at the station. Jefferson Lines serves La Crosse at the La Crosse Grand River Station downtown, approximately one mile from the Amtrak station. Coach USA serves Winona, MN; Rochester, MN, Minneapolis/St. Paul, MN, La Crosse, Sparta, Madison, and Milwaukee.
	Transit connections:	La Crosse MTU bus stops 3 and 5 blocks away.
	Bike parking facility:	None

Table 6-3: Details of Illinois Intercity Passenger Stations with Service through Wisconsin

Chicago Union Station

Owner:		Facility, Parking Lot, and Platform: Amtrak
Operator/Management:		Amtrak
Passenger Rail Services (serving Wisconsin):		Amtrak Empire Builder, Hiawatha Service
Train Frequency in 2021:		Empire Builder: 2 trains per day (1 westbound and 1 eastbound); Hiawatha: 14 trains per day (7 northbound and 7 southbound).
Annual Ridership:	Fiscal Year 2018; 2019; 2020	3,388,307; 3,331,513; 1,688,452 - Includes all 16 Amtrak Routes serving the station; reduced train frequencies in 2019 and 2020.
Annual Ticket Revenue:		$105,155,741 (Fiscal Year 2020 – Includes all 16 Amtrak Routes serving the station; reduced train frequencies in 2019 and 2020.
Average daily station on/offs:	Fiscal Year 2018; 2019; 2020	9,283; 9,127; 4,625 - Includes all 16 Amtrak Routes serving the station; reduced train frequencies in 2019 and 2020.
Parking Spaces:		500 short-term, 500 long-term. Parking also available in nearby private lots.
Facilities, Services, and Passenger Information:	Facility:	Full-service station with enclosed waiting room.
	Services:	Amtrak Metropolitan lounge, ATM, elevator, payphones, restrooms, ticket office, vending machines, Amtrak Wi-Fi.
	Passenger Information:	Passenger information and assistance available.
Attendant:		Fully staffed
Ticketing Facility:		Amtrak Ticketing Agent

Checked Baggage:		Yes
ADA Compliance:	Parking:	Accessible station parking is not available.
	Facility:	Accessible waiting room, restrooms, ticket office, and water fountain.
	Platform:	Accessible platform, wheelchair lift available.
	Information:	Passenger information available
Year Built:		1925 with extensive renovations in 1991
Intermodal Connections:	Intercity bus/Thruway bus connections:	• Greyhound (Milwaukee and St. Paul-Minneapolis) • Van Galder/Coach USA: Rockford, IL, South Beloit, IL, Janesville, and Madison. • Megabus: Detroit, MI, St. Louis, MO; Minneapolis/St. Paul, MN; Cleveland, OH; Columbus, OH; Cincinnati, OH; Des Moines, IA; Kansas City, MO; Memphis, TN; Madison; Milwaukee.
	Transit connections:	• Metra commuter rail trains on site • Chicago Transit Authority buses on site • Chicago Transit Authority rapid transit 3 blocks away at Ogilvie Station
	Bike parking facility:	Bike racks

Glenview, IL

Owner:	Facility, Parking Lot, and Platform: Metra
Operator/Management:	Metra
Passenger Rail Services Serving Wisconsin:	Amtrak Empire Builder, Hiawatha Service
Train Frequency in 2021:	Empire Builder: 2 trains per day (1 westbound and 1 eastbound); Hiawatha: 14 trains per day (7 northbound and 7 southbound)

Annual Ridership:	Fiscal Year 2018; 2019; 2020	55,496; 62,347; 31,551 (reduced train frequencies in 2019 and 2020)
Annual Ticket Revenue:		$1,006,609 (Fiscal Year 2020)
Average daily station on/offs:	Fiscal Year 2018; 2019; 2020	152; 171; 86 (reduced train frequencies in 2019 and 2020)
Parking Spaces:		Free parking for Amtrak passengers is available in Metra commuter rail parking lots. Permit required from Amtrak agent.
Facilities, Services, and Passenger Information:	Facility:	Enclosed waiting room
	Services:	Restrooms, payphones, Amtrak Wi-Fi
	Passenger Information:	Passenger information available
Attendant:		Unstaffed Station
Ticketing Facility:		None
Checked Baggage:		No
ADA Compliance:	Parking:	Four accessible parking stalls
	Facility:	Accessible waiting room, restrooms, and water fountain
	Platform:	Accessible platform, wheelchair lift available
	Information:	Passenger information available
Year Built:		1995
Intermodal Connections:	Intercity bus/Thruway bus connections:	None
	Transit connections:	Pace bus service and Metra commuter rail on site
	Bike parking facility:	Covered bike racks

Table 6-4: Details of Minnesota Intercity Passenger Stations with Service through Wisconsin

Winona, MN

Owner:		Facility, Parking Lot, and Platform: Canadian Pacific
Operator/Management:		Amtrak
Passenger Rail Services:		Amtrak Empire Builder
Train Frequency in 2021:		Empire Builder: 2 trains per day (1 westbound and 1 eastbound)
Annual Ridership:	Fiscal Year 2018; 2019; 2020	14,711; 13,199; 8,378 (reduced train frequencies in 2019 and 2020)
Annual Ticket Revenue:		$514,219 (Fiscal Year 2020)
Average daily station on/offs:	Fiscal Year 2018; 2019; 2020	40; 36; 23 (reduced train frequencies in 2019 and 2020)
Parking Spaces:		Approximately 20 parking spaces
Facilities, Services, and Passenger Information:	Facility:	Enclosed waiting area
	Services:	Restroom
	Passenger Information:	Static route information
Attendant:		Unstaffed Station
Ticketing Facility:		None
Checked Baggage:		Yes
ADA Compliance:	Parking:	Accessible parking available
	Facility:	Accessible waiting room, restrooms, and water fountain
	Platform:	Accessible platform, wheelchair lift available
	Information:	N/A
Year Built:		1888

Intermodal Connections:	Intercity bus/Thruway connections:	Shuttle service by Specialty Tours between station and Rochester, MN (reservation required).
	Transit connections:	Winona Transit stop
	Bike parking facility:	None

Red Wing, MN

Owner:		Facility: Red Wing Property Conservation Fund Parking Lot: City of Red Wing Platform: Canadian Pacific Railway
Operator/Management:		Amtrak
Passenger Rail Services:		Amtrak Empire Builder
Train Frequency in 2021:		Empire Builder: 2 trains per day (1 westbound and 1 eastbound)
Annual Ridership:	Fiscal Year 2018; 2019; 2020	8,263; 7,959; 4,695 (reduced train frequencies in 2019 and 2020)
Annual Ticket Revenue:		$354,252 (Fiscal Year 2020)
	Fiscal Year 2018; 2019; 2020	23; 22; 13 (reduced train frequencies in 2019 and 2020)
Parking Spaces:		Approximately 25 parking spaces
Facilities, Services, and Passenger Information:	Facility:	Enclosed waiting area
	Services:	Restrooms
	Passenger Information:	Static route information
Attendant:		Unstaffed Station
Ticketing Facility:		None
Checked Baggage:		No
	Parking:	Accessible parking stalls

ADA Compliance:	Facility:	Accessible restrooms, waiting room, water fountain
	Platform:	Accessible platform, wheelchair lift available
	Information:	N/A
Year Built:		1905
Intermodal Connections:	Intercity bus/Thruway bus connections:	None
	Transit connections:	Red Wing RIDE Transit, Hiawathaland Transit
	Bike parking facility:	None

St. Paul/Minneapolis, MN (Union Depot)

Owner:		Facility, Parking Lot, and Platform: Ramsey County Regional Railroad Authority
Operator/Management:		Amtrak
Passenger Rail Services Serving Wisconsin:		Amtrak Empire Builder
Train Frequency in 2021:		Empire Builder: 2 trains per day (1 westbound and 1 eastbound)
Annual Ridership:	Fiscal Year 2018; 2019; 2020	85,627; 90,961; 48,359 (reduced train frequencies in 2019 and 2020)
Annual Ticket Revenue:		$4,830,875 (Fiscal Year 2020)
Average daily station on/offs:	Fiscal Year 2018; 2019; 2020	235; 249; 132 (reduced train frequencies in 2019 and 2020)
Parking Spaces:		Four parking lots available for short-term and long-term parking. Long-term parking is available.
Facilities, Services, and Passenger Information:	Facility:	Full-service station with enclosed waiting area and Empire Builder Lounge.
	Services:	Restrooms, ATM, Elevator, payphones, ticket sales office, and vending machines

	Passenger Information:	Passenger information and assistance available
Attendant:		Fully staffed
Ticketing Facility:		Amtrak Ticket Agent
Checked Baggage:		Yes
ADA Compliance:	Parking:	Accessible parking available
	Facility:	Accessible waiting room, restrooms, ticket office, and water fountain
	Platform:	Accessible platform, wheelchair lift available
	Information:	Passenger information available
Year Built:		1926
Intermodal Connections:	Intercity bus/Thruway bus connections:	• Jefferson Lines (Duluth) • Jefferson Lines (Sheboygan, Manitowoc, Green Bay, Shawano, Wittenberg, Wausau, Abbotsford, Stanley, Chippewa Falls, Eau Claire, Menomonie) • Greyhound • Megabus to Madison, Milwaukee, and Chicago
	Transit connections:	Metro Transit – Daily Service on 4 routes; weekday only service on buses 3 additional routes; Green Line light rail. Minnesota Valley Transit Authority (MVTA) – weekday service on 3 routes. Rental Car Station – Hertz
	Bike parking facility:	Bike parking, repair stations, and bike storage available.

Chapter 7 Rail Safety and Security

Rail related injuries and fatalities have decreased dramatically in the last 50 years thanks to crossing safety infrastructure, improvements to train equipment, and other measures. However, there still are improvements to be made in rail safety. For example, in 2019:

- Every three hours a person or vehicle is hit by a train in the United States
- Drivers were 40 times as likely to die in a crash with a train as in other motor vehicle crashes
- Four people were killed, and nine people were injured in 48 railroad crossing crashes in Wisconsin
- Four people died and two people were injured while trespassing on railroad tracks in Wisconsin

Rail safety and security involves measures using education, enforcement, and engineering.

Stakeholder Roles and Responsibilities for Rail Safety and Security

WisDOT along with stakeholders and partner agencies share responsibility for addressing rail safety and security. Coordination and communication are very important in ensuring issues are addressed quickly and efficiently.

The following is a summary of key stakeholders with involvement in rail safety or security issues.

FRA is responsible for promoting the safety of the nation's passenger and freight railroad system. FRA fulfills this responsibility by developing programs that identify, monitor, and address railroad safety issues; and by promulgating and enforcing regulations that prescribe minimum safety standards.

Railroads are required by federal law to report accidents and incidents to FRA. FRA uses this information to identify trends of railroad safety and to develop hazard elimination and risk reduction programs that focus on preventing injuries and accidents.

FRA collects and analyzes the data from the railroads and converts this information into tables, charts, and reports that are shared publicly on the FRA Office of Safety Analysis website.[1] The types of data reported to FRA include:

[1] *FRA Safety Data & Reporting | FRA (dot.gov)*

- Highway-rail grade crossing accidents/incidents
- Rail equipment accidents/incidents
- Injuries and deaths
- Crossing inventories
- Trespassing incidents

Railroads are required to provide FRA with immediate notification of various types of serious accidents. FRA along with the Surface Transportation Board investigates serious accidents and incidents involving railroads or crossings.[2]

FRA's Office of Railroad Safety promotes and regulates safety throughout the railroad industry. FRA takes a risk-based approach to how it deploys its nearly 400 Federal safety inspectors focusing on:

- Compliance and enforcement of track, crossings, signaling and train control
- Railroad safety and stakeholder training (including state safety inspectors)
- Accident and employee fatality investigations and reporting
- Numerous grade crossing and trespass-prevention initiatives
- Development and implementation of safety rules and standards

FRA oversees safety of railroads operating on what is known as the general system, a network of standard gauge track over which goods may be transported and passengers may travel. This system includes freight railroads.

FTA and FRA split responsibility for overseeing passenger rail safety. FRA oversees safety of intercity passenger and commuter railroads that operate over tracks owned by freight railroads and other entities. FTA oversees safety of rail transit systems that typically serve individual metropolitan areas and track not shared with freight and other intercity passenger trains. In addition to oversight, the FTA provides technical assistance to programs that help transit agencies prevent injuries, fatalities, property damage and system interruption, and to ensure transit agencies can quickly and effectively respond to any incidents. The Wisconsin Rail Plan 2050 follows FRA state rail plan guidance by including commuter rail in the plan.

[2] *For more detail about investigating incidents see Accident Data, Reporting, and Investigations | FRA (dot.gov)*

The Federal Highway Administration (FHWA) has a major role in safety at roadway-railway grade crossings. It sets standards for traffic control at roadway-railway grade crossings and establishes reporting requirements for crossings. FHWA also manages the Railway-Highway Crossing Program, a subset of the Highway Safety Improvement Program. Funds from this program provide for the elimination of hazards and the installation of protective devices at public roadway-railway crossings. To be eligible for these funds, states publish an annual report on the effectiveness of safety projects in reducing roadway-related crashes, injuries, and fatalities. FHWA also tests proposed new train detection and warning devices in cooperation with FRA and the Wisconsin Office of Commissioner of Railroads (OCR).

The Pipeline and Hazardous Materials Safety Administration (PHMSA) develops regulations for standards for rail tank cars designed to carry hazardous materials. For instance, the federal transportation law known as the FAST Act passed in 2015 required PHMSA to revise specifications for a type of rail tank car known as DOT specification 111 cars. These DOT 111 cars are designed to transport flammable materials such as crude oil. The new specifications are the result of research and engineering changes to improve the safety of these cars in cases of derailment or puncture.

The OCR is the state agency with primary responsibility for the safety of public roadway-railway crossings, regardless of whether the crossing is at-grade or separated from roadway traffic. The OCR works closely with WisDOT on rail safety issues. The OCR's duties include:[3]

- Authorizing installation, alteration, repair, and consolidation of roadway-railway crossings
- Making determinations on petitions for closures and establishment of new crossings, and on the adequacy of warning devices at railroad crossings
- Making determinations on railroad fencing and railroad track clearance laws
- Repair of rough crossings
- Assist with rail safety initiatives and participate in community outreach

Any order by OCR is final and has the force of law. WisDOT coordinates with and provides technical assistance to the wide range of stakeholders involved in safe operation and development of the rail system. WisDOT is responsible for roadway-railway crossing improvements in federally and/or state funded highway improvement projects. WisDOT also

[3] *OCR Home (wi.gov)*

regularly improves crossings as part of highway projects. These improvements typically address crossing surfaces and active warning devices.

Several WisDOT efforts address the security of roads, bridges, buildings, and other transportation assets including rail corridors and stations. Because railroads are typically owned and operated by private interests, WisDOT's enforcement efforts are focused on road traffic at grade crossings on the state trunk highway system.

WisDOT also promotes rail safety and security through its Internet site and by participating in educational programs such as Operation Lifesaver. At the planning level, WisDOT coordinates with local jurisdictions, metropolitan planning organizations, regional planning commissions, railroads, and rail transit commissions in considering rail safety improvements. WisDOT's major efforts also include:

- Several freight rail related programs to maintain and improve the condition of track owned by rail transit commissions, state government, and private railroads
- Generating and submitting to OCR the annual Statewide Assessment of Warning Device Upgrade Needs Report
- Continued collaboration with OCR through joint monthly staff meetings
- On-going regular meetings with railroads operating in Wisconsin on various issues

WisDOT serves as the state sponsor of Wisconsin's Operation Lifesaver, Inc., an international, non-profit, public education program established in 1972. Its goal is to end collisions, deaths, and injuries at places where roadways cross train tracks and on railroad rights of way. Operation Lifesaver supports public education, engineering, and enforcement efforts. Its programs are sponsored cooperatively by federal, state, and local government agencies; highway safety organizations; and the railroads. Trained and certified volunteers make safety presentations to a wide variety of groups throughout the state. For instance, railroads and local governments have worked with Operation Lifesaver on high profile high impact education programs to help people prepare for restoration of service or a significant increase of trains on a rail line.[4]

The Office of Wisconsin Emergency Management (WEM), located in the Department of Military Affairs, builds capabilities and coordinates resources to support a safe and resilient Wisconsin.

[4] Wisconsin Operation Lifesaver (oli.org)

WEM may upon request help coordinate specialized personnel or equipment to assist the local response effort to railroad related incidents such as derailments or crossing incidents.

Railroad companies are subject to safety and security regulations, primarily at the federal government level. At the state level, they are subject to the regulations of the Office of the Commissioner of Railroads. Their safety and security responsibilities include:

- Maintaining all public roadway-railway crossing surfaces in good repair and in safe condition for public travel (Wis State Stat. 86.13)
- Providing advance railroad crossing warning signs for town and county rail crossings upon request of the local highway authority; the local authority installs the signs (Wis State Stat. 195.286(1))
- Maintaining all installed warning devices, both active and passive, at public at-grade roadway-railway crossings, including interconnecting signals to traffic signals
- Providing safety and security preparedness and emergency response efforts on their rail lines
- Ensuring their equipment meets federal requirements
- Conducting monthly inspections of warning device systems interconnected to traffic signal systems, as well as annual joint inspections with the roadway authority

Amtrak is responsible for ensuring the safety and security of its passenger operations. Examples of the measures it uses include Amtrak police officers and security teams, onboard security checks, and canine units.

Metra is responsible for ensuring the safety and security of its commuter rail operations. Like Amtrak and private railroad companies, it has its own police department that provides security for all its lines and stations. Metra also provides training and education on emergency preparedness to its staff and to emergency responders serving communities where it provides service. Wisconsin has one Metra commuter rail station in Kenosha.

Rail Crossings and Incident Statistics

At-grade crossings are rail and roadway crossings that occur at the same level as the road, without any tunnels or bridges separating the two. Wisconsin has 3,254 miles of active train tracks, 4,735 public highway-rail crossings (732 grade separated; 4,003 at grade), and 2,147

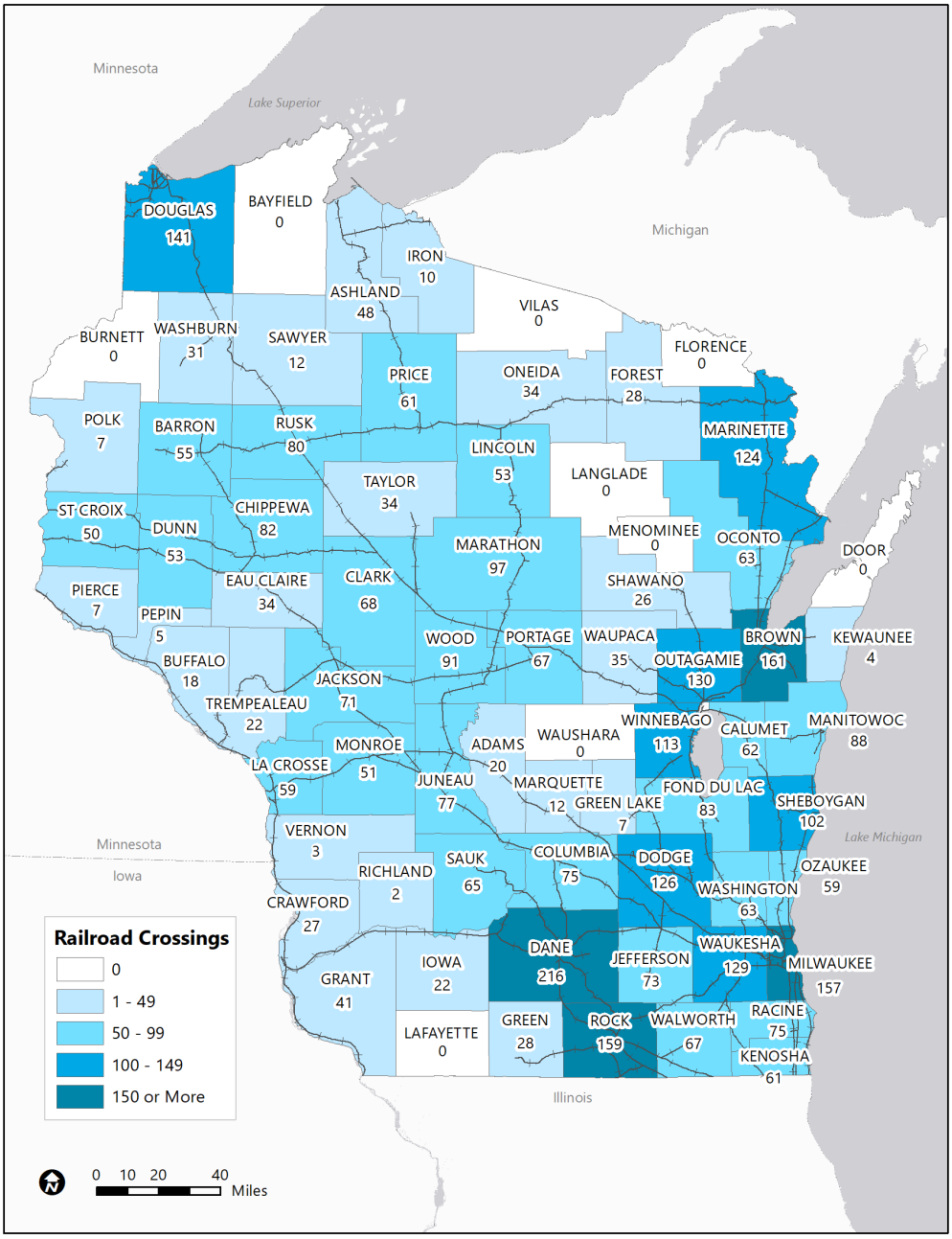
private crossings.[5] The OCR has jurisdiction over public crossings. Private crossings exist under an agreement between the railroad company and the private landowner. This agreement dictates the level of warning devices and layout of the crossing.

FRA's at grade rail crossing inventory is available online.[6] Each crossing has an associated crossing inventory form which includes details such as estimated frequency of typical daily train traffic, predominant surrounding land use, types of passive or active traffic control devices, characteristics of the roadway and crossing owner. WisDOT's Region Rail Coordinators inspect crossings and update the WisDOT's database. WisDOT then updates the roadway data on the FRA forms when highway details change because of road or crossing related projects.

Public at-grade crossings are dispersed and are not evenly distributed. The nine counties without public at-grade rail crossings do not have active rail service in their area (**Figure 7-1**).

[5] *Wisconsin Highway-Railway Grade Crossing Safety Action Plan (wisconsindot.gov)*
[6] *5.02 - Generate Crossing Inventory and Accident Reports (dot.gov)*

Figure 7-1: Public at-grade Rail Crossings by County[7]

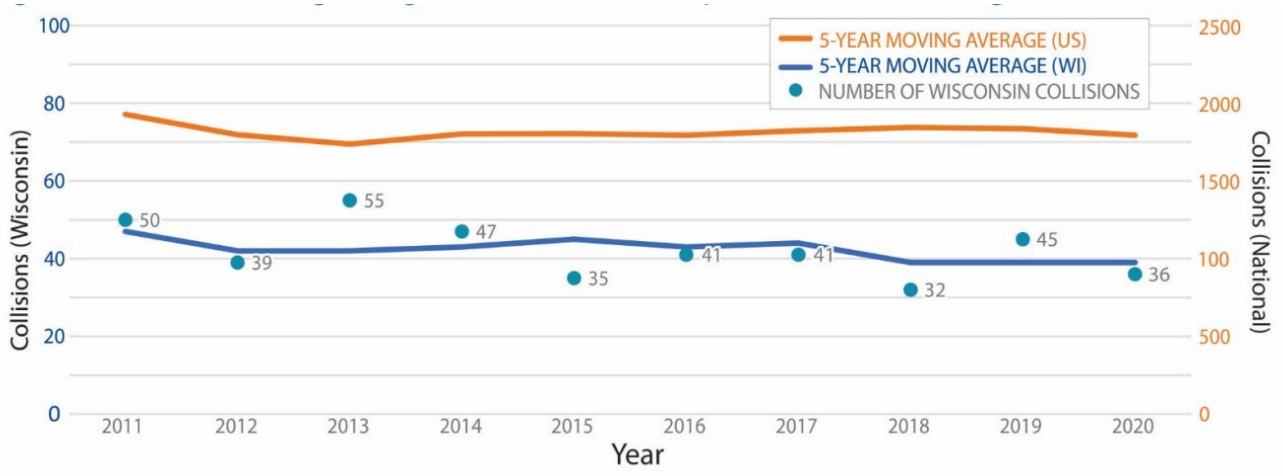


The number of incidents in Wisconsin are relatively low. A WisDOT analysis compared total incidents at public crossings in Wisconsin and nationally over ten years (2011-2020). These

[7] *WisDOT Railroad Crossing Inventory System, accessed June 24, 2021*

figures were graphed against a five-year moving average to illustrate the high-level trend. As seen in **Figure 7-2**, aside from slight upticks in 2015 and 2017, there was a consistent decline between 2011 and 2020. This contrasts with the national moving average which has remained steady over the past ten years.[8]

Figure 7-2: Five-Year Moving Average of Incidents in Wisconsin Compared to National Average (2011-2020)



WisDOT and its partners make continuing efforts to reduce crossing incidents, including identifying problem crossings. FRA announced new rules in 2020 implementing requirements for state highway rail crossing safety action plans to add structure to these efforts.

The Wisconsin Highway-Railway Grade Crossing Safety Action Plan (SAP) was completed in February 2022.[9] The SAP identified ten statewide goals:

1. Reduce the number and rate of incidents at railroad grade crossings
2. Reduce the number of severe incidents at locations with reoccurring incidents within the last five years
3. Efficiently deliver and manage projects in highway improvement; OCR safety: WisDOT safety and crossing surface repair programs
4. Implement and maintain safety improvements at interconnected crossing systems

[8] *Wisconsin Highway-Railway Grade Crossing Safety Action Plan (wisconsindot.gov)*
[9] *Ibid.*

5. Maintain a program to repair deficient railroad crossing surfaces on the state trunk highway network
6. Evaluate rail corridors for potential crossing consolidations
7. Improve data collection and analysis on railroad crossings
8. Implement design improvements at railroad grade crossings when undertaking highway improvement projects
9. Engage statewide stakeholders in education and enforcement
10. Reduce trespassing

WisDOT applied risk analysis and a data-driven engineering assessment to crossing and incident data. Highlights of the state-wide analysis include:[10]

- More incidents happened in snow and slush (19% in Wisconsin; 4% U.S.) than the national average.
- Wisconsin had a lower percentage of pedestrian incidents (7%) than the national average (10%).
- A higher percentage of highway users involved in incidents in Wisconsin (42%) did not stop at crossings than the national average (36%).
- Incidents involving an Amtrak train in Wisconsin (4%) were below the national average (7%).

The SAP identifies specific at-grade road and pathway rail crossings that (a) have experienced recent accidents or incidents; (b) have experienced multiple accidents or incidents; or (c) are at high-risk for accidents or incidents. Specific strategies are identified for improving safety at these crossings, including closures or grade separations. The SAP is available on WisDOT's railroad crossing improvements website.[11]

At-grade crossings are equipped with warning devices to alert vehicles, pedestrians, and bicyclists of the presence of a crossing. These warning devices may be either passive or active. Passive devices provide static messages of warning, guidance, and regulatory action. A crossing may be protected with only passive devices or may be combined with active devices.

---

[10] *Ibid.*

[11] *Wisconsin Department of Transportation Railroad crossing improvements (wisconsindot.gov); the SAP includes details of the safety analysis methodology*

Signs and pavement markings at highway-rail crossings follow engineering specifications in the Manual of Uniform Traffic Control Devices and the Wisconsin Supplement.[12]

Examples of passive devices:

- Crossbucks (the familiar X-shaped signs)
- Stop Sign
- Yield Sign
- Pavement markings
- Median barriers

Active devices activate as a train approaches. For example, lights may flash, and gates may be lowered. Active devices include:

- Gate arms (i.e., two quad or four quad)
- Flashing lights (cantilevered or mast-mounted)
- Bells
- Interconnection with traffic signals

The OCR decides the appropriate device type for new crossings. Crossings in need of changes to the device type used are brought to OCR's attention by local governments, WisDOT, individual complaints, OCR's own investigations, and regular state-wide benefit-cost evaluation scans.

Crossing safety may also be increased through changes to the geometrics of the roadway or to the area near the crossing. For example, the design of the roadway may be changed to improve sight distances. Clearing trees or brush can also improve sight distances.

WisDOT and local governments regularly improve roadway-railway crossings as part of roadway projects. Any project with federal or state funds that crosses a track or ends near a track includes a review of whether any crossing improvements are needed. Crossing improvements are coordinated with the railroad company.

The OCR has authority to identify and prioritize an annual program of federal safety funds with a state match. These OCR program funds are used exclusively for installation or upgrades of

[12] *Wisconsin Department of Transportation Wisconsin Manual on Uniform Traffic Control Devices (WMUTCD) (wisconsindot.gov)*

warning systems at railroad grade crossings. The OCR uses the following sources to help identify and prioritize candidate improvement projects:

- The WisDOT Statewide Assessment of Warning Device Upgrade Needs
- OCR's knowledge of highway-rail crossings throughout the state based on field reviews and discussions with local units of government
- Petitions OCR receives from local units of government to improve specific highway-rail crossings
- Corridor evaluation studies that evaluate highway-rail crossings on specific corridors to comprehensively address crossing safety

Educational efforts can increase public awareness of the dangers at roadway-railway crossings, and emphasize the need for motorists, pedestrians, and bicyclists to respond properly to crossing warning devices.

Grade-separated crossings, such as tunnels or bridges, are safer than at-grade crossings because they physically separate vehicles, pedestrians, and bicyclists from trains. However, grade-separated crossings are expensive to build and maintain. Typically, these crossings are built in locations with higher volumes of vehicle and train traffic.

Consolidating crossings can positively impact crossing safety but may also result in hardships. Eliminating a crossing may result in greater travel times for drivers, bicyclists, and pedestrians. It can also result in increased emergency response time for emergency vehicles. Because of the high benefits to safety that come along with crossing consolidations, WisDOT routinely takes into consideration the potential to consolidate crossings when scoping highway improvement projects. Consolidating a crossing can create many impacts, so it requires coordination with local governments, the railroad company, and possibly OCR.

The OCR considers many factors when deciding whether to close a crossing, including:

- Amount of vehicle and pedestrian traffic
- Response time for emergency vehicles
- Physical conditions and visibility
- Feasibility of rerouting traffic to adjacent crossings

- Crash history and predicted crash frequency rate
- Improvement in livability in the area near the proposed closure

Rail line abandonment can result in the closure of crossings. However, rail line abandonments are rare and typically occur on low volume railway corridors. As a result, the derived safety benefit may be minimal. Where possible, WisDOT and OCR focus on consolidating crossings in areas with multiple adjacent crossings, concentrating safety improvements at the remaining crossings. Many of the negative impacts associated with closures can be minimized by focusing on these areas.

Keeping Safe at At-grade Crossings

WisDOT, OCR and FRA all support a safety vision to reduce the numbers of injuries and fatalities associated with rail crossings. The consistent use of some basic safety practices by drivers, bicyclists and pedestrians can help keep everyone safe:[13]

- **Always expect a train** at each highway-rail or trail-rail intersection. Freight trains do not travel at fixed times and schedules for passenger trains change.
- **Cross train tracks only at designated pedestrian/bike or roadway crossings** and obey all warning signs and signals posted there. Crossing at any other place is illegal trespassing and can result in a ticket or a fine.
- All train tracks are private property. **Never walk on tracks; it is illegal and unsafe to trespass.** By the time a train engineer sees a trespasser or vehicle on the tracks it's too late. It can take a mile or more to stop a train.
- **Do not be in the train right of way along the tracks.** Trains overhang the tracks by at least three feet in both directions; loose straps hanging from rail cars may extend even further. Anyone in the right-of-way next to the tracks can be hit by the train.
- **Stay alert** around railroad tracks. No texting, headphones or other distractions that would prevent hearing an approaching train; never play along the tracks.
- **Look both ways when crossing tracks.** Trains can move in either direction at any time. Sometimes cars are pushed by locomotives instead of being pulled, which is especially true in commuter train service.

[13] *Wisconsin Department of Transportation Railroad safety (wisconsindot.gov)*

- **Do not try to "cut it close" when crossing tracks.** Trains may be closer and traveling faster than they appear.
- **Watch for a second train!** When at a crossing with more than one track, do not try to cross immediately after the end of the train passes. There may be another train approaching on the other track.

The Wisconsin Motorists Handbook includes additional tips and explains warning devices and signs. Safe rail crossing information is also available for motorcyclists (Wisconsin Motorcyclists' Handbook) and in the condensed Wisconsin Driver's Book (available in English, Hmong, and Spanish). These handbooks are available online and at WisDOT Department of Motor Vehicle centers state-wide.[14]

Staff from Wisconsin Operation Lifesaver are available to provide free presentations to all age groups and special audiences such as school groups, bus drivers, professional truck drivers, law enforcement, and first responders.[15]

Quiet Zones

Railroads have sounded locomotive horns or whistles in advance of grade crossings as a universal safety precaution since the first locomotives began service in the 1800s.

Federal law requires train engineers to sound the train horn as a warning at public roadway-railway crossings. The horn duration and a maximum decibel level are also set in federal law. Train horn use is a basic safety measure to warn drivers, pedestrians, and bicyclists a train is coming.

Train horns from frequent trains along a track can be disruptive to people living or working near-by. The implementation of federal law in 2005 created the option of creation of a quiet zone to mitigate these disruptions. Quiet zones are so named because the blowing of train horns is replaced over a small segment of track near crossings by other crossing safety control measures. Wisconsin had 92 quiet zones as of August 2022.[16]

Only local governments and OCR may establish a quiet zone. Quiet zones must be at least 1⁄2 mile in length and have at least one public highway-rail grade crossing. Every public grade crossing in a quiet zone must be at least equipped with a set of standard active warning devices

[14] *Wisconsin DMV Official Government Site - Driver handbooks, publications and forms (wisconsindot.gov)*
[15] *Wisconsin Operation Lifesaver (oli.org)*
[16] *Quiet Zone Locations by City and State | FRA (dot.gov); accessed August 24, 2022; report date August 15, 2022*

(i.e., flashing lights and gates). Communities have the option to establish partial quiet zones restricting train horn sounding during overnight hours between10:00 P.M. to 7:00 A.M.

Local governments must work in cooperation with the railroad that owns the track, FRA, OCR and WisDOT to use a diagnostic team to assess the risk of collision at each grade crossing in the proposed quiet zone. Engineering standards are used to identify where and what type of additional safety engineering improvements are necessary based on local conditions such as

- Highway traffic volumes
- Train traffic volumes
- Accident history
- Physical characteristics of the crossing, including existing safety measures

Examples of additional safety engineering improvements that may be necessary to reduce the risk of collisions include:

- Medians on one or both sides of the tracks to prevent a motorist from driving around a lowered gate
- A four-quadrant gate system to block all lanes of highway traffic
- Converting a two-way street into a one-way street
- Permanent closure of the crossing to highway traffic

As an alternative to quiet zones, communities may also choose to install train activated wayside horns at each crossing to be used instead of the on-board train horns. While WisDOT neither supports nor opposes quiet zones, policy prohibits federal or state funds from being used for safety upgrades solely to establish a quiet zone. Instead, federal or state funds may be used only if there is an overarching need for safety improvements at the crossing and those improvements also meet the standards for creating a quiet zone. For all other instances not associated with a project on the state trunk highway system, a community must either fund the necessary safety improvements on its own or with a cost share agreement negotiated with the railroad. Train engineers retain the authority and responsibility to use the horn if they feel conditions warrant its use, even in a quiet zone.

Collisions and Derailments

There are other types of train incidents that do not involve crossings. **Table 7-1** shows incident data from 2016-2020 for incidents and crashes only involving trains not at crossings. The number

of incidents has generally remained steady. The 2020 data may reflect the significant reduction of economic activity, including rail shipments, occurring during the COVID-19 pandemic.

Table 7-1: Train Incidents (including collisions and derailments) 2016-2020[17]

Year	Train Incidents				Reportable Damage Estimate
	Total	Injuries	Fatalities	Derailment	
2016	20	3	-	15	$ 3,407,261
2017	20	-	-	16	$ 4,247,465
2018	28	5	-	20	$ 5,825,996
2019	21	-	-	14	$ 3,466,459
2020	11	-	-	9	$ 4,025,422

Collision prevention between two trains relies on technology and operations discipline:

- Scheduling in coordination with other track users, especially in busy trackage areas such as Chicago that have a central dispatch all rail operators use
- Positive train control that allows automatic monitoring of train location, speed, and response to signals
- Maintenance of braking and signaling systems to prevent failures

While derailments may occur when a train collides with a vehicle, the chances for a derailment increase significantly if a train collides with another train. These collisions may result from natural events, such as severe weather, from human error, or from a range of other potential causes.

A strong track inspection program is essential to maintaining track quality and reducing the likelihood of derailments. Federal regulation includes extensive requirements for safe track condition. WisDOT, FRA, and the railroad companies all have responsibilities in inspecting the rails:

- WisDOT requires recipients of its two freight rail program awards to inspect the track at least every three years for defects using a geometric rail car
- FRA's rail safety inspection program employs track inspectors to do routine inspections

[17] *Wisconsin Highway-Railway Grade Crossing Safety Action Plan (wisconsindot.gov)*

- Railroad operators conduct their own re-occurring inspections in compliance with federal requirements

FRA announced in 2021 implementation of a new rail inspection technology rule. Railroads were allowed to use ultrasonic inspection technology, augmented with global positioning system (GPS) technology, for continuous rail testing. This makes it easier to test track more frequently and to identify and repair internal track flaws before conditions degrade safety. The equipment is carried on rail cars in regular service. Testing of the systems between May 2019 and May 2020 resulted in a 27% reduction in broken rail-caused train accidents in the testing corridors.

Rail traffic delays caused by on site manual inspection to verify data under the old method is eliminated by use of the technology. Using existing methods, about 20 miles of track a day is tested. Railroads using continuous rail testing were able to test 80 to 160 miles of track daily.

In addition to reducing train congestion, there are also significant staffing cost savings. FRA estimates that one continuous rail car could replace three to five stop-and-verify test cars. This results in fewer test cars stopping on tracks and reduces the number of trains that slow to accommodate them. Fewer slow trains increase the overall efficiency of railroad operations.

Trespassing

Trespassing presents both safety and security concerns. Even as roadway-railway crossing-related fatalities have declined, the number of trespassing-related fatalities has risen. Since 1997, trespassing fatalities have become the leading cause of rail-related fatalities in the United States. In Wisconsin, there were 26 trespassing-related fatalities between 2016 and 2020.[18]

Since rail facilities are private operations, entering railroad property at any location that is not designated as a crossing is trespassing and is inherently hazardous. WisDOT and OCR have mutual interest in supporting the current state law that prohibits people from crossing the tracks at any place that is not a designated crossing. Trespassers frequently sustain life-threating injuries by failing to use designated locations, which are designed to provide adequate warning and infrastructure for a safe crossing.

A private crossing agreement may be reached between a property owner and a railroad for a specific location. The agreement can be used by a private landowner to secure access public roadways or property bisected by track for instance. Railroads are required to provide farm

[18] *Wisconsin Highway-Railway Grade Crossing Safety Action Plan (wisconsindot.gov)*

crossings for farming operations. Wisconsin State Statute Section 192.37 requires railroad operators to work with farmers to construct a crossing and livestock fencing at agreed upon locations.[19]

Railroads, local jurisdictions, and state and federal agencies rely on a variety of measures to prevent and restrict trespassing. Education is one measure. The FRA sponsors public education related to the dangers of trespassing. Railroad and local police departments play a crucial role in monitoring trespassing. Fencing, lighting, gates, and barricades are physical measures that can be installed to discourage trespassing.

Shipment of Hazardous Materials

The U.S. Department of Transportation defines hazardous materials, or hazmat, as substances or materials capable of posing an unreasonable risk to health, safety, or property when transported in commerce. Hazardous materials shipments present a unique safety and security concern. Hazmat shipments are carried through Wisconsin on railroads, trucks, and by pipeline.

WEM coordinates certain hazmat related emergency response efforts and engages in planning efforts. WEM contracts with regional hazmat response teams to provide a high level of response capability to the state's communities. These teams may be activated for an incident involving a hazmat spill, leak, explosion, injury, or the potential of immediate threat where it occurs.[20] County-level response teams respond to lower-level hazardous materials incidents that exceed the capabilities of standard local fire departments.

Train crews are required to keep records of any hazmat materials being shipped. The Canadian and U.S. governments implemented regulatory changes to allow this documentation, known as shipping documents, to be kept electronically. This allows for easier access by first responders in case of an emergency. Railroads also maintain 24/7 incident report lines to assist emergency response efforts.

Most Class I railroads provide training to local governments on responding to critical incidents, including how to deal with hazardous materials spills. Some Class I railroads have their own hazmat response teams. Many provide hazmat materials data to emergency planners about the most likely materials being shipped through communities.

[19] *Wisconsin Legislature: 192.37*
[20] *Wisconsin Hazardous Materials Response System, Response Teams – Wisconsin Emergency Management*

Rail Security

Like safety, transportation security is a high priority. The primary entities involved in rail security are WEM, local governments, the Wisconsin State Patrol, and railroads. Federal agencies may also become involved if there is a threat of an incident or if an incident occurs.

Rail security efforts have focused on securing the shipment of certain hazardous substances, as well as ensuring the security of key infrastructure. Rail security concerns focus around two key areas:

- Reducing vulnerability
- Emergency response

Reducing Vulnerability

WisDOT's vulnerability assessments identified more than 100 transportation facilities – including highways, rail, air, transit, and waterways – as being critical links in the state's transportation system.

Actions to prevent or mitigate potential security threats were identified. These actions fall into three categories:

- Deterrence (i.e., limiting physical access) – examples include fencing, lighting, barriers, gates, checkpoints, patrols, and guards
- Detection – examples include personnel identification, inspection, lighting, alarms, sirens, closed-circuit television, and chemical, biological, radiological, nuclear, and explosive detection technology
- Defense – examples include barriers, structural hardening, and blast reinforcement

WisDOT, freight shippers, and the railroads use all these strategies and employ many of these devices and technologies on railroad locations statewide.

Highway bridges located over rail facilities are particularly of concern. Wisconsin has 613 highway bridges over rail facilities (not including pedestrian walkways). Rail cars parked beneath these structures—especially those containing hazardous materials—can pose a security threat to the roadway and to the railway itself if hazardous materials are released.

Securing the nation's passenger rail systems is a shared responsibility. It requires coordination between federal, state, and local governments, the private sector, and rail passengers who use these systems. Although all levels of government are involved in passenger rail security, the

primary responsibility for securing passenger rail systems rests with passenger rail operators. As a partner in those efforts, WisDOT will continue to participate in discussions and implement measures to ensure the security of the transportation system statewide.

The Wisconsin State Patrol coordinates drone training with railroads and volunteers. The training focuses on using video and camera equipped drones during incident response and incident reconstruction.

The Department of Homeland Security issued a series of directives regarding protective measures that apply to all passenger rail operators.[21] Some of these directives include:

- Conducting comprehensive vulnerability assessments of rail and transit networks that operate in high-density urban areas
- Training personnel to prevent and respond to potential terrorist or criminal events
- Asking employees and passengers to report suspicious behavior or unattended property
- Using canine explosive teams to screen passenger baggage, terminals, and trains, when needed
- Ensuring that security levels are consistent with Department of Homeland Security threat levels

Emergency Response

The importance of coordinated skilled emergency response procedures – in both the initial hours after an incident occurs and, in the days, or months following the incident – has been demonstrated repeatedly. Major incidents typically involve a phase of rescue and recovery followed by a longer period of reconstruction. The demands placed on transportation and emergency response partners evolve throughout an emergency.

Communication between many agencies is important to ensure that appropriate and accurate information is shared in a timely manner. To help facilitate a prompt response, every roadway-railway crossing in Wisconsin has a blue sign indicating that crossing's unique identification number, as well as emergency contact numbers for the appropriate railroad. This allows emergency responders to quickly identify an incident's location.

WEM may coordinate the local response effort upon request from local or state law enforcement. This includes fire departments, hazardous materials response teams, local law enforcement,

[21] *Rail Security What You Need to Know TSA (dot.gov)*

Wisconsin State Patrol, WisDOT, and the railroads. In some instances, rail personnel might first contact the National Response Center, which will then contact WEM.

WisDOT has an all-modes Emergency Traffic Control and Scene Management Guidelines. It provides the necessary structure for the department to effectively respond to an emergency incident. The Emergency Traffic Control and Scene Management Guidelines document the procedures, processes, technology, roles, and relationships to be used when responding to incidents.

Topics covered in the guidelines document include:

- National Incident Management System (NIMS) and Incident Command System (ICS)
- Responder safety fundamentals
- Scene size-up and communications
- Traffic incident management area establishment
- Scene breakdown and demobilization
- Traveler information
- Hazardous materials response
- Helicopter emergency medical services landing zones
- Crash investigation/reconstruction
- Clearance/removal operations
- Emergency alternate routes
- Post incident debriefings

A field operations guide and training for local responders is also available.[22]

[22] *Wisconsin Department of Transportation TIME - WisDOT Emergency Traffic Control and Scene Management Guidelines (wisconsindot.gov)*

Chapter 8 Environmental Context

This chapter provides a qualitative analysis of potential environmental impacts (benefits and burdens) resulting from the operations, maintenance, and development of Wisconsin's rail network. This chapter utilizes a conceptual focus and a statewide scale for analysis, resulting in the consideration of system-level impacts. It does not replace future project-level environmental reviews, which are conducted as part of federal or state funded projects, or any project requiring federal or state permits. Project-level review may include strategies to mitigate (avoid, minimize, or compensate for) environmental impacts.

Together with **Chapter 9 Equity Context** and **Chapter 11 System-Plan Environmental Evaluation (SEE)**, this chapter helps to inform project-level environmental analysis. Impact mitigation strategies discussed in this chapter identify the efforts WisDOT employs to address rail program needs while balancing environmental responsibilities and quality of life througout the state.

Chapter 9 Equity Context includes a description of where low-income, minority, people with disabilities, seniors, youth, and zero-vehicle household populations live relative to rail infrastructure. This provides a system-level perspective of potential impacts from implementation of the Wisconsin Rail Plan 2050 on these population subgroups. This analysis is a first step to ensuring these populations are considered as the Rail Plan and related projects and studies are implemented.

Chapter 11 System-Plan Environmental Evaluation fulfills regulatory requirements outlined in Wis. Trans 400 (Trans 400) to review the potential environmental impacts of a system-plan in accordance with the Wisconsin Environmental Policy Act. The SEE compares the implementation of the plan scenario (Wisconsin Rail Plan 2050) to the base case (existing policies outlined in Wisconsin Rail Plan 2030) and identifies how it would contribute to the potential impacts outlined in this chapter.

Development of the Wisconsin Rail Plan 2050 (WRP 2050) followed a comprehensive process that included coordination with Tribal Governments and environmental resource agencies, identified in **Chapter 15 Public Involvement Details**. These coordination efforts helped to identify potential

environmental impacts related to rail. This chapter identifies potential impacts by SEE topical areas outlined in Trans 400[1]:

- Congestion
- Energy consumption
- Air quality and greenhouse gas emissions
- Economic growth and development
- Communities and cultural resources
- Sensitive land and water resources
- Agriculture
- Indirect and cumulative effects

Within each of these environmental topical areas, WisDOT also considers Environmental Justice as required by Executive Order 12898. Environmental Justice is a critical component of an environmental review and aims to identify and address disproportionately high burdens on minority and low-income populations. Within the WRP 2050, Environmental Justice is addressed as part of the broader equity analysis in **Chapter 9 Equity Context** and **Chapter 11 System-Plan Environmental Evaluation**.

Congestion

Summary *WisDOT considers both roadway and rail congestion. Rail congestion can be alleviated through infrastructure and technological improvements. Passenger rail and freight rail can help remove personal vehicles and trucks from the roadway, alleviating congestion.*

In general, investment in the rail system has the potential to alleviate both railroad and roadway traffic congestion. Rail transportation can more efficiently transport people and goods when compared to personal vehicles or freight trucks. Travelers who choose intercity passenger or commuter rail may do so instead of using an automobile, reducing the volume of vehicles on the roadways. Similarly, when goods are moved via freight trains rather than freight trucks, it reduces the number of large trucks on the roadway. Each of these helps to reduce vehicle trips which could potentially reduce roadway congestion.

[1] *Wisconsin Legislature: Chapter Trans 400*

Rail line congestion can occur when the capacity of the rail network is unable to accommodate the volume of trains at the expected speeds, such as when a train must make an unexpected stop or slow down as the result of several factors (e.g., an event that blocks the track, track sharing need, inclement weather, or a crash). For freight rail, congestion may also occur at the onset or terminus of the freight system, such as unloading and loading facilities. Train idling due to rail line congestion can result in environmental burdens to air quality and quality of life through noise and vibration. Rail congestion also creates economic impacts by causing delays and backups to the movement of people and goods. WisDOT works with railroads and partner agencies to monitor and implement capacity improvements where necessary to alleviate congestion.

Based on 2019 IHS Transearch data, Wisconsin's railroads move 32% of Wisconsin's total freight by weight, about 188 million tons annually. By 2050, total freight tonnage is forecasted to increase by 78%. Of all modes, rail shipping is forecasted to increase 119% by tonnage, the most of any mode.[2] This projected growth will place increased demands on the state's rail network. The impact may mean an increase in the number of trains, carload weight, or changes to carload structure (longer or taller trains). Private railroad operators address needs on their rail networks while the state works with operators on publicly owned lines to address their needs.

Increased freight rail traffic may impact Wisconsin's current intercity passenger rail network, which operates entirely on shared routes owned or operated by freight railroads. On shared corridors, passenger rail service can experience congestion due to delays caused by problems with host-railroad train dispatching, speed restrictions, track maintenance, track sharing, insufficient track capacity, or equipment malfunctions. Proposed intercity passenger and commuter rail services could place additional demands on those lines or use other lines. Capacity improvements to accommodate potential new services may include new passing sidings, improved coordination of signalization and scheduling, and track upgrades. Improvements necessary to accommodate passenger rail are expected to enhance freight service as well.

Rail line abandonments also have potential to influence rail line congestion levels. When lines are abandoned, fewer active lines are available to handle rail-related activity. WisDOT has worked with its partners and Rail Transit Commissions[3] (RTCs) to preserve rail corridors proposed for abandonment for future use[4]. If a corridor is being abandoned and the department,

---

[2] Source: 2017 HIS Transearch with 2050 Forecast

[3] RTCs are permitted under Wisconsin Statutes 59.968 and 66.30 to preserve and continue freight rail service throughout the state.

[4] See WisDOT's Guide to Railroad Abandonments in Wisconsin for more info. https://wisconsindot.gov/Documents/doing-bus/freight/rr-abandon.pdf

communities, and private railroads are not able to preserve the current use, efforts shift to a rail corridor preservation approach. This preserves rights-of-way for future rail transportation purposes. While preserved for future rail use, some corridors are used as recreation trails such as rails-to-trails. With the anticipated growth in freight rail shipping and expansion of intercity passenger rail service, it is legally possible that some of these preserved corridors could be restored back to rail.

Energy Consumption

Summary: *The transportation sector consumes a quarter of the state's energy, but investment in rail can reduce energy consumption. Freight rail is an energy efficient option compared to truck freight. Passenger rail systems consume less energy than motor vehicles.*

In 2018, transportation accounted for 24.1% of Wisconsin's energy consumption[5]. Trains require the consumption of large amounts of energy to move, idle, and to load and unload cargo. Energy consumption is influenced by trip length, the weight of the train and cargo, and time spent idling.

Compared to other modes of transportation however, freight rail is one of the most efficient after inland barges. Trucking is less energy efficient than freight rail in ton-miles per gallon of fuel consumed.[6]

Passenger and commuter rail systems consume far less energy than automobiles. On a per passenger-mile basis, rail passenger service is on average 19% more energy efficient than air travel and 28% more energy efficient than auto travel. Rail passenger service also emits less carbon dioxide (CO2) than either mode per passenger-mile.[7]

WisDOT supports the use of equipment and train set technologies that improve fuel efficiency, which in turn can lower emissions. In Wisconsin, all modern railroad engines use diesel as their main fuel source. WisDOT is part of a multi-state equipment purchase consortium for intercity passenger rail equipment. As of 2020, new engines satisfy U.S. EPA's Tier 4 emissions standards, which reduce particulate matter and nitrogen oxide emissions by 90% relative to previous standards to near-zero levels.[8]

---

[5] *US Energy Information Administration, Wisconsin State Profile and Energy Estimates; U.S. Energy Information Administration - EIA - Independent Statistics and Analysis*
[6] *Oak Ridge National Laboratory, Transportation Energy Data Book Edition 37; Transportaton Energy Data Book: Edition 37 (ornl.gov)*
[7] *Amtrak, "North Coast Hiawatha Passenger Rail Study" (2009;) P.R.I.I.A. Section 224 - North Coast Hiawatha Passenger Rail Study (gnwwg.org)*
[8] *40 CFR Parts 9, 69*

In the future, trains may become even more energy efficient because of more efficient diesel engines, alternative fuel types, fuel conservation practices, lower-resistance wheel bearings, use of distributed power, and implementation of positive train control.[9]

Rail transportation can also influence energy efficiency in other sectors. Passenger and commuter rail stations are often key components of transit-oriented development patterns, which are high-density areas that facilitate more energy-efficient travel patterns. WisDOT supports linking rail routes with intercity and local bus service through multimodal transportation centers. Potential benefits of connecting modes include the reduction of fossil fuel emissions and energy consumption, expanding options for zero-vehicle households, and improved transportation options.

Air Quality and Greenhouse Gas Emissions

Summary: *Rail transportation and the combustion of diesel fuel contributes to air pollution and greenhouse gas emissions, but technology improvements and regulatory changes help limit this effect. Increased rail use may help to reduce air pollution and emissions by providing a more efficient means of transportation.*

Transportation is a major contributor to air pollution on a national scale. In 2015, transportation sources contributed over 50% of carbon monoxide (CO) and nitrogen oxide (NOx) emissions throughout the US.[10] In Wisconsin, more than 40% of human-made volatile organic compounds (VOC) and over 60% of human-made NOx emissions are attributed to transportation sources.[11]

Diesel fuel combustion from rail movement contributes to these emissions. However, rail transportation offers a viable option to help reduce emissions overall, as it is more efficient per ton-mile and passenger-mile compared to truck freight and automobiles.[12] Improved train control and powertrain technologies continue to reduce emissions.

Air quality varies geographically across Wisconsin and is impacted by emissions produced in-state and out-of-state that are carried on air currents into the state. The highest levels of air pollution occur in Wisconsin's southeastern counties and along the Lake Michigan shoreline.

---

[9] *Positive train control refers to systems designed to prevent train-to-train collisions, over-speed derailments, incursions into established work zones, and movements of trains through switches left in the wrong position*

[10] *U.S. Environmental Protection Agency; Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2015; Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2015 | US EPA*

[11] *Wisconsin Department of Natural Resources, "Vehicles – Mobile Sources."*

[12] *Oak Ridge National Laboratory, Transportation Energy Data Book Edition 37; Transportaton Energy Data Book: Edition 37 (ornl.gov)*

Air Quality

Summary: *Wisconsin has several nonattainment and maintenance areas for ozone along Lake Michigan. While rail contributes to air pollution, it emits less pollutants per passenger-mile than automobiles and per ton-mile than freight trucks.*[13]

Air pollution carries several health risks. Individuals exposed to elevated levels of ozone, particulate matter (PM), and nitrogen oxides (NOx) have elevated risks of developing respiratory disease, cardiovascular disease, and certain forms of cancer. Prenatal exposure has also been linked to childhood neurological problems.[14]

The Clean Air Act requires the EPA to set National Ambient Air Quality Standards (NAAQS) for pollutants that are considered harmful to public health and the environment, including carbon monoxide, lead, nitrogen dioxide (NOx), ozone, particulate matter, and sulfur dioxide. Areas where levels of these pollutants persistently exceed the NAAQS may be designated as "nonattainment areas." There are areas of Wisconsin in nonattainment or maintenance status for some aspect of air quality. WisDOT evaluates projects for air quality impacts during project-level environmental review. The next sections provide further detail for ozone, particulate matter, and sulfur dioxide.

Ozone

Ozone is formed when VOCs and NOx combine in the presence of heat and sunlight. Fossil fuel combustion is a source of these compounds, including diesel fuel combustion from locomotives. In 2015, the EPA revised the NAAQS ozone standards previously set in 2008 to be more stringent, from 75 parts per billion (ppb) to 70 ppb.[15] In 2018, the EPA designated parts of 8 counties as nonattainment or maintenance for ozone[16] (**Figure 8-1**):

- Sheboygan
- Manitowoc
- Milwaukee
- Ozaukee
- Washington
- Waukesha
- Racine
- Kenosha

[13] *Oak Ridge National Laboratory, Transportation Energy Data Book Edition 37; Transportaton Energy Data Book: Edition 37 (ornl.gov)*
[14] *National Institute of Health, "Air Pollution and Your Health"*
[15] *Wisconsin Department of Natural Resources, "EPA's Final Designations for the 2015 Ozone National Ambient Air Quality Standard", June 2018.*
[16] *All of Sheboygan County and the part of Kenosha County east of I-94 are still nonattainment for the 2008 ozone NAAQS (75 ppb) and will continue to be until the standards are revoked*

Particulate Matter

Particulate matter (PM) is another pollutant of concern in Wisconsin. PM is a complex mixture of extremely small particles and liquid droplets made of nitrates, sulfates, organic chemicals, metals, soil, and/or dust. PM is classified into two primary categories: PM10 (inhalable particles of up to 10 micrometers in size), and PM2.5 (fine particles of up to 2.5 micrometers in size).

All counties are currently in attainment for PM. Previously, the EPA had designated Milwaukee, Racine, and Waukesha counties as nonattainment for PM2.5, but after efforts to reduce PM pollution levels, these areas were removed from the nonattainment list.[17] Near-roadway monitoring is currently required for larger urban core-based statistical areas and are required for all urban areas with a population over 1 million, which in Wisconsin is the Milwaukee-Waukesha-West Allis Metropolitan Statistical Area.[18]

Rail transportation sources emit a relatively small proportion of PM pollution compared to trucks.[19] PM10 particles can be emitted from material handling during loading of freight. PM2.5 particles are directly emitted by diesel fuel combustion.[20] While freight rail is currently more fuel efficient than trucking on a ton-mile basis, technology improvements have made Liquid Natural Gas (LNG) and Condensed Natural Gas (CNG) viable truck fuel options, both of which produce 90% fewer PM than diesel.[21] Improved powertrain technologies for locomotives also continue to improve emissions from rail.

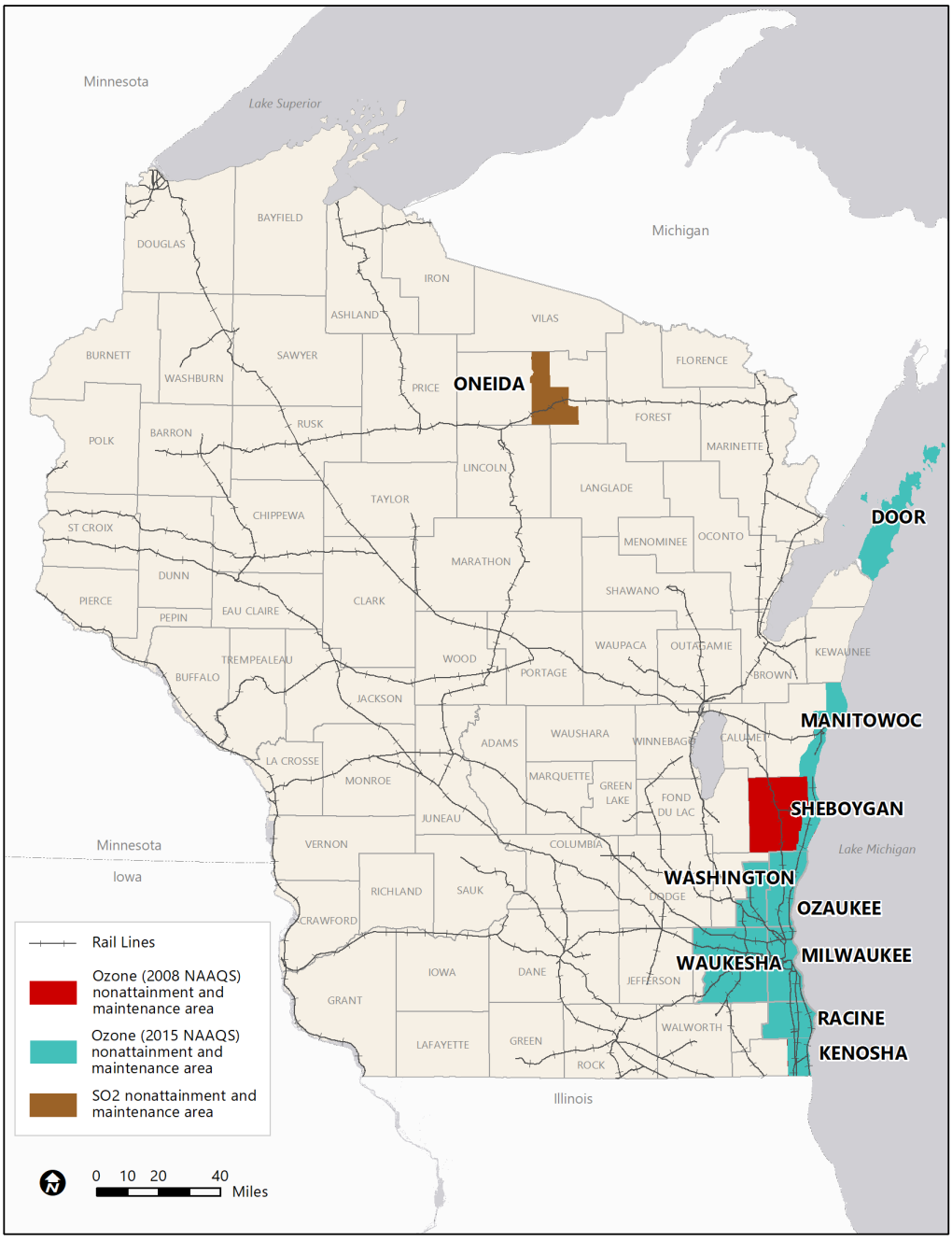
Sulfur Dioxide

Currently only parts of Oneida County are in maintenance status for sulfur dioxide (SO^2), due to a point pollution source at a specific factory power plant. While a private freight rail line runs through this maintenance area, the largest source of SO^2 in the atmosphere is the burning of fossil fuels by power plants and other industrial facilities; diesel fuel combustion from locomotives is only a minor contributor.[22]

---

[17] *Wisconsin Department of Natural Resources, "Wisconsin Air Quality Trends." (April 2015).*
[18] *40 CFR Part 58*
[19] *Federal Highway Administration, "Freight and Air Quality Handbook." https://ops.fhwa.dot.gov/publications/fhwahop10024/sect2.htm*
[20] *Ibid.*
[21] *National Renewable Energy Laboratory, "An Emission and Performance Comparison of the Natural Gas C-Gas Plus Engine in Heavy-Duty Trucks", April 2003*
[22] *Federal Highway Administration, "Freight and Air Quality Handbook." https://ops.fhwa.dot.gov/publications/fhwahop10024/sect2.htm*

Figure 8-1: Wisconsin Counties with Areas Designated NAAQS Nonattainment or Maintenance 2021[23]



[23] *Effective July 2021.*

Greenhouse Gases

Summary: *Transportation is Wisconsin's second-largest contributor of greenhouse gases. Localized increases in emissions may occur at rail stations and rail yards due to idling but increasing passenger and freight rail services will help reduce emissions overall.*

The EPA defines greenhouse gases (GHG) as those which trap infrared radiation in the atmosphere, thus trapping heat and increasing temperatures.[24] The primary greenhouse gases include CO2, methane, NOx, and fluorinated gases.

As a result of fossil fuel combustion, Wisconsin's transportation sector is a major contributor of the state's greenhouse gases, behind only electricity generation (33%). In 2017, the transportation sector contributed 24% of total GHG emissions in Wisconsin,[25] the majority from road vehicles like cars and trucks. [26] Emissions from rail transportation have increased 20% since 1990, likely due to an increase in rail freight.[27]

Rail transportation offers a viable option for reducing GHG emissions due to the fuel efficiency of freight rail compared to heavy trucks and of passenger rail compared to vehicle and airplane travel. Intercity passenger rail travel emits an estimated 40% fewer kilograms of CO2 emissions per passenger mile than auto travel and less than half that of air travel.[28] For freight on a per ton-mile basis, the EPA estimates that a truck emits three times more NOx than a train, and six to 12 times more for other pollutants.

Federal policies and emissions standards are aimed at reducing emissions and developing solutions to meet enhanced air quality standards, with mobile source emission standards providing one of the leading sources of overall emission reduction (i.e., EPA Phase 4 Greenhouse Gas Standards for non-road vehicles). Emission standards continue to be refined for all modes of freight. The Wisconsin DNR and other state agencies continue to work closely with the EPA on emission standards and reduction programs. Emission reduction goals have been established with the EPA for Wisconsin with a primary focus on coal and natural gas-fired power plants.

While investments in all modes of rail can contribute to a system-wide reduction in greenhouse gas emissions, it can also cause localized increases. Passenger rail stations, freight loading

---

[24] *U.S. Environmental Protection Agency, "Greenhouse Gas Emissions > Overview of Greenhouse Gases."*
[25] *Wisconsin Department of Natural Resources, "Wisconsin Greenhouse Gas Emissions Inventory Report", August 2020*
[26] *Wisconsin Department of Natural Resources, "Wisconsin Greenhouse Gas Emissions Inventory Report", August 2020*
[27] *U.S. Environmental Protection Agency, "Fast Facts: U.S. Transportation Sector Greenhouse Gas Emissions 1990-2015." (July 2017).*
[28] *www.amtrak.com. Energy Efficiency and Environmental Benefits. Critical Link. 2007. Emissions factors based on calculations from the World Resources Institute and Carbonfund.org. Calculations assume single-occupant car and the added impact of high-altitude emissions for air.*

facilities, and intermodal truck-to-train facilities are all locations where prolonged idling may occur, leading to the accumulation of GHGs. Landscaping, facility design, locomotive upgrades, and other emerging technologies may alleviate some of these impacts.

Climate Change

Summary: *Wisconsin's climate is warming, and precipitation patterns are changing, which may impact rail infrastructure resiliency and the goods shipped by rail. Emission savings from passenger and freight rail make rail a viable option for combatting these changes to the climate.*

In 2019 Executive Order #52 was issued to create the Governor's Task Force on Climate Change. The Task Force released a report in 2020 outlining climate change-related impacts and solutions to those impacts in Wisconsin. [29]

Since the 1950's, Wisconsin's climate has changed in several ways. Wisconsin has gotten warmer, with average statewide temperatures increasing by 2.1°F.[30] Additionally, Wisconsin has gotten wetter. Statewide annual precipitation has increased 4.5 inches (15%), and extreme weather events such as floods and heatwaves have become more common.[31] These trends are projected to continue in the future.[32]

Greenhouse gas emissions, such as those emitted from the transportation sector, are a contributing cause of climate change.[33] However, investment in rail which encourages modal shifts to freight rail and passenger/commuter rail use is a feasible option to reduce statewide GHG emissions.

Changing temperatures and precipitation patterns have already impacted the agriculture and livestock sectors[34] and changing growing seasons may affect which crops can be grown successfully.[35] This has the potential to affect demand for freight rail, as the agriculture industry widely uses freight rail to transport goods. Rail transportation may also be impacted by changing

[29] *Wisconsin Initiative on Climate Change Impacts, "Report to the Governor's Task Force on Climate Change" (July 2020).*
[30] *Ibid.*
[31] *Ibid.*
[32] *Ibid.*
[33] *Intergovernmental Panel on Climate Change, "Climate Change 2014 Synthesis Report: Summary for Policymakers"*
[34] *U.S. Department of Agriculture: Agricultural Research Service, "Chapter 30: The Impact of Extreme Weather Events on Agriculture in the United States" (2011)*
[35] *U.S. Department of Agriculture: Northwest Climate Hub, "Applying Soil Health Management Systems to Reduce Climate and Weather Risks in the Northwest" (April 2019)*

precipitation patterns. More intense rainstorms and floods increase the risk of track displacement and bridge washouts. WisDOT works to promote resiliency in rail infrastructure improvements.

Economic Growth and Development

Summary: *Freight rail fosters economic growth and development by providing jobs and an efficient and cost-effective for some commodities means of transport of goods for manufacturers, distributors, and other businesses. Passenger and commuter rail promotes economic development by cost-effectively connecting workers to jobs and by fostering transit-oriented development.*

A safe and reliable transportation system that efficiently moves people and goods to their destinations is essential for the economic vitality of Wisconsin. Rail transportation is an important component of the overall transportation system, and rail improvements can encourage economic development in several ways, including:

- The cost-effective, safe, and timely movement of goods and people
- Connecting ports to the freight network
- Connecting economic centers to others, both in and out of the state
- Providing greater access to businesses
- Connecting workers to jobs
- Expanding labor pools and market areas
- Providing recreational, business, and personal travel options
- Providing a more fuel-efficient transportation option
- Reducing roadway congestion
- Reducing highway usage, which reduces crash totals and highway maintenance expenditures
- Bringing tourism to communities through rail corridor conversion to multimodal paths
- Encouraging efficient development patterns

Existing manufacturers, distributors, and retail businesses rely heavily on rail's ability to move certain kinds of goods efficiently and cost-effectively. In 2017, rail freight moved over $151 billion worth of goods, and that is expected to increase to over $411 billion by 2050.[36] Freight transportation investments can serve as catalysts for additional private investments. For example,

[36] *2017 IHS Transearch with 2050 Forecast*

the development of well-served distribution or intermodal facilities have spurred the development of similar or complementary investments in the surrounding area. Other freight rail investments that can spur economic development include track improvements to meet industry standards. Such improvements help diversify modal choice for industry and make the system more cost effective and efficient, and help the state retain existing businesses and attract new ones.

Rail enhancements also help create a more sustainable freight network. Shifting freight from truck to rail can help reduce roadway congestion and reduce emissions. Similarly, efforts to develop intermodal truck-to-train facilities in Wisconsin where intermodal containers might be gathered into blocks and hauled to either Minneapolis or Chicago rail centers could reduce the number of trucks on the state's highways. Potential benefits of this diversion include fuel and highway maintenance savings, and a reduction in automobile crashes.

WisDOT has worked with its partners to preserve rail corridors proposed for abandonment for future transportation use. Preservation of rail lines through programs such as rails-to-trails can enhance quality of life by increasing recreational choices and has economic benefits for communities through tourism.

Intercity passenger and commuter rail also have several economic benefits. Transit-oriented development around rail stations can be a catalyst for new economic activity that results in more jobs and higher property values.

More frequent and faster passenger trains provide increased mobility options for zero-vehicle households. Passenger and commuter rail typically improve access to jobs, goods, and services and reduces energy costs per passenger-mile compared to driving.

Communities and Cultural Resources

Summary: *Rail network enhancements can provide positive benefits to communities by promoting economic growth and providing mobility options. They may also create negative impacts to safety, quality of life, and community connectivity.*

The character and safety of communities and neighborhoods may be impacted by freight and passenger rail activities. Wisconsin is comprised of 72 counties, 1,249 towns, 190 cities, 412 villages, and 11 federally recognized tribal governments, each of which have diverse, unique characteristics depending on an area's history, population demographics, social resources, and the natural and built environments. Rail transportation impacts may be either positive or

negative, and may affect land use, access and mobility, quality of life, safety, employment, noise, and community character.

Land Use

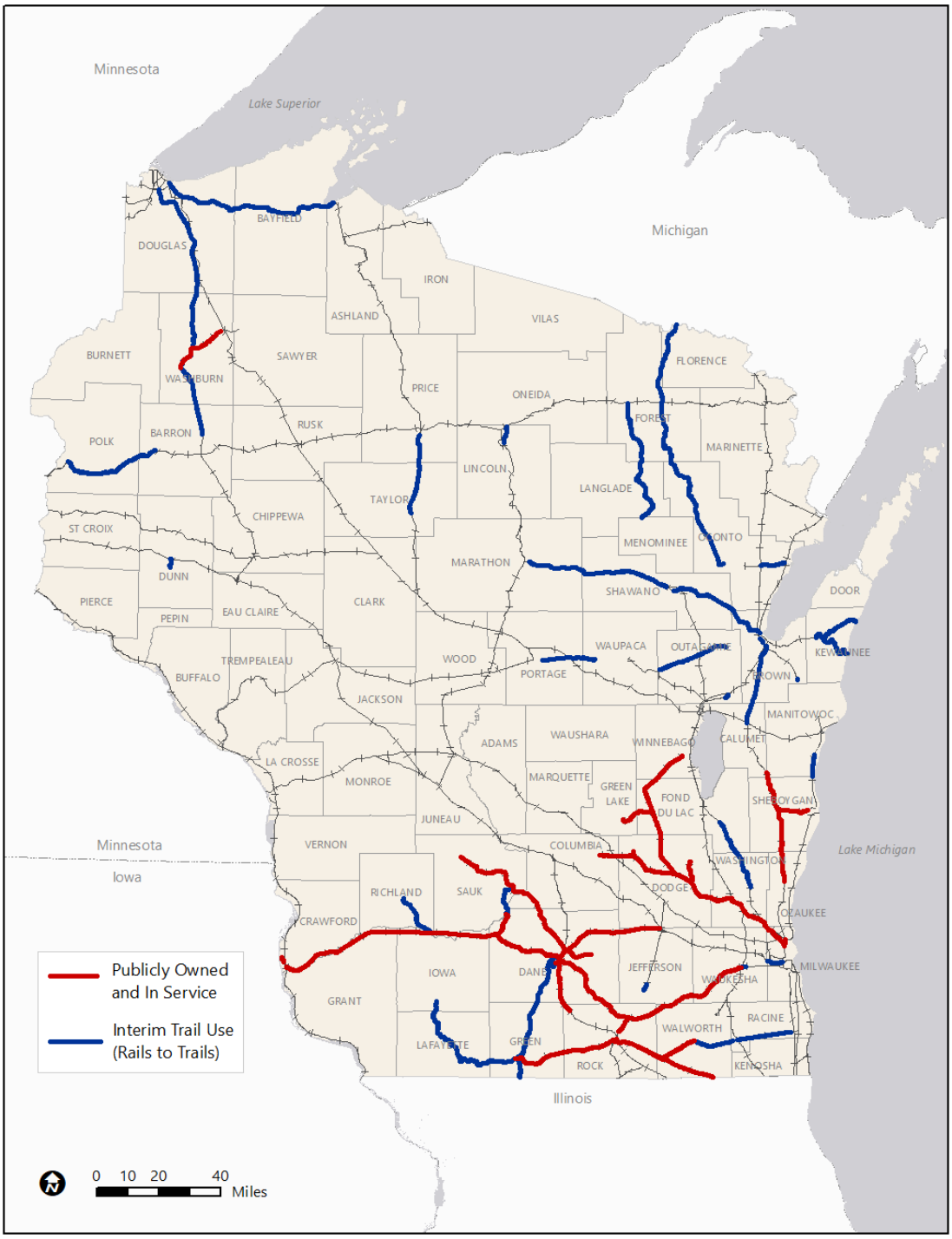
Summary: *Land use changes resulting from rail investment have been shown to increase mixed-use development, enhance multimodal connections, and reduce vehicle-miles traveled. Rail corridor preservation has created several recreational trails across the state.*

Enhancements to the rail network can encourage local land use decisions that make rail more accessible and encourage development around station locations. Mixed-use development combines residential, commercial, and retail uses into one area and is determined by local governments. Mixed-use development can lower regional vehicle-miles traveled (VMT) by co-locating where people work and live, and by creating higher density development that is more transit, bicycle, and pedestrian friendly.

Across the state, several hundred miles of low-density rail lines have been preserved so that future rail transportation options may be available (**Figure 8-2**). Some communities may have also invested in downtown economic development initiatives to highlight the link between the community and the trail. For instance, the Great Sauk State Trail has helped the Villages of Prairie du Sac and Sauk City invest millions of dollars attracting businesses and redeveloping parks and public space.[37]

[37] *University of Wisconsin – Madison/Cooperative Extension. Potential Economic Effects of The Gateway to The Driftless Trail System. January 2021.*

Figure 8-2: Publicly Owned Rail Corridors in Active Use and in Interim Trail Use 2022



Community Connectivity

Summary: *Rail operations and facilities can both facilitate and inhibit community connectivity. Rail crossings and safety features like gates and fences can act as a barrier to all forms of transportation, however rail improvements can also enhance freight and passenger access within and across communities.*

Barriers

Rail facilities that run through developed areas can act as barriers and disrupt communities. Historically, barriers to community connectivity from rail have disproportionately impacted zero-vehicle households, low-income populations, and racial and ethnic minorities in urban areas. Long, slow-moving freight trains can split communities for long periods of time and trigger delays in motor vehicle traffic and potentially disrupt emergency services. The presence of freight tracks that cannot be easily crossed or those with rough or angled crossings can also create safety issues and delays for pedestrians, bicyclists, and vehicles. In some cases, rail corridors may create barriers when no crossings are provided or when crossings are removed, disrupting community connectivity and cohesiveness. Rail crossing closures can also force motorists and non-motorists to find alternate routes unless mitigation measures like pedestrian bridges are provided. The lack of a rail crossing can create a safety concern, particularly in instances when crossing at an uncontrolled location is shorter or more convenient than finding an alternate route. For instance, children may choose to cross at an uncontrolled location to access their school, or someone may cross to access public recreation areas. On state-owned track, WisDOT can utilize fencing, lighting, gates, and barricades to discourage dangerous crossings.

Though rare, rail crossing closures are typically created to enhance safety and prevent dangerous crossings of rail track. The Office of the Commissioner of Railroads (OCR) has authority to order rail crossing closures. The public is given the opportunity to participate in public hearings and submit comments on crossing closures and types of safety controls. The public can also petition OCR for changes to crossings.

Connectivity

There are several positive effects of increased freight, passenger, and commuter rail services on community connectivity. Rail systems can foster concentrated economic development around activity centers like rail stations and create a denser network of community resources. Upgraded freight rail lines can also create economic opportunities. Access to a commuter or intercity passenger rail station can provide more mobility opportunities, especially for those historically

underserved by transportation options such as zero-vehicle households, those with disabilities, and racial and ethnic minorities.

WisDOT works with communities to facilitate multimodal connections. This includes designing and locating stations to accommodate transit and intercity buses, facilitation of interlining agreements between rail operator and intercity bus operators, coordinating with communities and transit agencies to increase service to stations, providing adequate bike facilities at all stations, and providing bike accommodations on trains.

To assist with assessing impacts and considering mitigation opportunities, WisDOT coordinates with OCR and impacted communities when a project is state led, participates in local comprehensive planning efforts when requested, and offers technical expertise where appropriate.

Governance Structures

Summary: *Special purpose forms of governance act as a community resource that can alleviate barriers to implementing commuter rail but require legislative approval.*

Political boundaries and governance structures may present obstacles to communities in providing transit services such as commuter rail. In some areas, coordination issues among transit services that cross county or municipal borders raises challenges. Coordination among local, regional, state, and the federal government is necessary to successfully implement commuter rail. Wisconsin currently does not have special purpose governments that can administer and fund transit systems on a region-wide basis. The formation of regional transit authorities and other governance structures are dependent upon direct Legislative approval.

Noise and Vibration

Summary: *Noise and vibration resulting from rail activities negatively affect quality of life, impact health, and decrease property values for those who live in proximity to rail facilities. Communities can establish quiet zones by petitioning the state Office of the Commissioner of Railroads.*

Rail noise is caused by train engines, locomotive mounted horns, ventilation systems, train cars, construction activities, track maintenance, and rail yard activities. Typically, sound levels caused by trains are measured relative to the existing ambient sound without a train present. Trains running during the day have less perceived noise than trains running at night, and maintenance activities occurring during the day, surrounded by other ambient noise, are perceived as less "noisy" than those at night.

When a train is present, sound impacts may be heard as far as 600 feet from the centerline of the rail line, and train noise increases with greater train frequencies and speeds. Dominant noises during intercity passenger rail speeds from zero (idling) to 80 miles per hour (mph) include propulsion noise of motors and cooling fans. Noise predominately radiates from the wheels and rails at 80 mph. The effects of noise on humans may include general disturbance and other secondary economic impacts. Train noise may also deter wildlife and impact habitat.

Vibration from rail traffic is the result of friction caused by track and wheel touch points, high engine throttle settings, and topography. Vibration may cause impacts to the environment, especially on properties near tracks or rail yards. Vibration can affect a greater number of people in population dense suburban and urban areas. Corridors with more trains and higher speed trains, and thus higher friction, may have more frequent episodes of earth vibration. In some areas damage to buildings or archaeological sites could occur if proper countermeasures are not incorporated in project design.

Train engineers are required by the Federal Railroad Administration (FRA) and 49 CFR Part 222 to sound locomotive horns at public roadway-railway crossings to warn the public and help to make crossings safer. FRA also provides an opportunity for communities to mitigate the effects of train horn noise by allowing communities to petition OCR to establish a quiet zone. Rail and roadway crossings in a quiet zone require active control devices like quadrant gates and signals paid for by the local government requesting the quiet zone. WisDOT provides information upon request to local governments looking to petition OCR to create quiet zones within their jurisdictions. The state had 92 quiet zones in August 2022.[38]

Increases to freight rail traffic, new intermodal truck-to-train facilities, and increased passenger rail service and speeds all have the potential to exacerbate noise and vibration impacts. WisDOT examines noise and vibration impacts, including potential mitigation strategies, during projects it is involved in.

Mitigation and design decisions influencing noise levels include whether the rail line is grade-separated from other infrastructure (including roadways), frequency of trains, the number of railroad crossings, surface choice for track, and locations of sound barriers. Sound barriers that utilize surrounding land masses absorb sound; these include ditches, embankments, and trenches. Walls act as independent structures and reflect more sound. While a barrier can

[38] *Federal Railroad Administration, "Quiet Zone Locations by City and State" FRAWebReport (1).pdf (dot.gov) (accessed August 24, 2022; report date 8/15/2022)*

mitigate noise for humans, the same barrier may limit community connectivity and cause habitat fragmentation for plants and wildlife. Noise impacts and potential mitigation measures are identified during WisDOT project-level environmental analysis.

Historic Preservation

Summary: *Many historic rail facilities and bridges have been preserved or repurposed. WisDOT complies with state and federal regulations to minimize impacts to archaeological and historic resources.*

The National Register of Historic Places and the Wisconsin Historical Society list historically significant places throughout Wisconsin. These lists include buildings, sites, structures, and other elements that are significant to national, state, or local history. Many parts of the rail system have historically been used for adaptive re-use or restoration, such as train depots or stations.

Additionally, the Wisconsin Historical Society maintains a database of recorded archaeological sites. Additional historic properties and archaeological sites exist that are not documented by the National Register of Historic Places and Wisconsin Historical Society.

Typically, impacts and mitigation efforts for historic resources are identified at the project level. During construction of new or expanded rail facilities, replacement of historic bridges, or abandonment of railroads, archaeological site impacts are identified with surveys that rediscover surviving remnants, habitat, or archeological items. WisDOT recognizes the importance of archeological sites and historic properties and will continue to comply with State Statute 44.40 and Section 106 of the National Historic Preservation Act of 1966, the federal framework for historic preservation and the preservation of archaeological resources.

Safety

Summary: *WisDOT works to improve safety at rail crossings through engineering, enforcement, and education.*

Safety is vitally important to WisDOT and all Wisconsin communities. While the expansion of rail service can provide a safer travel option compared to personal automobile travel, at-grade rail crossings, and activity around passenger and commuter rail stations come with safety concerns. In 2019, Wisconsin had 40 crashes involving trains, including two fatalities.[39]

[39] *Wisconsin Department of Transportation, "Final year-end crash statistics".*

Safety concerns exist for both motorized and non-motorized traffic. Firstly, rail activity can increase congestion at at-grade crossings. As wait times increase, the likelihood of motorists attempting to "beat the train" increases. At-grade rail crossings can also create safety concerns for bicycles, pedestrians, and those with mobility-related disabilities who rely on mobility aids. These concerns increase as freight and passenger rail service increase but may be mitigated through safety measures.

Projects have been implemented throughout the state to improve safety and reduce crossing conflicts. WisDOT funds crossings safety improvement projects through the Freight Railroad Infrastructure Improvement Program (FRIIP), the Freight Rail Preservation Program (FRPP), and the Highway Safety Improvement Program (HSIP). These programs help to improve rail crossing safety through engineering improvements, installation of warning devices, and elimination of hazards. Additionally, when rail lines are reactivated, WisDOT helps impacted communities with rail safety education by connecting them to Operation Lifesaver.

Per FRA requirements in 49 CFR § 234.11, WisDOT developed a Wisconsin Highway-Rail Grade Crossing Action Plan that helps WisDOT identify the locations of at-grade crossings with a history of safety incidents or that are at-risk of safety incidents.[40] WisDOT will also continue to work with OCR to ensure proper safety upgrades at rail crossings of roadways. See **Chapter 7 Rail Safety and Security** for more details about rail crossing safety in Wisconsin.

Native American Tribal Resources

Summary: *WisDOT recognizes the unique histories and cultural resources of each of Wisconsin's 11 federally recognized Native American Tribal nations. Rail impacts and benefits each Tribal nation differently.*

Wisconsin is home to 11 federally recognized Tribal nations, each with unique histories, demographics, environments, and cultural resources. Tribal lands make up approximately 1,025 square miles of the state. Currently, Tribal lands have few connections to freight or passenger rail services (**Figure 8-3**).

Wisconsin Executive Order 39 affirms the government-to-government relationship between Tribal nations and the State of Wisconsin. WisDOT has a responsibility and is committed to this unique relationship that respects tribal sovereignty and self-determination. WisDOT's 2019 Partnerships

[40] *Wisconsin Department of Transportation Railroad crossing improvements (wisconsindot.gov)*

Agreement continues to establish the framework of guiding principles and processes by which WisDOT, the Wisconsin Division-Federal Highway Administration (FHWA), and the Bureau of Indian Affairs (BIA) work collaboratively with the 11 federally recognized Tribal Governments of Wisconsin.[41]

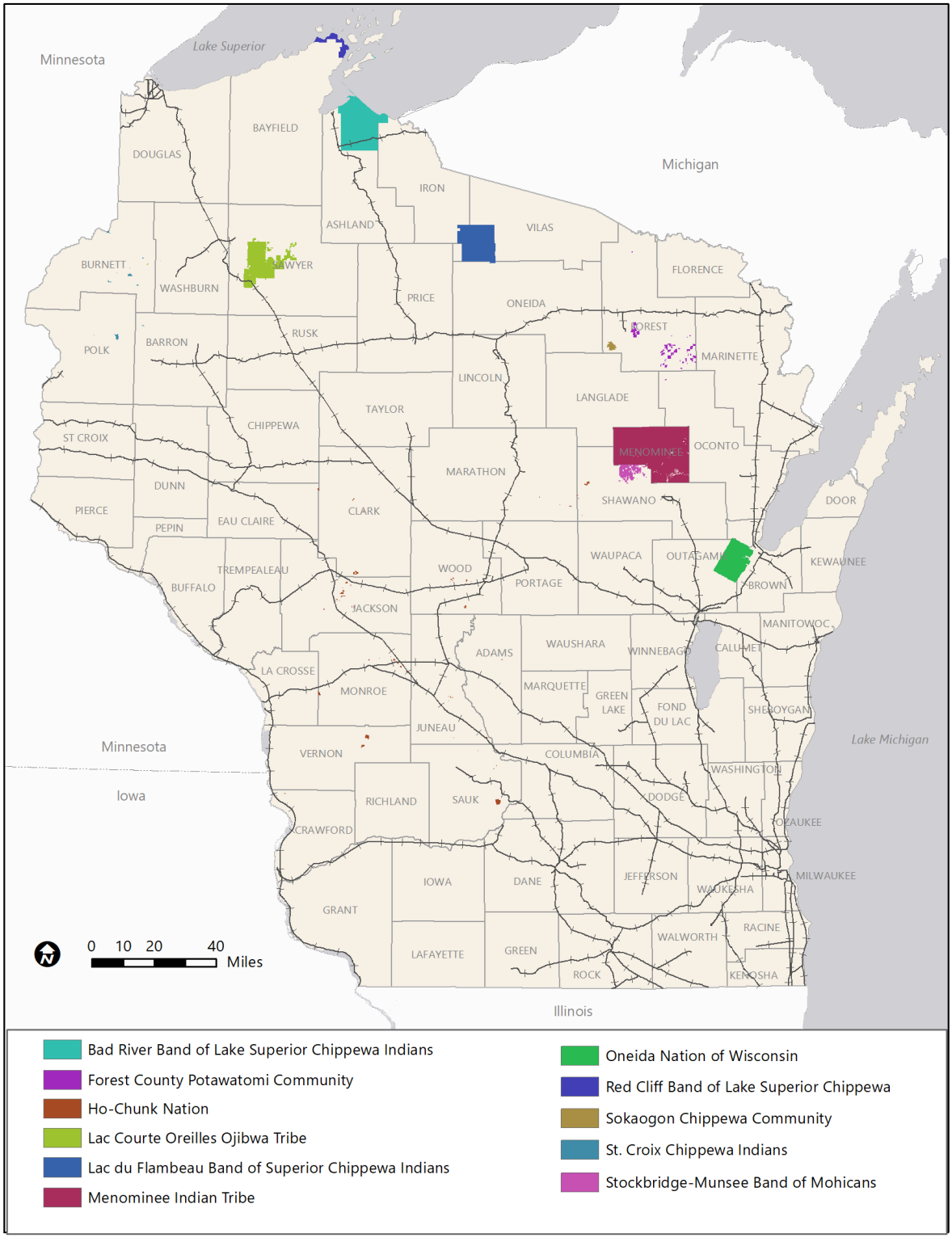
Freight rail service increases have the potential to affect Tribal nations which have freight rail on or proximate to their lands. Potential impacts include crossing safety, air pollution, and added noise and vibration. Improvements to passenger rail service and thruway bus stations could have positive or negative impacts such as environmental impacts, quality of life impacts, improved mobility options, and improved access to resources within and out of the state.

The presence of track may also provide an isolating benefit to areas with sensitive natural or cultural resources. For example, rail lines may offer protection of isolated forested areas by physically limiting access to those parcels.

Since each Tribal nation has individual social and natural resources important to their identity, each Tribal nation's unique cultures and relationships to the natural environment will be considered as part of project level impact analysis.

[41] *PARTNERSHIP AGREEMENT Between Wisconsin's Eleven Federally Recognized Tribes And Wisconsin Division - Federal Highway Administration; And Wisconsin Department of Transportation And Bureau of Indian Affairs 2019 (wisconsindot.gov)*

Figure 8-3: Locations of Native American Tribal Lands Relative to Rail Lines 2022



Sensitive Land and Water Resources

Summary: *Construction of new rail facilities in Wisconsin is rare and has fewer negative impacts than roadway construction. When it occurs, negative impacts to habitat and wildlife, the impairment of waterways, and loss of wetlands are mitigated or compensated for. WisDOT emphasizes early coordination and an integrative approach with partner agencies to manage natural resources.*

Wisconsin's natural resources and public lands are some of the state's most valuable assets. [42] WisDOT collaborates with the Wisconsin Department of Natural Resources (DNR) and other agencies to minimize or mitigate project impacts to natural resources. WisDOT emphasizes the preservation of protected resources and utilizes early coordination with partner agencies. A comprehensive approach to integrating transportation and environmental issues allows WisDOT to consider a wide range of environmental impacts and identifies feasible and cost-effective strategies to minimize or mitigate impacts.

The construction of new rail facilities has the potential to impact sensitive land and water resources. However, the development of new rail lines or stations is rare and tends to be localized to where facilities already exist. Rail transportation is far less disruptive to sensitive land and water resources than the construction, maintenance, and operations of roadways. The impacts discussed in the sections below represent potential impacts to environmental resources that may result from construction of new rail facilities.

Habitat and Species

Summary: *Rail corridors can fragment landscapes, creating less suitable habitat for species and limiting the movement of species from one area to another. Disturbed land may also encourage the spread of invasive species. Rail corridors can, however, provide suitable habitat for rare species and important pollinators.*

Wisconsin is home to a diverse array of habitats and species, including over 330 rare plant species[43] and over 150 endangered and threatened species.[44] While construction of new rail facilities is uncommon, regular maintenance and operations activities or new facilities can impact

[42] *Public lands include local parks, County and State Parks, State Natural Areas, County and State forests, National Forests, and National Wildlife Refuges.*
[43] *Wisconsin Department of Natural Resources, "Wisconsin Natural Heritage Inventory Working List". (January 2021).*
[44] *Wisconsin Department of Natural Resources, "Wisconsin Endangered and Threatened Species Laws & List." (June 2021).*

habitat. Impacts from rail may include the destruction, fragmentation, or degradation of habitat areas, resulting in less suitable habitat. Impacts and potential mitigation strategies are identified during WisDOT project-level environmental review.

In some cases, rail right-of-way can provide valuable habitat to rare species. Natural communities such as remnants of prairie ecosystems which may provide habitat for rare species, can occur along rail corridors. Rail corridors also play an important role in providing habitat for pollinators and in connecting a larger system of pollinator habitat. WisDOT works with partner agencies to promote native species and pollinator habitat through altered mowing practices, invasive species management, and active habitat restoration.

Disturbed land from rail impacts can sometimes encourage the spread of invasive species, which thrive on disturbed land and outcompete native species. Invasive species can also impact recreational opportunities, public health, and cause economic harm by increasing maintenance costs and damaging infrastructure. Vegetation along rail corridors is intended to be low maintenance, which can also promote invasive species, but spraying and mowing are done to help reduce this risk. Some of the negative impacts associated with invasive species are addressed in the Invasive Species Best Management Practices for Transportation and Utility Rights-of-Way.[45] The activities apply to utility and transportation corridor construction as well as maintenance activities. The report includes best management practices for soil disturbance, vegetation management and inspection/monitoring transport of materials, re-vegetation, and landscaping. Best management practice examples include surveying, locating, and documenting invasive species infestations prior to implementing activities, and selecting noninvasive or native species for re-vegetation and landscaping activities. Further, rail line abandonments can help mitigate habitat losses because these lands are often maintained but may remain without active management.

Wisconsin state law prohibits the taking, transportation, possession, or exportation of endangered or threatened species as established per Wisconsin State Statute 29.604 and administrative Rule Chapter NR 27. DNR may allow an incidental take of endangered or threatened species under certain circumstances through issuance of an Incidental Take Permit/Authorization (ITP/A). An ITP/A may only be issued if the action minimizes and mitigates for impacts to the species and does not threaten the survival of the species. During project-level

[45] *Wisconsin Council on Forestry, Invasive Species Best Management Practices for Transportation and Utility Rights-of-Way, (Version: January 6, 2010), pg. 4.*

environmental review, WisDOT works with partners to consider mitigation measures such as restricting the timing of disruptive activities during a nesting period, utilizing biodegradable erosion control materials, installing exclusion fencing, and restoring or enhancing habitat.

The presence of rail corridors and facilities can also act as a barrier to the movement of a species from one habitat to another. Wildlife crossings can be factored into facility design to accommodate migratory movements, such as fish passages at culverts and bridges, and jump-outs or escape routes for small wildlife like turtles, salamanders, and snakes trapped between rails.

For both passenger and freight rail, an increase in service increases the potential risk for habitat and species. More frequent trains increase the likelihood of wildlife collisions and the spread of invasive species. New rail facilities, including stations and rail yards, may degrade or eliminate habitat. WisDOT will continue to work with partner agencies to avoid, minimize, and compensate for habitat and species impacts through the project development process.

Waterways and Water Quality

Summary: *Erosion from construction activities, the transportation and storage of hazardous materials via rail, and rail bridges can all impact water quality.*

Water resources are greatly important to Wisconsin's identity. Wisconsin has more than 15,000 lakes and over 12,600 rivers and streams that collectively span 84,000 miles[46] over 330 watersheds and 32 basins[47] (**Figure 8-4**). Navigable waterways play an important role in transportation, manufacturing, and commerce. These water bodies are also critical for the state's water-dependent recreation and tourism industries, as well as drinking and irrigation. Protecting Wisconsin's sensitive water resources is vital.

Every two years, the Wisconsin DNR is required by the Clean Water Act to publish a list of all waterways which do not meet surface water quality standards established by DNR or EPA. In 2020, DNR listed 1,573 waterbodies as impaired[48] and 571 as restoration.[49] 139 waterways were added to the impairment list and 115 were delisted from the previous listing in 2018.[50]

---

[46] *Wisconsin Department of Natural Resources, "River Facts and Resources."*
[47] *Wisconsin Department of Natural Resources, "Watersheds and Basins."*
[48] *Impaired waterways are those which are listed and do not have an active restoration plan in place*
[49] *Restoration waterways are those which are listed but have an active restoration plan in place*
[50] *Wisconsin Department of Natural Resources, "FINAL 2020 Impaired Waters and Restoration Waters Lists" (2020).*

Rail facility construction may affect water resources by:

- Filling or diverting ponds or wetlands (changing drainage patterns)
- Reducing groundwater absorption through compression of surface soils
- Affecting the navigability of waterways
- Affecting access to recreational resources

Rail construction or maintenance activities can disturb soils. Storage at rail yards requires storm water runoff management to avoid negative impacts of erosion and sedimentation. Rail bridges and stream crossings also have the potential to act as pinch points and impede the natural flow of streams and rivers, increasing risk of flooding upstream. Wisconsin Statute 88.87(2)(a) requires the department to ensure that when building and maintaining any railroad grade in or across a waterway which may range from marshes to drainage courses), it shall not impede the general flow of the surface water or stream.

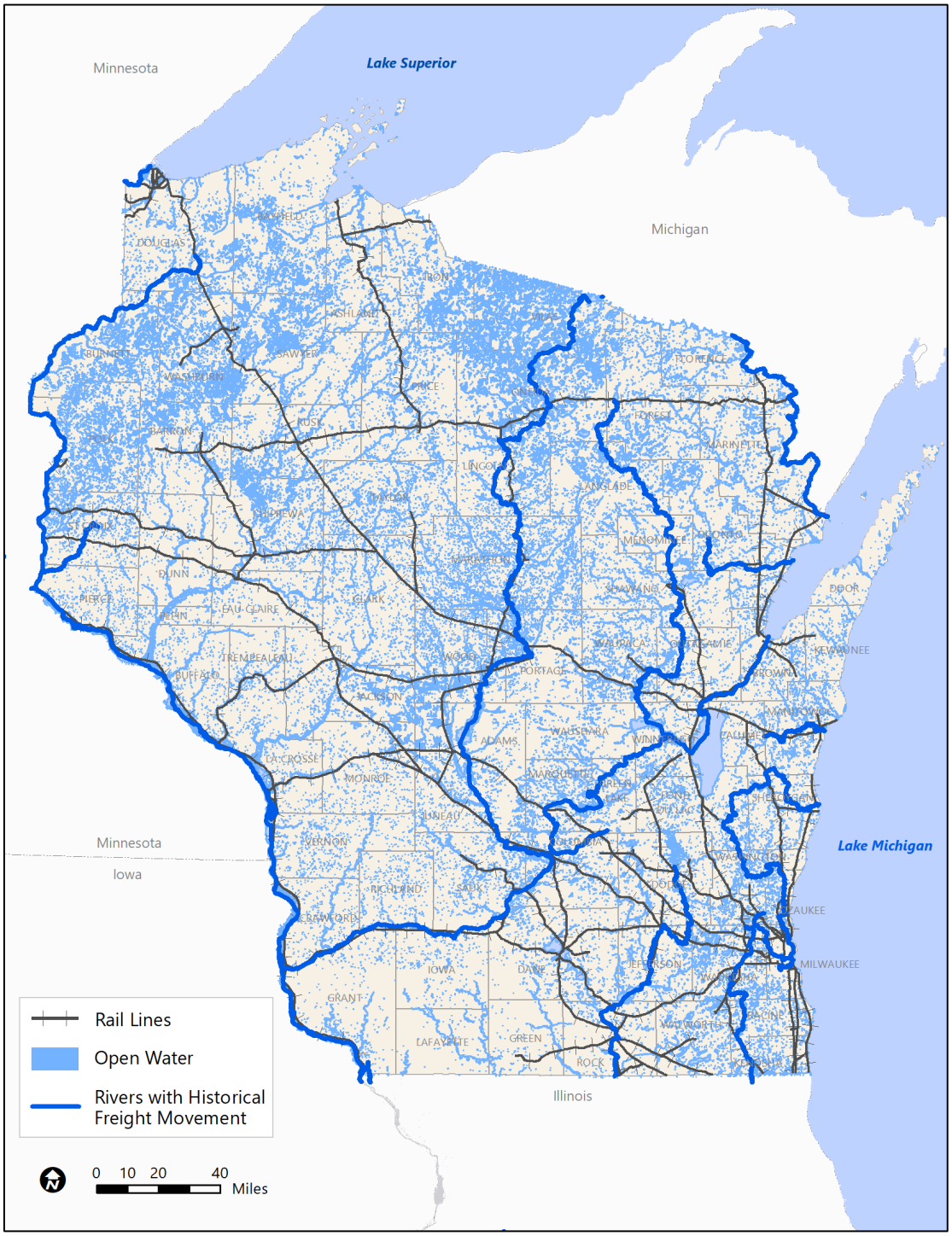
Hazardous materials are often transported by rail and can also pose a risk to aquatic ecosystems and waterways. During rail operations, hazardous materials can runoff into waterways or leach into the groundwater through small leaks at switching yards or large spills from a derailment. However, transporting hazardous material is far safer by rail than by truck. Railroads have 10 times fewer hazmat accidents compared to trucks (with roughly equal hazmat ton-mileage between the two modes), and hazmat train accidents are down 64% since 2000.[51]

Additionally, development patterns accompanying transportation system changes may result in indirect impacts to water supplies or the demand for water.

For rail projects which are federally- or state-funded, WisDOT investigates potential waterway impacts at the project-level through an environmental analysis or an environmental impact statement and has policies in place to mitigate impacts to water resources.

[51] *American Association of Railroads, "Fact Sheet: Freight Railroads Move Hazardous Materials Safely." (October 2020)*

Figure 8-4: Wisconsin Waterways Relative to Rail Lines 2022



Wetlands

Summary: *Wetlands are important habitats often found near rail lines. WisDOT mitigates unavoidable impacts to wetlands caused by the state's transportation projects.*

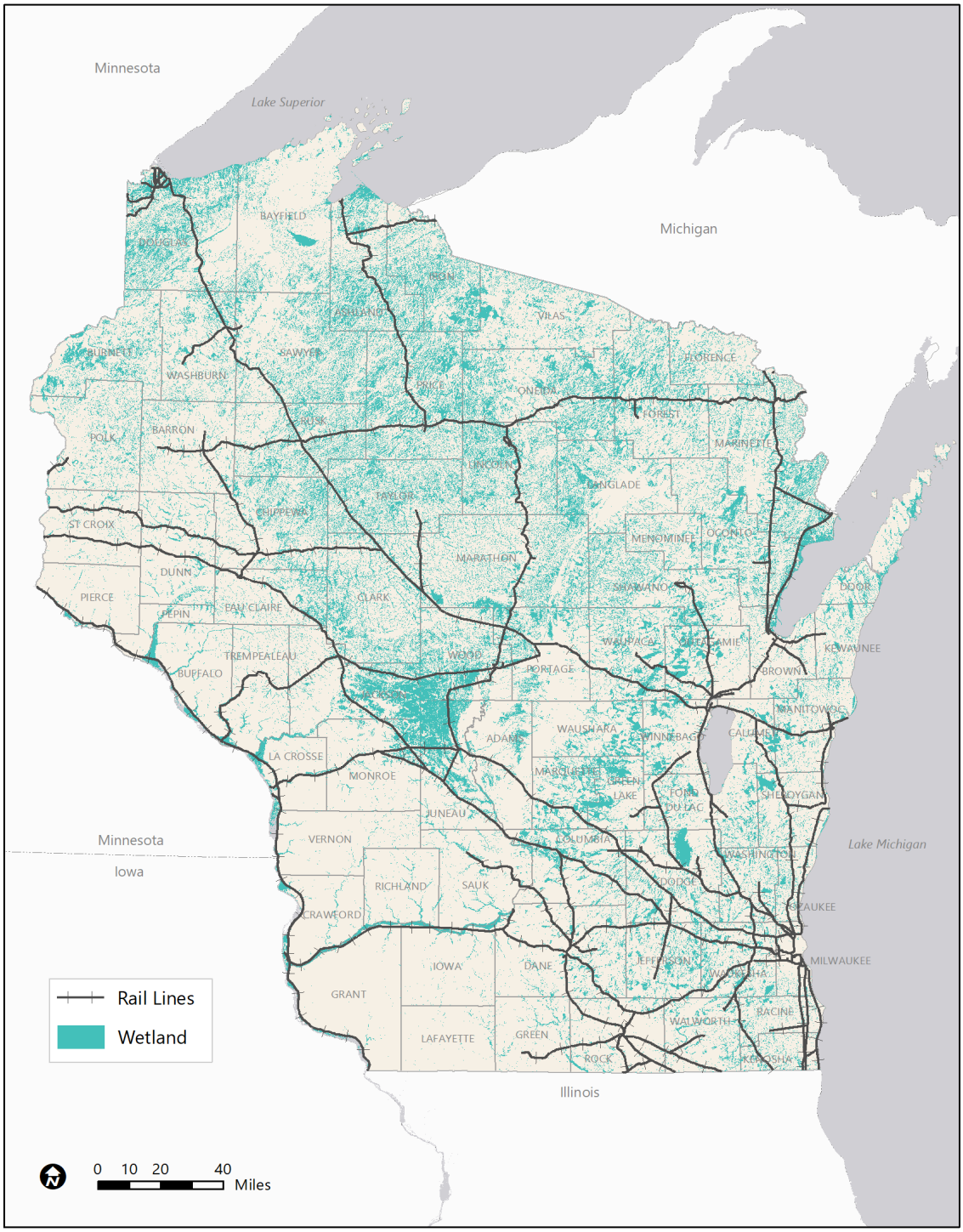
Wetlands are ecosystems where water covers the soil or is present at or near the surface of the soil for varying periods of time during the year. Wetlands provide valuable habitat for both aquatic and terrestrial species, and 75% of all Wisconsin wildlife species depend on wetlands.[52] They also provide numerous benefits for communities such as flood control, shoreline erosion control, water quality improvement, recreation opportunities, and more. Currently, Wisconsin has over 5 million acres of wetlands, making up 15% of the state's total area.[53] However, Wisconsin has lost nearly half of its historic wetlands due to fill from development and conversion to agriculture.

Rail lines tend to be sited in flat topography and are often close to wetlands (**Figure 8-5**). Track construction activities can impact multiple acres of wetlands for each one mile of track construction. Unavoidable impacts to wetlands because of WisDOT-directed rail projects are mitigated according to the Wetland Mitigation Banking Technical Guideline.[54] These guidelines were developed and implemented through collaboration with various state and federal agencies, the overall goal of which is to minimize harm and mitigate impacts to wetlands because of transportation projects. Measures to avoid and minimize wetland impacts include reducing the corridor footprint, modifying the alignment, or selecting an alternative route. Compensatory mitigation is required for all unavoidable wetland losses. Restoration of a former wetland is the preferred method; however, compensation may also include wetland creation, enhancement, preservation, and restoration/preservation of vegetative buffers. A combination of mitigation measures is typically proposed. Private railroad companies are required to follow certain federal environmental laws in their activities. WisDOT continues to adhere to 'no net loss' wetland strategies and supports the policies of the United States Army Corps of Engineers and the Wisconsin Department of Natural Resources.

---

[52] *Wisconsin Wetlands Association, "Wetlands 101". https://www.wisconsinwetlands.org/learn/about-wetlands/wetlands-101/*
[53] *Wisconsin Department of Natural Resources, "Wisconsin Wetland Inventory."*
[54] *Environmental Services - Wetland mitigation banking technical guideline (wisconsindot.gov)*

Figure 8-5: Wisconsin Wetlands Relative to Rail Lines 2021



Public Lands

Summary: *Rail corridors can sometimes act as a barrier to access public lands, but rails-to-trails corridors also provide an important interim recreational use for the public.*

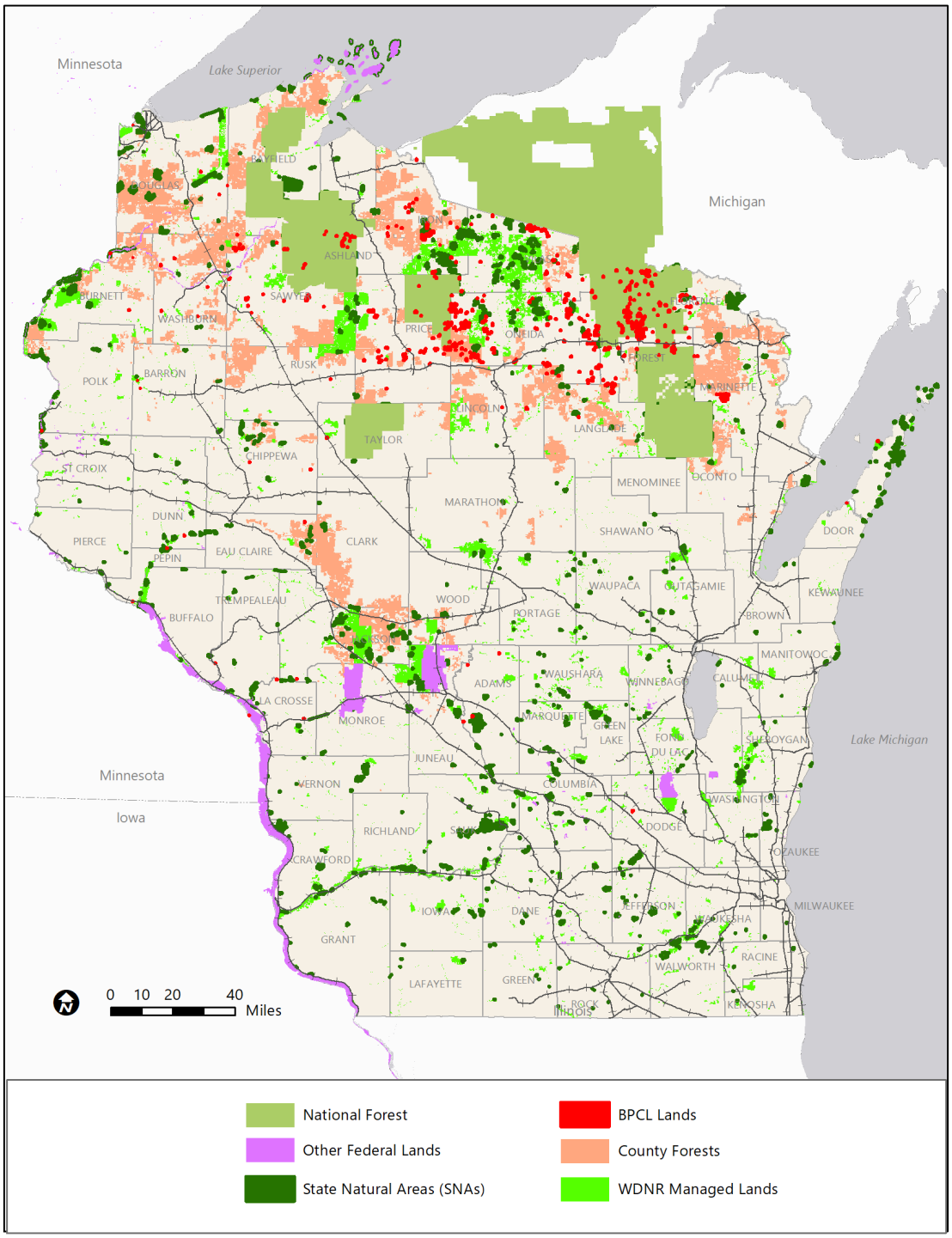
Wisconsin's public lands (**Figure 8-6**) play an invaluable role in providing the state with recreation and conservation opportunities. These public lands include over 2.4 million acres of county forests, 2 million acres of national forests, 0.5 million acres of US Fish and Wildlife Service lands, and 1.5 million acres of DNR land (i.e., state parks, trails, natural areas, wildlife areas, and forests). Rail projects have the potential to impact public lands, however, these impacts are mitigated at the project level in accordance with federal and state regulations.

Abandoned rail corridors have the potential to provide valuable recreation opportunities if they become rails-to-trails corridors. Rails-to-trails corridors are an interim use of a rail corridor that has been filed for abandonment but which the railroad has agreed to allow temporary trail use. While the railroad can remove the rails, ties, and other rail material, the corridor must be treated as an active railroad corridor in interim trail use. By remaining an active rail line, the railroad corridor stays intact without impact resulting from the quality of title to the underlying property. No reversionary interests to the property come into play. There is no regulation as to the amount of time the trail interim use may exist, however, it is understood that rail service may be reestablished at any time if needed. The WisDOT Guide to Railroad Abandonments in Wisconsin lays out the process to petition to create a rails-to-trails corridor and the process for reactivating a rails-to-trails back to rail transportation use.[55]

While rail plays a role in connecting residents and visitors to recreation opportunities, it can also act as a barrier. Unsafe crossings of rail facilities to access public lands for recreation is a known safety issue. WisDOT and OCR have mutual interest in supporting the current state law that prohibits people from crossing the tracks at any place that isn't a designated crossing. On state-owned rail corridors, WisDOT can utilize fencing, lighting, gates, and barricades to discourage dangerous crossings.

[55] *WisDOT Guide to Railroad Abandonments in Wisconsin (wisconsindot.gov)*

Figure 8-6: County, State, and Federal Public Lands Relative to Rail Lines 2021



Agriculture

Summary: *Wisconsin's agricultural system relies on rail for the transport of goods. Rail projects are not typically a major contributor to the loss of farmland.*

In 2020, agriculture was a $104.8 billion industry in Wisconsin that provided 435,700 jobs within the state.[56] Freight rail is vital for Wisconsin's agriculture industry, as many producers ship products using rail.

In 2020, 14.3 million acres, over 40%, of Wisconsin's land area was in operation as farmland.[57] Between 2016 and 2020, the state lost approximately 100,000 acres of farmland to conversion to other uses.[58] The continued preservation of farmland is key to the success of the agricultural industry in Wisconsin, particularly preservation of prime farmland, which has the best combination of physical and chemical characteristics. Prime farmland is found all throughout the state and overlaps with the rail system in many locations (**Figure 8-7**). Rail projects typically are not significant contributors to loss of farmland.

The development of new intermodal truck-to-train facilities has potential to result in the loss of prime agricultural land through development. Proposed intercity passenger rail and commuter rail is likely to use the same right of way as existing rail lines, with perhaps some additional sidings or double track which may result in minor impacts to adjacent prime agricultural land. WisDOT will work to avoid, minimize, and compensate for unavoidable impacts during the project development process.

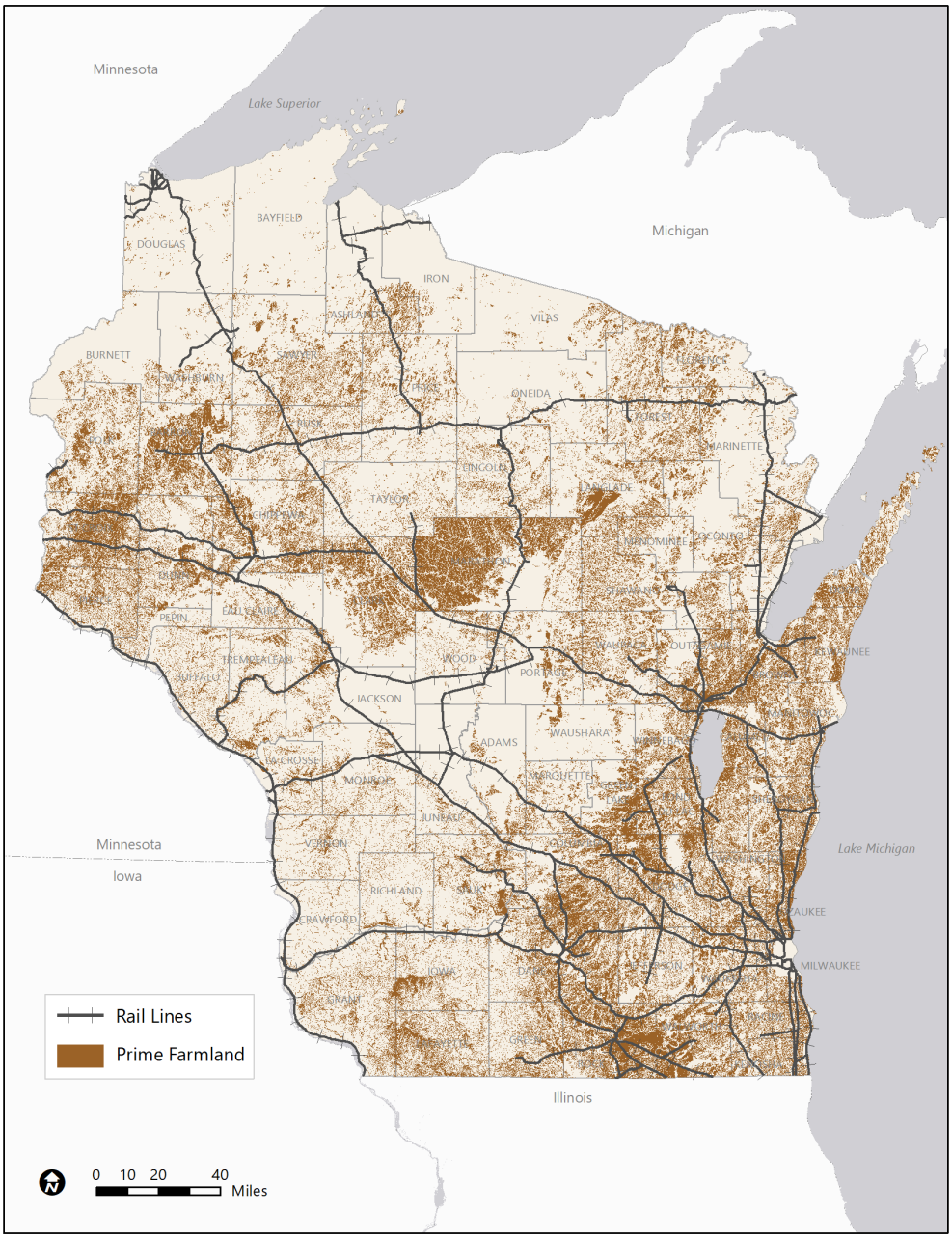
Passenger and commuter rail may provide benefits to agricultural lands. Passenger rail is often an important part of transit-oriented development, which encourages denser urban forms. The promotion of more efficient development around an urban center and densification reduces pressure for farmland conversion through urban sprawl.

WisDOT will continue to consider the importance of agriculture lands when making project-level decisions and will continue to focus efforts on minimizing, to the extent possible, the negative impacts on agriculture. WisDOT will continue to work with the Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) and the Natural Resource Conservation Service to assess impacts of rail projects on agricultural lands. In addition, WisDOT will continue

[56] *Wisconsin Department of Agriculture, Trade, and Consumer Protection, "Wisconsin Agriculture Statistics."*
[57] *U.S. Department of Agriculture, "2020 State Agriculture Overview: Wisconsin."*
[58] *U.S. Department of Agriculture, National Agricultural Statistics Service, "2021 Wisconsin Agricultural Statistics" (2021).*

to preserve and enhance a positive land use and transportation relationship and address the direct land use effects of transportation.

Figure 8-7: Prime Farmlands and Rail Lines 2021



Indirect and Cumulative Effects

Indirect Effects

Summary: *The development and operations of the rail network and other rail facilities can indirectly impact the human and natural environments by facilitating urban development, land use changes, and changes to transportation behavior.*

Environmental impacts from rail projects can have a wide variety of results, including direct and indirect effects. Direct effects to the environment are those caused by an action and occur at the same place and time as that action.[59] For example, water quality impairment from erosion during rail construction or loss of wetlands are considered direct effects.

Indirect effects are caused by an action and are later in time or farther removed in distance but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.[60] Indirect effects of rail projects may be the result of decisions made in response to the direct impact. These decisions may be made by others, such as local governments or developers. For example, private investments made in the area surrounding a new intermodal truck-to-train facility would be considered an indirect effect resulting from the development of the intermodal facility. These indirect effects may:

- Be viewed as positive, negative, or both depending on the specific event
- Occur later in time, or beyond the project right of way, but can be reasonably foreseeable
- Include changes in land use, population density, growth rate, economic development, and the rate of development

Often, development that is an indirect effect from rail projects is in the form of redevelopment or in-fill development, which are both promoted under the state's comprehensive planning law.[61] For example, intercity passenger rail service may spur redevelopment activities near stations, or a station itself may be developed using in-fill development practices. Similarly, development may

[59] *40 CFR § 1508.8*
[60] *Ibid.*
[61] *Wis. Stat. § 66.1001*

increase or occur around a new rail spur or rail yard as area shippers and businesses seek efficient access to freight rail operations.

Indirect effects from rail projects alone are unlikely to spur development. Improved transportation access, improved travel times, and increased property values from rail projects can influence community development, but other factors also need to be present. For instance, the availability of sewer and water services, market demand, and local support for development also play a role.

Another indirect effect that may result from intercity passenger and commuter rail projects is induced travel[62] or diverted travel.[63] For example, intercity passenger rail service may allow a non-driver to take a trip that was previously unavailable (induced travel), or it may divert trips previously taken in a personal vehicle (diverted travel). The amount of induced or diverted travel is influenced by many factors such as travel cost, travel time, access, and ease of use.

All rail projects have the potential to have indirect effects, including:

- Funding assistance for local agencies and businesses for freight rail improvements
- Funding track and bridge upgrades on publicly owned rail corridors
- Improving safety conditions at railway-roadway crossings
- Increased investment in intercity passenger and commuter rail
- Increased investment in thruway bus stations and routes connecting to passenger rail

The indirect effects associated rail projects are often beyond WisDOT's control. While WisDOT works with local governments and private entities to assess potential impacts on the transportation system, the local government or private entity makes the final decision regarding the amount and type of development that occurs within their municipal boundaries.

Cumulative Effects

Summary: *The resources at greatest risk from rail-related cumulative effects are water quality, wetlands, endangered species, agriculture, air quality, and community resources.*

[62] *Induced travel is new trips that were not previously taken which occurs from a change in transportation service, resulting in an increase in daily travel*

[63] *Diverted travel is trips that shift from one service or mode to another after a change in transportation service*

Cumulative effects are impacts on the environment that result from the incremental impacts of an action when added to other past, present, and reasonably foreseeable future actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time, and regardless of who the party responsible for the action is (state or federal agency, private business, etc.).[64]

Transportation project impacts are just one of many categories of impact that can contribute to cumulative effects. Other factors include additional transportation and infrastructure developments, as well as all public and private development projects. For this reason, cumulative effects differ based on individual communities and environmental resources.

Cumulative effects are the result of combined actions of various agencies and private entities. WisDOT is responsible for mitigating the effects of WisDOT projects, but not responsible for effects from non-WisDOT actions. However, WisDOT provides information on potential cumulative effects and will work with local agencies and other interested stakeholders to suggest potential avoidance, minimization, and mitigation strategies for those effects.

Based on the potential direct and indirect effects described previously in this chapter, the resources with the greatest potential for negative cumulative impacts are:

- Water Quality
- Wetlands
- Endangered and threatened species
- Agriculture
- Air Quality
- Community resources

WisDOT Environmental References and Resources

Sometimes, transportation projects must impact the environment. During the development of rail projects, WisDOT ensures that environmental impacts are avoided whenever possible. When impacts are unavoidable, the goal is to minimize the impacts, and where possible, and compensate for the impacts. WisDOT considers the following factors during state-wide planning and rail project development:

- Agriculture

[64] *40 CFR § 1508.7*

- Air quality
- Community and residential resources
- Cultural Resources (archaeology, historic preservation, and Tribal)
- Endangered and threatened species
- Environmental justice (minority and low-income populations)
- Erosion control and drainage
- Habitat
- Hazardous materials
- Indirect and cumulative impacts
- Noise
- Public involvement
- Public lands
- Stormwater management
- Wetlands and waterways
- Visual Impacts

Summary of Coordination Efforts and Plan Comparison

Coordination Efforts

Various state and federal regulations require that states develop their long-range statewide transportation plans in coordination with federal, state, tribal, and local agencies which are responsible for land use management, natural resources, environmental protection, conservation, and historic preservation.

In accordance with these requirements, during the Wisconsin Rail Plan 2050 development process WisDOT conducted an environmental resource agency and tribal coordination meeting on February 23, 2021.

The Tribes and agencies invited to the meeting are shown below:

- Bad River Band of Lake Superior Chippewa Indians

- Federal Highway Administration
- Federal Emergency Management Agency
- Federal Motor Carrier Safety Administration
- Federal Transit Administration
- Forest County Potawatomi Community
- Ho-Chunk Nation
- Lac Courte Oreilles Band of Lake Superior Indians
- Lac Du Flambeau Band of Lake Superior Indians
- Menominee Indian Tribe of Wisconsin
- Oneida Nation
- Public Service Commission of Wisconsin
- Red Cliff Band of Lake Superior Indians
- Sokaogon Chippewa Community
- St. Croix Band of Lake Superior Chippewa Indians
- Stockbridge-Munsee Band of Mohican Indians
- WI Dept. of Administration
- WI Dept. of Agriculture, Trade, and Consumer Protection
- WI Dept. of Health Services
- WI Dept. of Military Affairs
- WI Dept. of Natural Resources
- WI Dept. of Transportation
- WI Economic Development Corporation
- WI State Historical Society
- U.S. Army Corps of Engineers
- U.S. Bureau of Indian Affairs
- U.S. Bureau of Land Management

- U.S. Coast Guard
- U.S. Dept. of Housing and Urban Development
- U.S. Dept. of Transportation – Maritime Administration
- U.S. Dept. of Transportation – Pipeline and Hazardous Materials Safety Administration
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- U.S. Forest Service
- U.S. National Park Service
- U.S. Natural Resources Conservation Service

Meeting materials, attendees, and the feedback received are provided in **Chapter 15 Public Involvement Details.**

Chapter 9 Equity Context

The rail transportation system is a critical component of the state's overall transportation system. People and businesses rely on it for travel and to transport goods. Being near to the rail transportation system can be beneficial to communities by providing opportunities for economic development and by providing increased mobility and transportation options. Living near an active rail system also can have negative impacts such as increased noise and vibration, reduced air quality, safety concerns, and the creation of barriers to community connectivity.

This chapter includes:

- An explanation of how the chapter considers equity
- Statewide overview of where equity demographic groups live in the state
- Overview of where equity demographic groups live in each region of the state
- Statewide intercity passenger rail buffer analysis
- Equity context of WisDOT's rail programs, including crossings and accessibility of intercity passenger rail stations

An equity review seeks to understand how decision-making and actions taken affect mobility, access to transportation options, social and economic opportunities, and the distribution of environmental impacts for all community members. Equity in transportation considers the needs of all populations being served by the transportation system, particularly populations that are historically underserved. Several federal laws, regulations, and policies help to define which populations to consider in various equity analyses. Executive Order 12898 on Environmental Justice (EJ) requires recipients of federal funds to identify and address disproportionately high and adverse human health or environmental effects on racial or ethnic minority and low-income populations. Additionally, Title VI of the Civil Rights Act of 1964 prohibits discrimination based on race, color, and national origin in programs and activities receiving Federal financial assistance. Executive Order 12898 on Environmental Justice and Title VI are just two components of an equity review, and other components may vary based on the scale and scope of a project or study.

This system-plan level equity discussion is different from a project-level one.

Project-level analyses are primarily driven by federal and state laws. The project level reviews include a detailed analysis of the project scope, limits, and potential impacts to the physical and human environment. Project and corridor level equity analyses typically include quantitative

analyses using percentages and numbers within various measured distances. State long-range transportation plans have a different focus than project or corridor level studies. Please see **Technical Appendix: Equity Reference Maps and Analysis Methodology** for general information about project and study level equity and related analyses such as Title VI and environmental justice.

The purpose of this Wisconsin Rail Plan 2050 (WRP 2050) equity-focused discussion of demographic groups living near rail infrastructure is to inform later discussions during corridor study, project, and program-levels. This system-wide discussion considers a cumulative, big picture view that does not serve the same purpose of analyses at the project, corridor, and program-levels. WRP 2050 looks at rail transportation as a system that may affect the state in different ways. It gives a perspective on the cumulative statewide benefits and impacts of rail that may not be visible at a project or corridor study level. It stresses a qualitative description and discussion of existing conditions, rather than a quantitative analysis that will be conducted during project and corridor level studies.

For this equity-focused discussion, specific demographic groups were reviewed because they are Environmental Justice populations identified in Executive Order 12898, protected classes under Title VI of the Civil Rights Act of 1964, and other traditionally underserved populations that benefit from increased transportation options.

The range of demographic groups considered in this equity-focused discussion is tailored to the scope and scale of WRP 2050, and the range of demographic groups considered may be modified during project-level analyses and other WisDOT initiatives. This chapter considers:

- Racial and ethnic minority populations
- Low-income populations
- Youth (age 9 and under)
- Seniors (age 65 and older)
- People with disabilities
- Zero-vehicle households

Together these groups will be referred to as equity demographic groups.

This chapter is one piece of the overall environmental evaluation for the WRP 2050. **Chapter 8 Environmental Context** discusses potential environmental impacts and benefits associated with

Wisconsin's rail system and **Chapter 11 System-Plan Environmental Evaluation (SEE)** compares how these impacts and benefits may change if the plan's policies are implemented fully.

How the Wisconsin Rail Plan 2050 Considers Equity

This equity-focused discussion focuses on select demographic groups who live in the census blocks or tracks adjacent to existing rail infrastructure: race/ethnicity, income, age, disability status, and access to a vehicle. No specific distance measure is used in this chapter's analysis to allow the discussion to focus on the statewide perspective not captured at a site-specific level.

The equity-focused discussion that follows starts with a state-wide overview of rail infrastructure and:

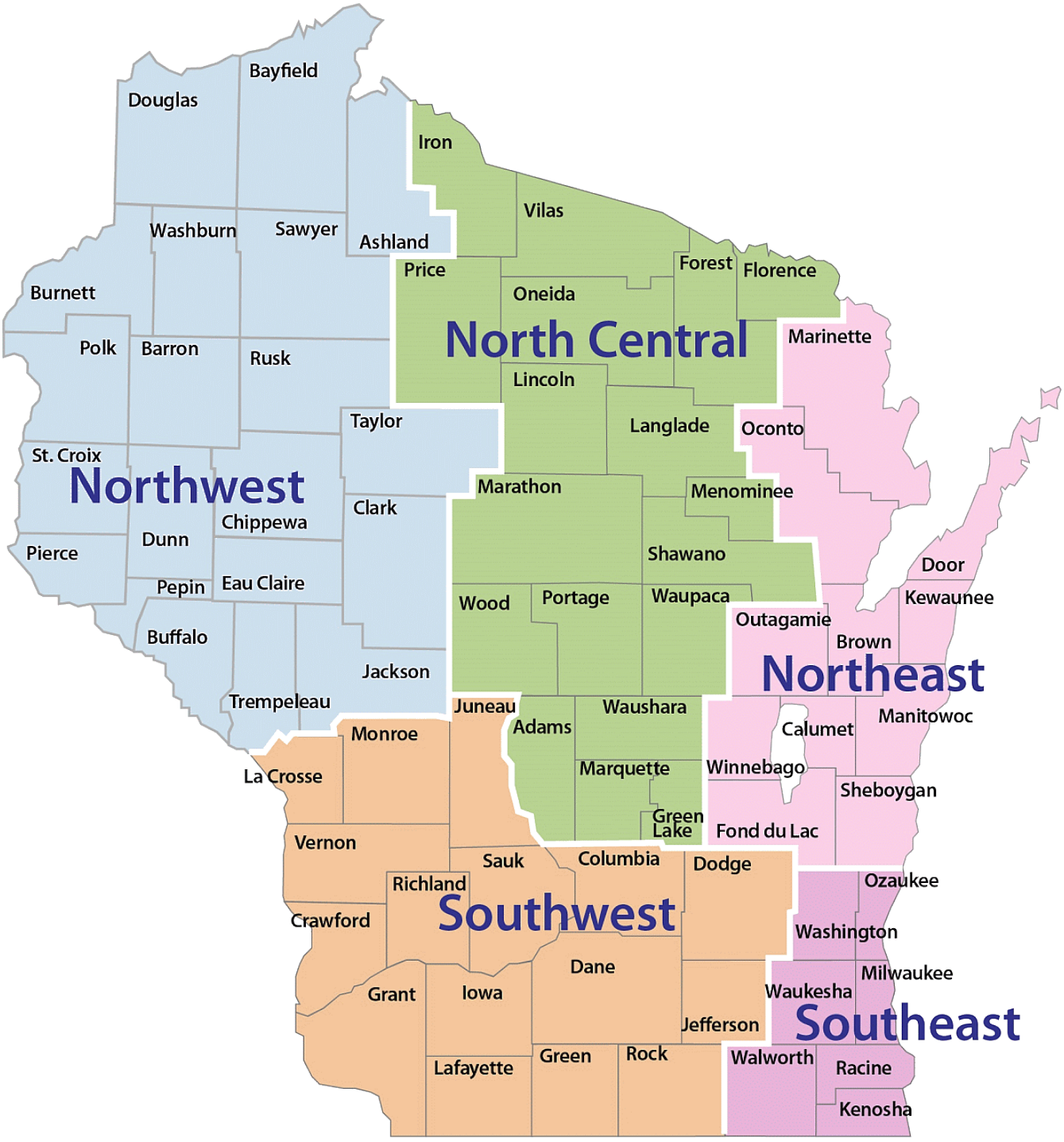
- Population density
- Geographic distribution of racial and ethnic minority groups
- Geographic distribution of low-income persons
- Geographic distribution of youth aged nine or under
- Geographic distribution of seniors aged 65 or older
- Geographic distribution of people with disabilities
- Geographic distribution of zero-vehicle households
- The location and tonnage of freight rail activity
- The location of intercity passenger rail and commuter rail service is available

The equity focused discussion then zooms in to discuss the same issue on a multi-county, regional level. The Wisconsin Department of Transportation (WisDOT) administratively subdivides the state into five regional offices, each a grouping of counties (**Figure 9-1**). The counties associated with each of the five WisDOT Regions are:

- **North Central Region**: Adams, Florence, Forest, Green Lake, Iron, Langlade, Lincoln, Marathon, Marquette, Menominee, Oneida, Portage, Price, Shawano, Vilas, Waupaca, Waushara, and Wood.
- **Northwest Region**: Ashland, Barron, Bayfield, Buffalo, Burnett, Chippewa, Clark, Douglas, Dunn, Eau Claire, Jackson, Pepin, Pierce, Polk, Rusk, Sawyer, St. Croix, Taylor, Trempealeau, and Washburn.
- **Northeast Region**: Brown, Calumet, Door, Fond du Lac, Kewaunee, Manitowoc, Marinette, Oconto, Outagamie, Sheboygan, and Winnebago.

- **Southwest Region**: Columbia, Crawford, Dane, Dodge, Grant, Green, Iowa, Jefferson, Juneau, La Crosse, Lafayette, Monroe, Richland, Rock, Sauk, and Vernon.
- **Southeast Region**: Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha.

Figure 9-1: WisDOT Regions



A statewide intercity passenger rail buffer analysis follows the Region section. Discussions of access and market share associated with proximity to intercity passenger rail stations and associated Amtrak Thruway bus stops often use a geographic measure called a buffer. A buffer is essentially an imaginary circle of a particular length drawn around a station or stop. A buffer of 15 miles for Thruway bus stops and a 30-mile buffer for intercity passenger rail stations has been used for a long time by WisDOT in defining how "close" residents are to stations and bus stops. The buffer analysis continues using these buffers while adding an equity perspective by identifying the equity demographic groups within each buffer.

Finally, the chapter ends with an overview of the equity context of WisDOT's rail programs.

The WRP 2050's equity discussion relies on U.S. Census Bureau data and the location of existing rail infrastructure displayed on maps. Maps were created for each of the equity demographic groups at the statewide level and for each of the five WisDOT Regions. The maps allow for a finer view of the geographic distribution and concentrations of equity demographic groups. Highlights of these maps are presented in this chapter. The **Technical Appendix: Equity Reference Maps and Analysis Methodology** includes all of the maps as well as more technical details about the purpose, data, and methodology used in this equity-focused discussion. Mapped data are from the U.S. Census Bureau's 2015-2019 American Community Survey (ACS) 5-year estimates, which is the most up to date data available at the time of writing the draft WRP 2050. Data points in the map legends are accurate to one decimal point.

Statewide Overview of Wisconsin's Population for Equity Demographic Groups

The discussion of mapped data which follows includes:

- A statewide overview of population density, followed by descriptions of where equity demographic groups live
- A statewide overview of the location and activity of freight and passenger rail infrastructure

Population Density

Summary: *The highest population densities are in the Southeast part of the state.*

Most of Wisconsin's land area has low population density, with most of the higher population dense areas located in the southern two thirds of the state (**Figure 9-2**). Historically, centers of commercial and industrial activity that benefited from – or were built around – rail infrastructure

were also centers of population, which remains largely true today. In Wisconsin, rail lines tend to converge and split off around cities with relatively higher population density.

Many densely populated cities have either an intercity passenger rail station or an Amtrak Thruway bus stop connecting them to a passenger rail station. Most of the low density and rural counties have freight rail lines running through them.

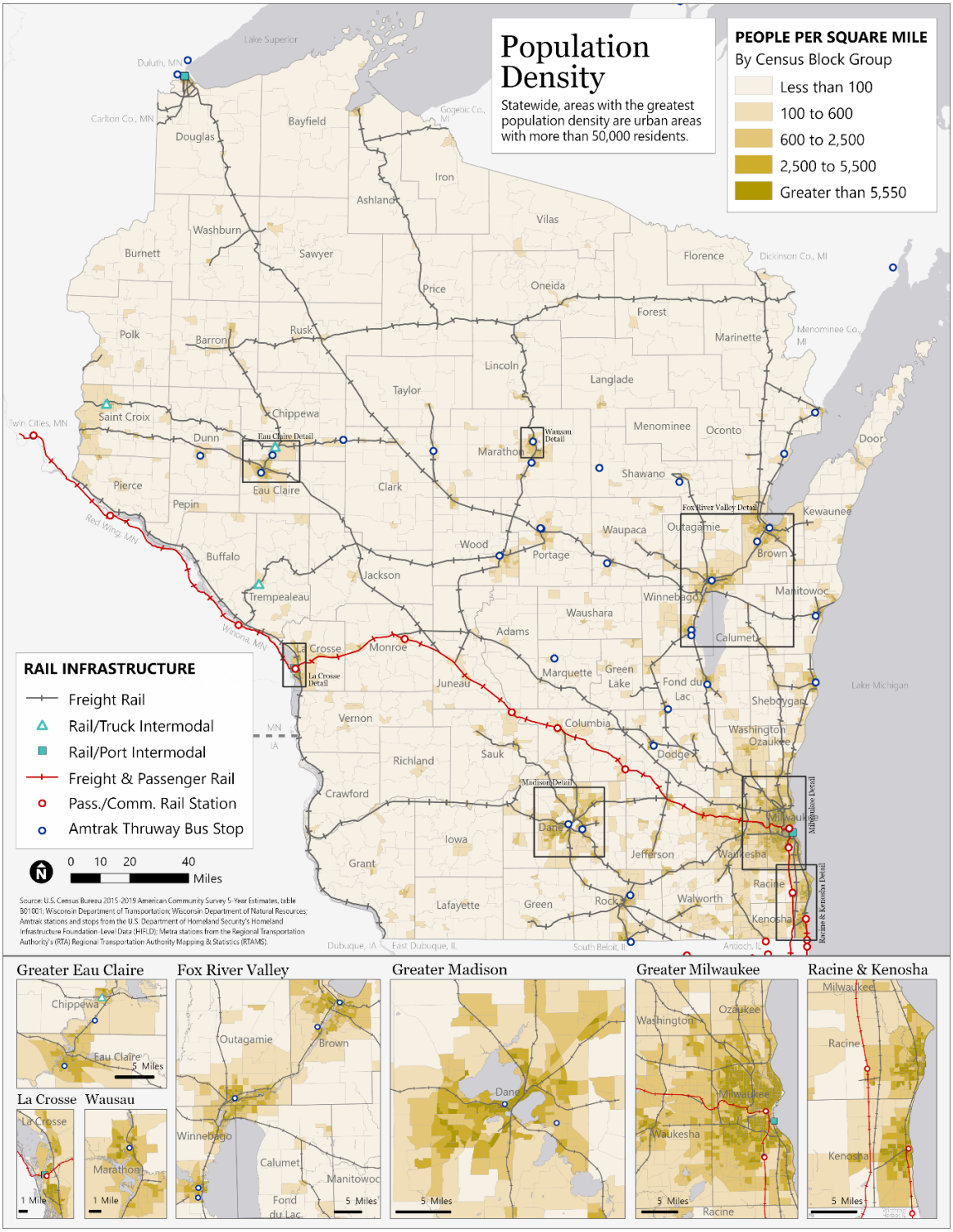
Population density is greatest in the southern and southeastern part of the state, radiating outward from the city centers of five of the state's seven largest cities: Madison, Milwaukee, Kenosha, Racine, and Waukesha. Population density is significantly lower in portions of the state without large urban areas. For example, the Southeast Region has about 20 times the population density of the Northwest Region – about 760 people per square mile compared to 39 people per square mile, respectively (**Table 9-1**).

Table 9-1: Total Population and Population Density by WisDOT Region

	Statewide	Region				
		North Central	Northeast	Northwest	Southeast	Southwest
Total Population	5,790,716	590,627	1,090,263	692,270	2,042,423	1,375,133
Total Square Miles	56,096	15,080	7,322	18,546	2,689	12,459
People per Square Mile	103.2	39.2	148.9	37.3	759.5	110.4

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates, Table B01001

Figure 9-2: Population Density



Racial and Ethnic Minorities

Summary: *Wisconsin is mostly White, with racial and ethnic minority populations generally concentrated in the Southeast, Southwest, and Northeast portions of the state.*

For purposes of this discussion, the United States DOT (USDOT) Environmental Justice definitions were used to identify racial or ethnic minority populations.[1] This defines "minority" as an individual who self-identifies as one of the following racial or ethnic categories:

- **Black or African American**: a person having origins in any of the Black racial groups of Africa.
- **Hispanic or Latino**: a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.
- **Asian American**: a person having origins in any of the original peoples of East Asia, Southeast Asia, or South Asia.
- **American Indian and Alaskan Native**: a person having origins in any of the original people of North America, South America (including Central America), and who maintains cultural identification through Tribal affiliation or community recognition.
- **Native Hawaiian and Other Pacific Islander**: people having origins in any of the original peoples of Hawaii, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or other Pacific Islands.

People who described themselves as being from more than one race or from some other race are included as a racial and ethnic minority.

Approximately 1.1 million (18.7%) of Wisconsin's nearly 5.8 million residents self-report their race and ethnicity as something other than White (**Table 9-2**). The three racial or ethnic minority groups that make up most of that total are Hispanic or Latino (6.8%), Black or African American (6.3%), and Asian (2.8%).

[1] *USDOT Department of Transportation Order 5610.2(a)*

Table 9-2: Population Percentages by Race and Ethnicity by WisDOT Region

Population Group	State	Region				
		North Central	Northeast	Northwest	Southeast	Southwest
White	81.3%	90.3%	87.2%	91.8%	68.8%	85.9%
Minority	18.7%	9.7%	12.8%	8.2%	31.2%	14.1%
Black or African American	6.3%	0.7%	1.7%	0.9%	14.3%	3.2%
American Indian or Alaska Native	0.8%	2.1%	1.1%	1.5%	0.4%	0.4%
Asian	2.8%	2.2%	2.9%	1.4%	3.2%	3.1%
Native Hawaiian or other Pacific Islander	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%
Other Race	0.1%	0.1%	0.1%	0.0%	0.2%	0.1%
Two or More Races	1.9%	1.6%	1.8%	1.6%	2.1%	2.0%
Hispanic or Latino (of any race)	6.8%	3.0%	5.3%	2.6%	11.1%	5.3%

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates, Table B03002

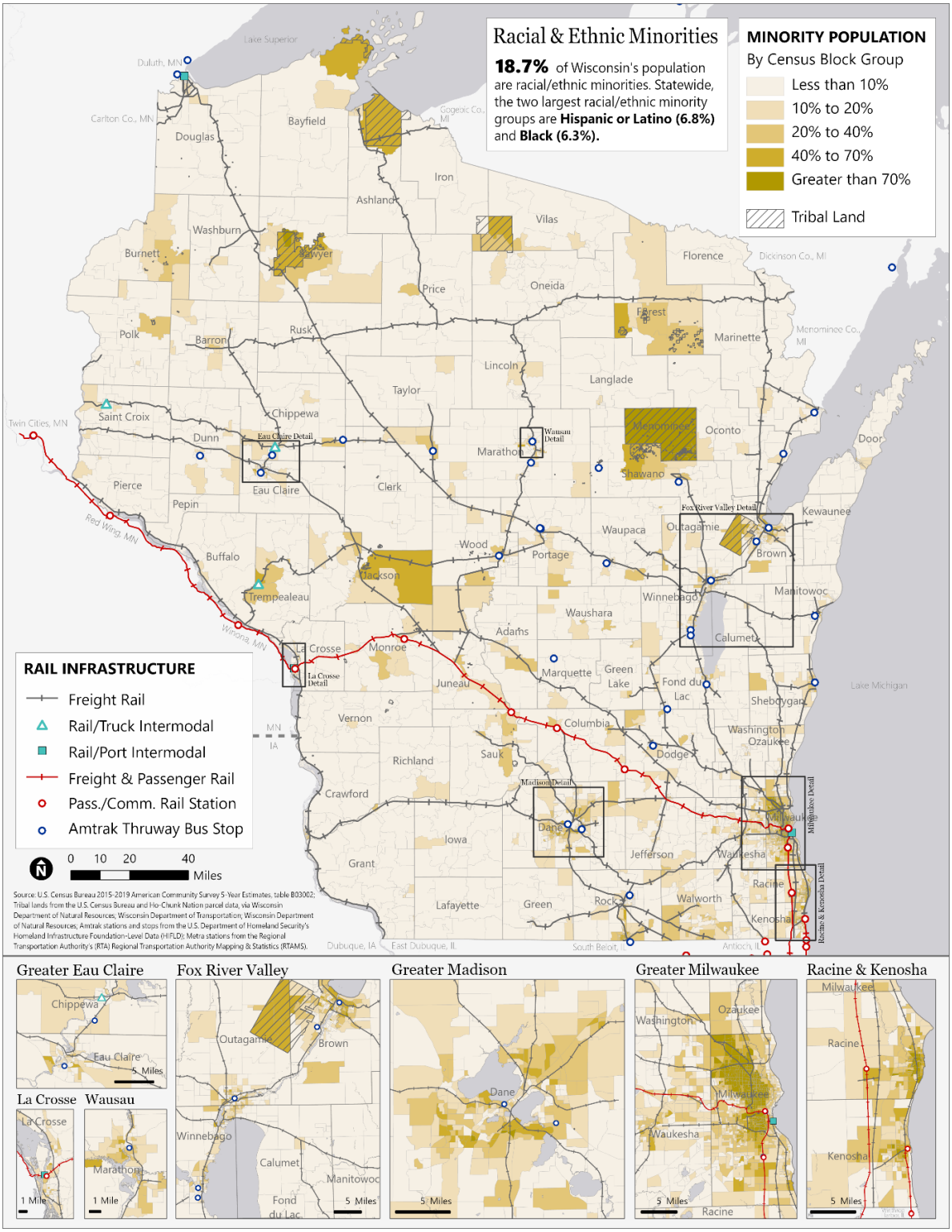
Table 9-3: Population Counts by Race and Ethnicity by WisDOT Region

Population Group	State	Region				
		North Central	Northeast	Northwest	Southeast	Southwest
Total Population	5,790,716	590,627	1,090,263	692,270	2,042,423	1,375,133
White	4,705,599	533,172	950,189	635,792	1,404,930	1,181,516
Minority	1,085,117	57,455	140,074	56,478	637,493	193,617
Black or African American	364,060	4,379	18,223	6,231	291,666	43,561
American Indian or Alaska Native	46,936	12,218	11,976	10,618	7,197	4,927
Asian	160,706	12,819	31,250	9,532	64,479	42,626
Native Hawaiian or other Pacific Islander	2,107	279	260	541	680	347
Other Race	6,068	594	892	246	3,236	1,100
Two or More Races	110,848	9,606	19,161	11,370	42,631	28,080
Hispanic or Latino (of any race)	394,392	17,560	58,312	17,940	227,604	72,976

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates, Table B03002

Racial and ethnic minorities live throughout the state, including urban, rural, and suburban communities (**Table 9-3**). The geographic pattern is different for each sub-group. Some races/ethnicities are more highly concentrated in urban areas and in the smaller town centers of largely rural counties – both representing areas where population density is relatively greatest. However, areas within mostly rural Native American Tribal lands tend to have higher percentages of racial or ethnic minority residents (**Figure 9-3**). For example, census block groups within the five largest Native American Tribal reservations by contiguous surface area in Wisconsin – Menominee, Bad River, Lac du Flambeau, Lac Courte Oreilles, and Oneida – contain a population that is 43% racial or ethnic minority (32% American Indian or Alaska Native population). There are only a few counties with census blocks including the highest two categories of racial/ethnic minorities.

Figure 9-3: Racial and Ethnic Minority Populations



Low-Income Populations

Summary: *People living in poverty are distributed throughout the state.*

Approximately 639,000 Wisconsin residents were experiencing poverty in 2015-2019, according to Census estimates. This is a statewide poverty rate of 11.3%. People experiencing poverty are described as being "low income."[2]

Low-income people live throughout the state. Among the five WisDOT Regions, the poverty rate is greatest in Southeast (13.0%) and lowest in Northeast (9.1%). The remaining three WisDOT Regions have poverty rates closer to the state average of 11.3% (**Table 9-4**).

Table 9-4: Low-Income Populations by WisDOT Region

Population Group	Statewide	Region				
		North Central	Northeast	Northwest	Southeast	Southwest
Total population	5,790,716	590,627	1,090,263	692,270	2,042,423	1,375,133
Population for whom poverty status is determined[3]	5,642,353	576,363	1,061,901	670,436	1,999,805	1,333,848
Population in poverty	639,160	62,348	96,760	71,828	260,689	147,535
Percent of population in poverty	11.3%	10.8%	9.1%	10.7%	13.0%	11.1%

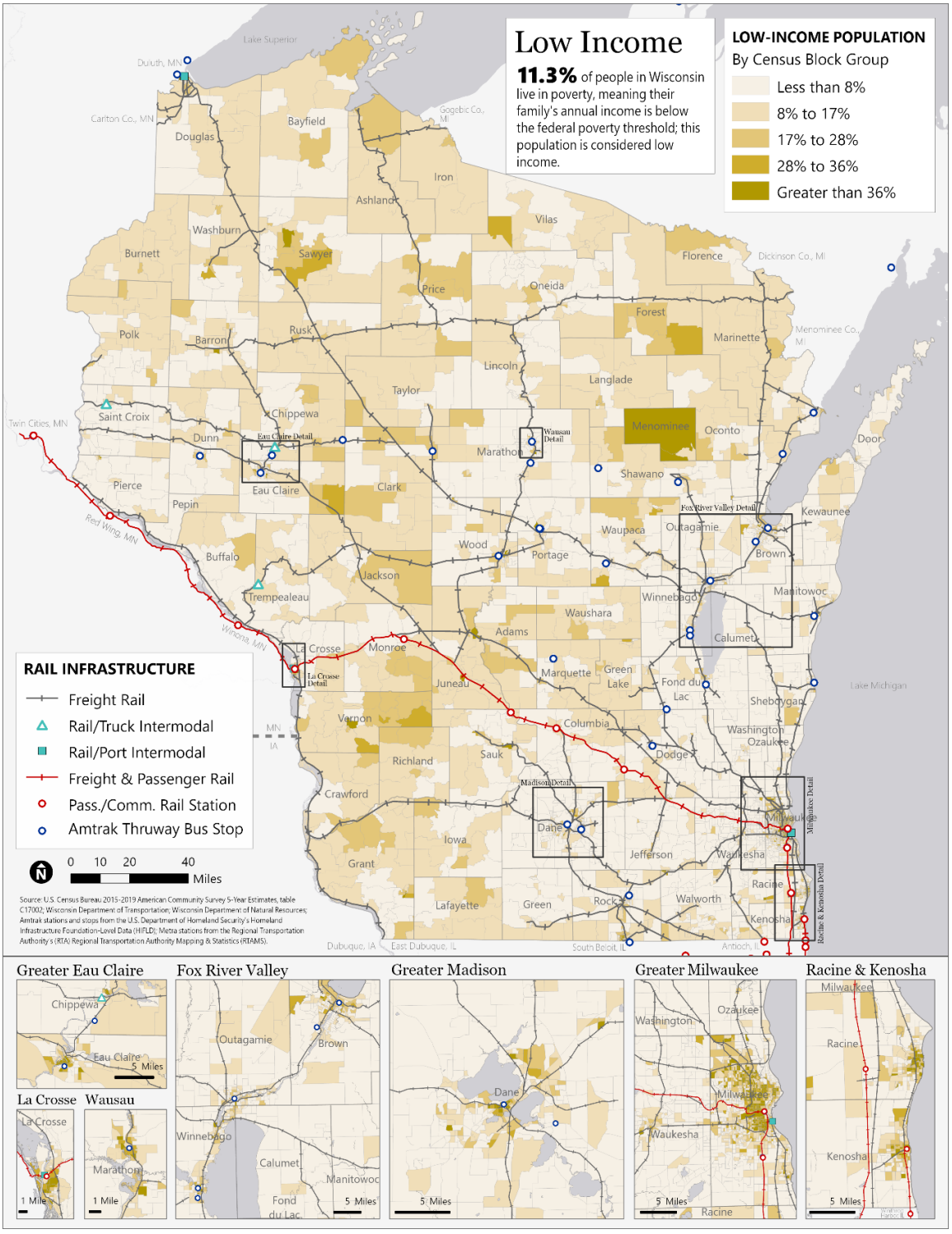
Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates, Table C17002

Census block groups within and around Native American Tribal reservations in northern Wisconsin tend to have greater proportions of low-income individuals. Lands of the Forest County Potawatomi, Lac Courte Oreilles, Menominee, and Sokaogon Chippewa Tribes are located in Forest, Menominee, and Sawyer Counties (**Figure 9-4**).

[2] *See **Technical Appendix: Equity Reference Maps and Analysis Methodology** for a detailed description of the methodology used for identifying low-income populations.*

[3] *Census Bureau Poverty Thresholds are not applied to the population living in group quarters, such as correctional facilities, nursing homes, psychiatric hospitals, college dormitories, military barracks, group homes, missions, or shelters.*

Figure 9-4: Low-Income Populations



Youth – Age 9 and Under

Summary: *Youth populations are distributed widely throughout the state.*

Nearly 12% of Wisconsin residents are youth, defined as individuals aged 9 and under. Youth make up a similar proportion of the total population in each of the five WisDOT Regions, ranging from 10.6% in the Northwest Region to 12.4% in the Southeast.

Youth are more evenly distributed throughout the state than other demographic groups examined in this chapter (**Table 9-5**). The geographic distribution shows up more clearly on the WisDOT Regional maps later in this chapter. A statewide map of youth is available in the **Technical Appendix Equity Maps and Analysis Methodology.**

Table 9-5: Youth Population by WisDOT Region

Population Group	Statewide	Region				
		North Central	Northeast	Northwest	Southeast	Southwest
Total population	5,790,716	590,627	1,090,263	692,270	2,042,423	1,375,133
Youth: Age 9 and under	687,312	62,535	131,650	80,698	253,590	158,839
Percent youth	11.9%	10.6%	12.1%	11.7%	12.4%	11.6%

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates, Table B01001

Seniors – Age 65 and Over

Summary: *Wisconsin is demographically an older state, with the senior population distributed widely throughout the state, with a few exceptions.*

The senior population, defined as individuals aged 65 and over, makes up 16.5% of the state's population. The North Central Region has the greatest proportion of the population age 65 and over among the five WisDOT Regions at 20.7%. While nearly one third of all seniors in Wisconsin live in the Southeast Region, it has the lowest proportion of seniors compared to total residents (15.2%) (**Table 9-6**).

While there are large populations of seniors distributed throughout Wisconsin, there are a few exceptions. Many northern Wisconsin counties have relatively higher proportions of seniors compared to the rest of the state. Northern counties like Door, Marinette, and Vilas are largely made up of census block groups where 23% or more of the residents are seniors. There are many

places elsewhere in the state where seniors make up greater than 33% of the population, including around the edges of many of the state's largest urban areas. The geographic distribution shows up more clearly on the WisDOT Regional maps later in this chapter. A statewide map of seniors is available in the Technical Appendix Equity Maps and Analysis Methodology.

Table 9-6: Senior Population by WisDOT Region

Population Group	Statewide	Region				
		North Central	Northeast	Northwest	Southeast	Southwest
Total population	5,790,716	590,627	1,090,263	692,270	2,042,423	1,375,133
Seniors: Age 65 and over	953,571	122,230	181,405	123,622	311,143	215,171
Percent seniors	16.5%	20.7%	16.6%	17.9%	15.2%	15.6%

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates, Table B01001

People with Disabilities

Summary: *About a third of people with disabilities in the state live in the Southeast Region.*

Statewide, 11.7% of the population – over 670,000 people – report having a disability (**Table 9-7**). The North Central Region has the highest proportion of residents who have a disability, at 14.0%. However, almost twice as many people with disabilities live in the Southeast Region than in any other single WisDOT Region. A statewide map of persons with disabilities is available in the Technical Appendix Equity Maps and Analysis Methodology.

Table 9-7: People with Disabilities by WisDOT Region

Population	Statewide	Region				
		North Central	Northeast	Northwest	Southeast	Southwest
Total population	5,790,716	590,627	1,090,263	692,270	2,042,423	1,375,133
Civilian non-institutionalized population	5,718,951	582,039	1,075,270	682,780	2,022,052	1,356,810
Population with one or more disabilities	671,635	81,254	121,760	87,449	235,364	145,808
Percent population with a disability	11.7%	14.0%	11.3%	12.8%	11.6%	10.7%

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates, Table B25044

Zero-Vehicle Households

Summary: *The vast majority of residents have access to a vehicle, but important differences occur throughout the state geographically and by demographic group.*

Most Wisconsin households have access to a vehicle, however over 157,000 Wisconsin households, or 6.7% of all households, do not. The rate of zero-vehicle households within WisDOT Regions ranges from a low of 5.0% in the North Central Region to a high of 8.8% in the Southeast Region. In fact, the Southeast Region has 46% of all zero-vehicle households in the state.

Zero-vehicle households are more common in urban areas. This pattern is evident in communities such as Eau Claire, Green Bay, Kenosha, La Crosse, Madison, Milwaukee, Racine, and Wausau. However, many households throughout the state's rural areas also lack access to a vehicle. This is most pronounced in, but not exclusive to, Clark and Vernon Counties. A statewide map of zero-vehicle households is available in the **Technical Appendix Equity Maps and Analysis Methodology.**

The percentage of racial or ethnic minorities living in zero-vehicle households is greater than the statewide average. Black or African Americans have the highest rate at 18.1% living in zero-vehicle households, followed by American Indian or Alaska Native at 8.0%. The percentage of the

population living in zero-vehicle households is also nearly four times the statewide average for people living in poverty, three times the statewide average for people with disabilities, and almost double the statewide average for seniors (**Table 9-9**; **Table 9-9**).

Those without access to a personal vehicle are more likely to rely on other forms of transportation for mobility, such as using public transit, a bicycle, or walking. As described later in this chapter and in **Chapter 8 Environmental Context**, alternative forms of transportation have extra safety risks and mobility challenges related to rail crossings.

Table 9-8: Zero-Vehicle Households by WisDOT Region

Population Group	Statewide	Region				
		North Central	Northeast	Northwest	Southeast	Southwest
Households	2,358,156	253,934	449,204	282,370	813,051	559,597
Zero-vehicle households	157,168	12,703	23,318	14,564	71,946	34,637
Percent zero-vehicle households	6.7%	5.0%	5.2%	5.2%	8.8%	6.2%

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates, Table B18101

Table 9-9: Percent of Statewide Population Living in Zero-Vehicle Households

Population Group	Percent of Population Living in Zero-Vehicle Households
Total Population	4.6%
By Race (any Ethnicity)	--
White	3.6%
Black or African American	18.1%
American Indian or Alaska Native	8.0%
Asian	5.2%
Native Hawaiian or other Pacific Islander	7.1%
Other Race	5.4%
Two or More Races	4.9%
Population in Poverty	17.3%
Seniors: Age 65 and Over	7.5%
Population with one or more Disabilities	13.7%

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates – Public Use Microdata Sample

The Rail System and Who Lives Near It

The following section describes Wisconsin residents' proximity to the existing rail system. Special attention is given to proximity to rail for the equity demographic groups: racial and ethnic minorities, low-income individuals, youth, seniors, people with disabilities, and households without access to a vehicle.

Rail Activity

In addition to proximity (distance or time) to freight and intercity passenger rail infrastructure, at a project or corridor study level it is also important to consider how often or to what degree such infrastructure is used to better understand impacts on residents and households. Potential

impacts – both positive and negative – of the rail system on people, households, and communities may include:

- Safety
- Noise
- Vibration
- Air quality
- Mobility and connectivity
- Community barriers
- Access to necessities and opportunities
- Economic activity

General discussions of these impacts are presented in **Chapter 8 Environmental Context** and **Chapter 11 System-Plan Environmental Evaluation**.

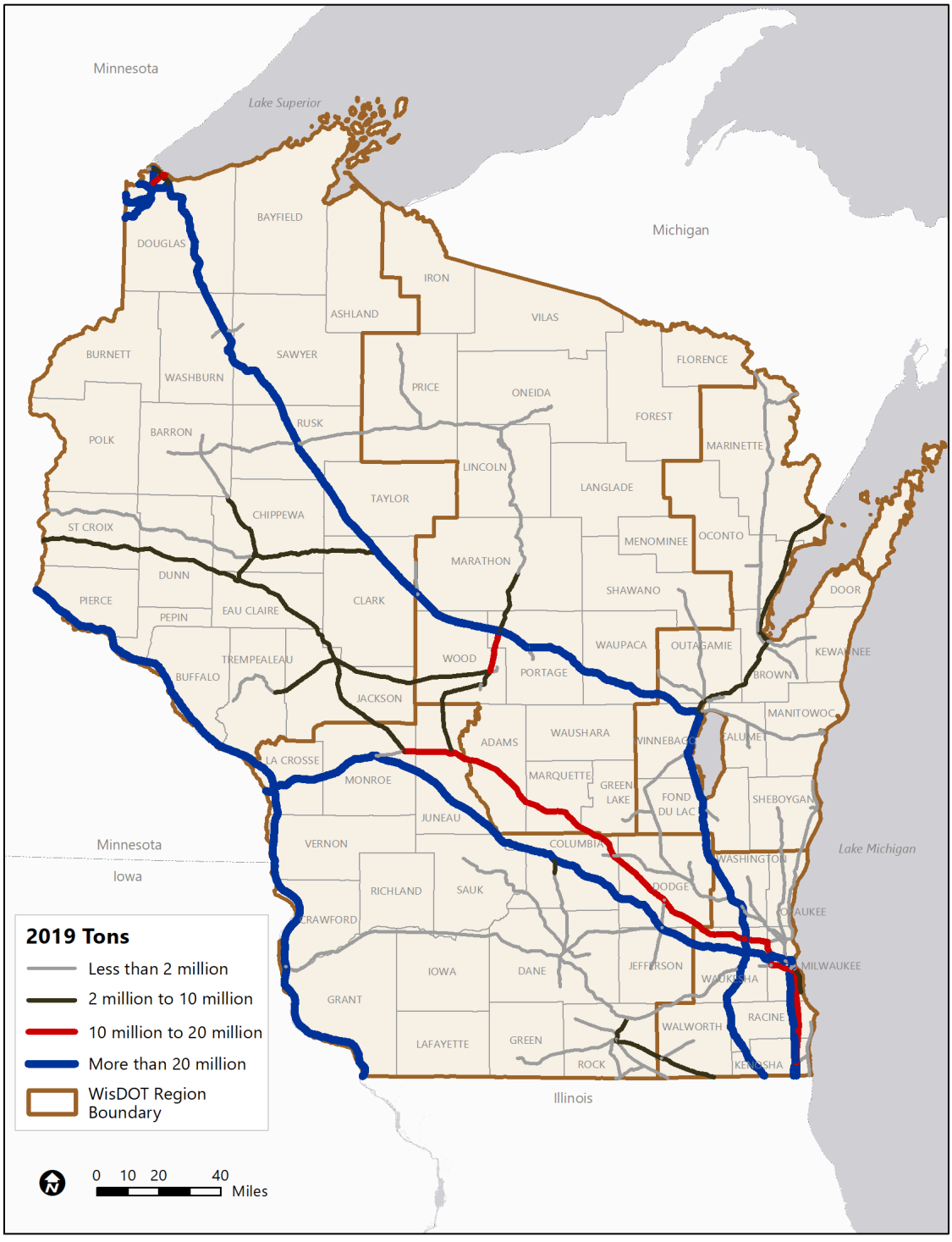
Freight Rail Activity Varies Greatly Throughout the State

Tonnage of goods shipped along rail lines is used in this discussion as a proxy for rail activity. Numbers of rail cars and frequencies of trains is a more direct measure, but data is not available for all rail lines. There are also significant seasonal variations on some rail lines. Though the analysis in this chapter only provides a snapshot in time and change in conditions from year to year, it does show that of some rail lines are more active than others.

Among the five WisDOT Regions, the Southeast Region had the greatest tonnage carried (**Figure 9-5**). The Southeast Region also has the state's largest racial and ethnic minority, low-income, and youth populations, and the most zero-vehicle households, as measured both by numbers and percentages of people (**Table 9-3**, **Table 9-2**, **Table 9-4**, **Table 9-8**, **Table 9-9**).

In the Northwest Region, more than 20 million tons of goods were carried on many different rail line segments in and around Superior. This is related to the state's most active rail/port intermodal facility straddling Duluth and Superior. Some neighborhoods in Superior have relatively high concentrations of several equity demographic groups. In other parts of the state there are some areas where there are several active rail lines in a relatively small area but that carried relatively little tonnage. This is most prominently seen in Brown, Dane, northern Milwaukee, Outagamie, and Rock Counties. A large number of rail lines does not necessarily translate directly to high train activity.

Figure 9-5: Freight Rail Activity Tonnage by Rail Line Segment



*(Lines not shown had no tonnage); Source: 2019 IHS Transearch data

Intercity Passenger Rail and Commuter Rail Service

Summary: *Intercity passenger and commuter rail services are provided along two corridors, but Thruway bus connections expand access throughout the state.*

For some Wisconsin residents, intercity passenger rail offers a viable transportation option for long-distance or intercity travel. Amtrak operates one long-distance and one intercity passenger rail corridor service within the state. A second corridor service route known as Twin Cities Milwaukee Chicago (TCMC) is expected to begin service in 2024. Metra operates one commuter rail line from Kenosha into Chicago.

The Hiawatha is Wisconsin's only corridor intercity passenger rail service in operation as of early 2022.[4] The 86-mile Hiawatha route connects Milwaukee and Chicago via Canadian Pacific and Metra Milwaukee District North tracks, and primarily serves the state's Southeast Region. The Southeast Region has the state's largest racial and ethnic minority, low-income, and youth populations, and the most zero-vehicle households, as measured both by both numbers and percentages of people (**Table 9-3**, **Table 9-2**, **Table 9-4**, **Table 9-8**, **Table 9-9**). The Hiawatha includes seven daily roundtrips Monday through Saturday, with six daily roundtrips on Sunday. The Hiawatha has stops at:

- **Downtown Milwaukee's Intermodal Station** with connections to five intercity bus providers, Amtrak's Empire Builder long-distance route, the Milwaukee streetcar, and nine Milwaukee County Transit Service bus routes within four blocks.
- **Milwaukee Airport Rail Station** located on the grounds of General Mitchel International Airport which also is serviced by two intercity bus routes and four Milwaukee County Transit System bus routes.
- **Sturtevant Station** located in the Racine urban area, a Racine Belle Urban system bus route services the station.
- **Glenview Illinois** (shared stop with Metra).
- **Chicago's downtown Union Station.**

Amtrak also operates one long distance train route through Wisconsin. The Empire Builder provides one daily round-trip between Chicago, Milwaukee, Minneapolis/St. Paul, and Seattle/Portland. One Empire Builder stop is in the Southeast Region, while five are in the

[4] *For more information about the Hiawatha see* Chapter 5 Intercity Passenger Rail: Corridor and Long-Distance *; for details about the stations see* Chapter 6 Intercity Passenger Rail Stations- Corridor and Long-Distance Service

Southwest Region. The Southwest Region has the state's second-largest racial and ethnic minority, and low-income populations as measured by percentages of people (**Table 9-3**, **Table 9-2**, **Table 9-4**, **Table 9-8**, **Table 9-9**). Wisconsin Empire Builder stops include:

- Milwaukee Intermodal Station
- Columbus
- Portage
- Wisconsin Dells
- Tomah
- La Crosse

The Twin Cities-Milwaukee-Chicago (TCMC) Intercity Passenger Rail Project will add a second daily round-trip passenger train between Chicago and St. Paul/Minneapolis. The TCMC will follow Amtrak's existing long-distance Empire Builder route in the state. Service will complement the existing Empire Builder schedule, providing travel flexibility with both a morning and mid-day departure from Chicago and St. Paul. All Wisconsin's Empire Builder stops, plus the Milwaukee Airport Rail Station, will be on the TCMC route. Service is anticipated to start in 2024.

Amtrak Thruway bus connections also help provide access to intercity passenger rail service for Wisconsin residents at the Milwaukee Intermodal Station, Columbus, Portage, Chicago Union Station, and St. Paul Amtrak stations. At the time of the previous Wisconsin Rail Plan in 2014, Wisconsin had four Thruway bus routes; there are now eight services providing access for residents in all five WisDOT Regions:

- Green Bay - De Pere - Appleton - Oshkosh - Fond du Lac – Milwaukee
- Duluth, MN (Superior) - Cloquet, MN – Sandstone, MN - St. Paul, MN
- Wausau - Stevens Point - Waupaca - New London - Appleton - Oshkosh - Fond du Lac – Milwaukee
- Houghton, MI - L'Anse, MI - Marquette, MI - Escanaba, MI - Powers, MI - Stephenson, MI - Marinette - Oconto - Green Bay - Manitowoc - Sheboygan – Milwaukee
- Madison - Janesville - South Beloit, IL - Rockford, IL - Chicago, IL
- Madison - Columbus - Fond du Lac - Oshkosh - Appleton - Green Bay
- Madison - Portage - Stevens Point – Wausau
- Minneapolis/St. Paul, MN - Hudson - Menomonie - Eau Claire - Wausau - Shawano - Green Bay - Manitowoc - Sheboygan

See **Chapter 4 Commuter Rail** and **Chapter 5 Intercity Passenger Rail Corridor and Long-Distance** for more details on intercity passenger rail service in Wisconsin.

WisDOT Region Focused Discussion

This section of the equity discussion is at the regional level as represented by the counties within each WisDOT Region. The regional or sub-state level adds an important perspective. As seen in the previous section showing a statewide overview, the geographic distribution of the equity demographic subgroups varies greatly across the state.

North Central Region

Counties: Adams, Florence, Forest, Green Lake, Iron, Langlade, Lincoln, Marathon, Marquette, Menominee, Oneida, Portage, Price, Shawano, Vilas, Waupaca, Waushara, and Wood.

Summary: *Most North Central counties do not have active rail lines, and those that do tend to have rail lines that carry low volumes of goods. Most activity takes place in only a few areas in the southern portion of the Region.*

Seniors, youth, and people with disabilities in the North Central Region are geographically widely dispersed. Detailed maps for these demographic groups are included in **Technical Appendix: Equity Reference Maps and Analysis Methodology**.

Freight Rail in the North Central Region

Summary: *The North Central Region has low freight rail density, and seven counties had no active freight movement in 2019. The high activity lines are in the southern portion of the Region. Concentrations of equity demographic groups are not common near these lines.*

Active Rail Lines in the North Central Region

Among the five WisDOT Regions, the North Central Region has the least amount of linear active freight rail line per square mile. None of Wisconsin's three rail/truck intermodal facilities nor any of its three rail/port intermodal facilities are in the North Central Region.

Rail line segments in Marathon, Wood, Portage, and Waupaca Counties had the greatest rail activity in 2019. About half of the active freight rail line miles in the North Central Region carried very little freight - less than two million tons of goods (**Figure 9-5**). These relatively less utilized line segments are located north of Wausau in Marathon and in Lincoln, Oneida, Price, and Shawano Counties. Some of the Region's active rail line segments – in eastern Oneida, Forest, and

eastern Waupaca Counties – carried no goods in 2019. The most active rail lines are on Canadian National rail lines running on a diagonal through Waupaca, Stevens Point, and Marshfield. These lines link the Fox Cities and points south to the Superior port to the northwest corner of the state.

Racial and ethnic minority residents make up 9.7% of all residents of the North Central Region, the second lowest rate among the WisDOT Regions and nearly half the statewide rate of 18.7% (**Figure 9-6**). There are only a few areas in the Region where there are concentrations of racial and ethnic minorities near freight rail lines. The few locations of concentrations of racial and ethnic minorities are in:

- Rib Mountain, immediately west of Wausau and south of the Big Rib River (rail line moved no tonnage in 2019)
- Shawano
- Wausau, west of the Wisconsin River (rail line moved no tonnage in 2019)
- Wisconsin Rapids

Overall, these areas had relatively low rail or no rail activity in 2019.

The two largest racial or ethnic minority groups in the Region are American Indians/Alaskan Natives and Asians. Among the five WisDOT Regions, the North Central Region has the highest proportion of residents who identify as American Indian/ Alaska Native, and has more than half of the contiguous surface area of Native American Tribal lands in the state. Most of the Native American Tribal lands (both number of parcels and area) are not near active freight rail lines. Asian residents of the Region generally live closer to the rail lines. About four in five Asian residents in the North Central Region live in Wausau, Stevens Point, Wisconsin Rapids, and their surrounding municipalities – where the freight rail line links are most dense but do not carry much tonnage.

In the North Central Region,10.6% of residents are considered low income (**Figure 9-7**). Among all census block groups that are near freight rail lines, about half have low-income population totals less than 8%, and nearly all have totals less than 28%. The block groups that have poverty rates greater than 28% and are near freight rail are in the:

- Central portion of Merrill
- Northern portion of Stevens Point
- Central portion of Wausau and the west side of Weston (rail segment carried no rail tonnage)

- Northwest portion of Wisconsin Rapids

Freight rail activity through Stevens Point carried more than 20 million tons of goods in 2019, indicating a potentially higher impact (**Figure 9-5**); activity in Weston, Merrill, and Wisconsin Rapids ranged from two to 20 million tons of goods carried.

Five percent of households in the North Central Region do not have access to a vehicle – the lowest rate among the five WisDOT Regions (**Table 9-8**). Nearly all block groups in the Region located near rail have low zero-vehicle household rates (**Figure 9-8**). However, most high-concentration zero-vehicle household block groups in the Region are near active rail lines.

Block groups in the North Central Region where a high proportion (at least 20%) of households do not have access to a vehicle and that are near freight rail lines are in and around Adams, Marshfield, Merrill, Rhinelander, Shawano, Stevens Point, Tomahawk, Wausau, and Wisconsin Rapids (**Table 9-8**). Among these, rail line activity in 2019 was relatively high (more than 10 million tons of goods carried) in Marshfield, Stevens Point, and Wisconsin Rapids (**Figure 9-5**).

Intercity Passenger and Commuter Rail in the North Central Region

Summary: *There are many Amtrak connections within the southern part of the North Central Region. Ten Amtrak Thruway bus stops are in the Region and two Amtrak stations are located just outside the southern border of the Region. Not all equity groups are near passenger rail service.*

Residents of the North Central Region have excellent access to Amtrak service despite having no Amtrak rail stations within it. Residents of the southern part of the Region have direct access to two rail stations nearby: Wisconsin Dells Amtrak station in Sauk County and the Portage Amtrak station seven miles south of the Region border. Both stations are served by Amtrak's Empire Builder, which operates one train per day each day of the week, in each direction between Chicago and the Twin Cities via Milwaukee. A new passenger rail corridor service called the TCMC is expected to begin in 2024, adding an additional trip in each direction between Chicago and the Twin Cities.

Amtrak Thruway bus stops are served by intercity bus lines that provide connections to Amtrak service. There are ten Thruway bus stops in the North Central Region that connect to Amtrak rail stations located in the southern half of the Region representing nearly a quarter of all Thruway bus stops in the state. Not all equity groups are near passenger rail service (**Figure 9-6**).

Amtrak Thruway bus stops in the North Central Region tend to be in census block groups that are predominantly White. Block groups with high concentrations of racial and ethnic minorities

west of Wausau and on Native American Tribal lands in Forest, Menominee, and Vilas Counties are not near Thruway bus stops (**Figure 9-6**).

Low-income residents are better served by Amtrak Thruway bus stops than racial and ethnic minority populations in the Region. The block groups with high concentrations of low-income residents in Stevens Point, Wausau, and Wisconsin Rapids are all located near Thruway bus stops. The nearest stops to Menominee County, which is largely between 28% and 36% low income, are in Shawano County (**Figure 9-7**).

There are only a few block groups in the North Central Region which are at least 20% zero-vehicle households. Generally, these block groups are directly adjacent to a Thruway bus stop, as in Wausau, or near-by as in the cities of Stevens Point and Wisconsin Rapids. The block group near Hurley which has a high proportion of zero-vehicle households does not have access to a Thruway bus stop (**Figure 9-8**).

Figure 9-6: Racial and Ethnic Minority Populations – North Central Region

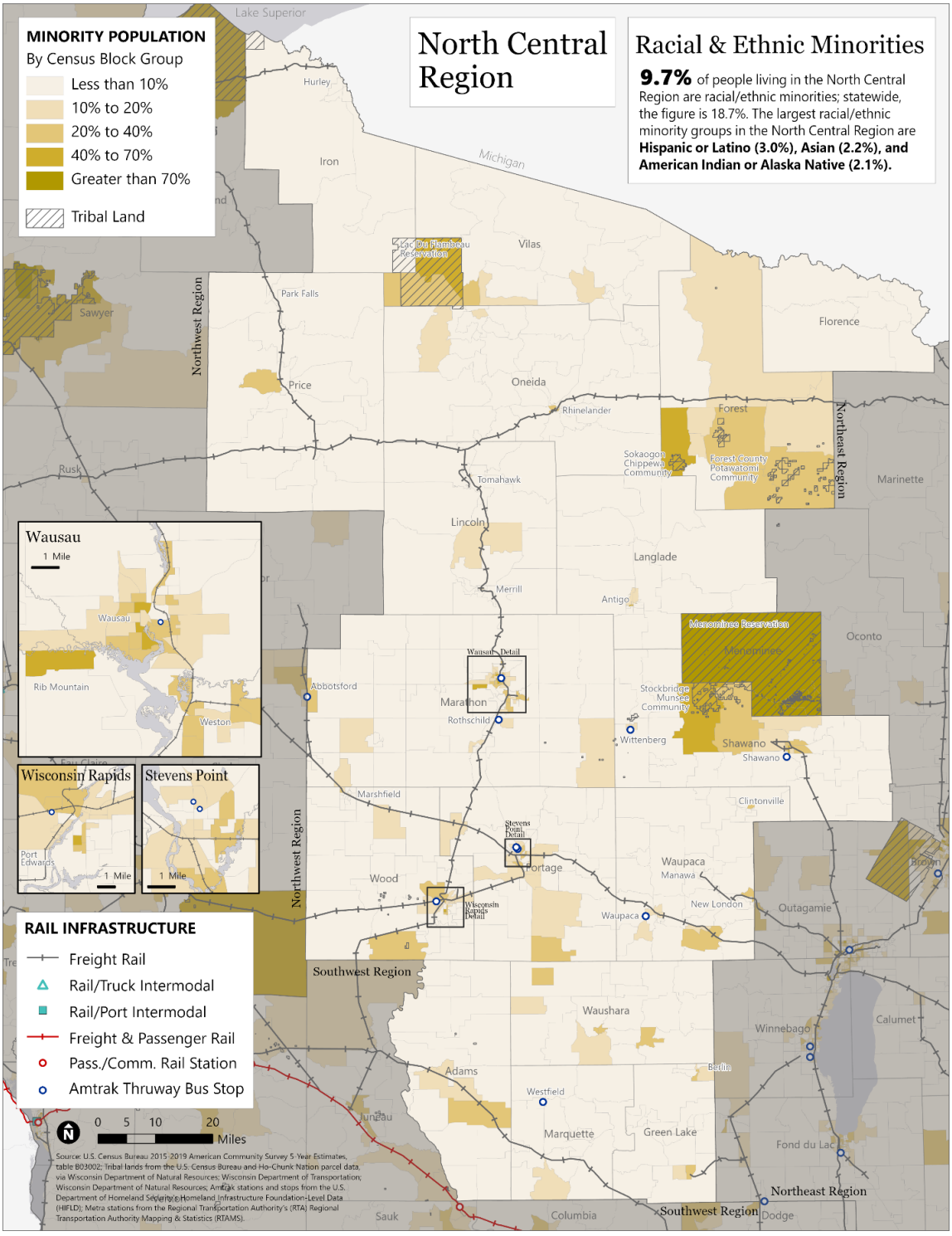


Figure 9-7: Low-Income Populations – North Central Region

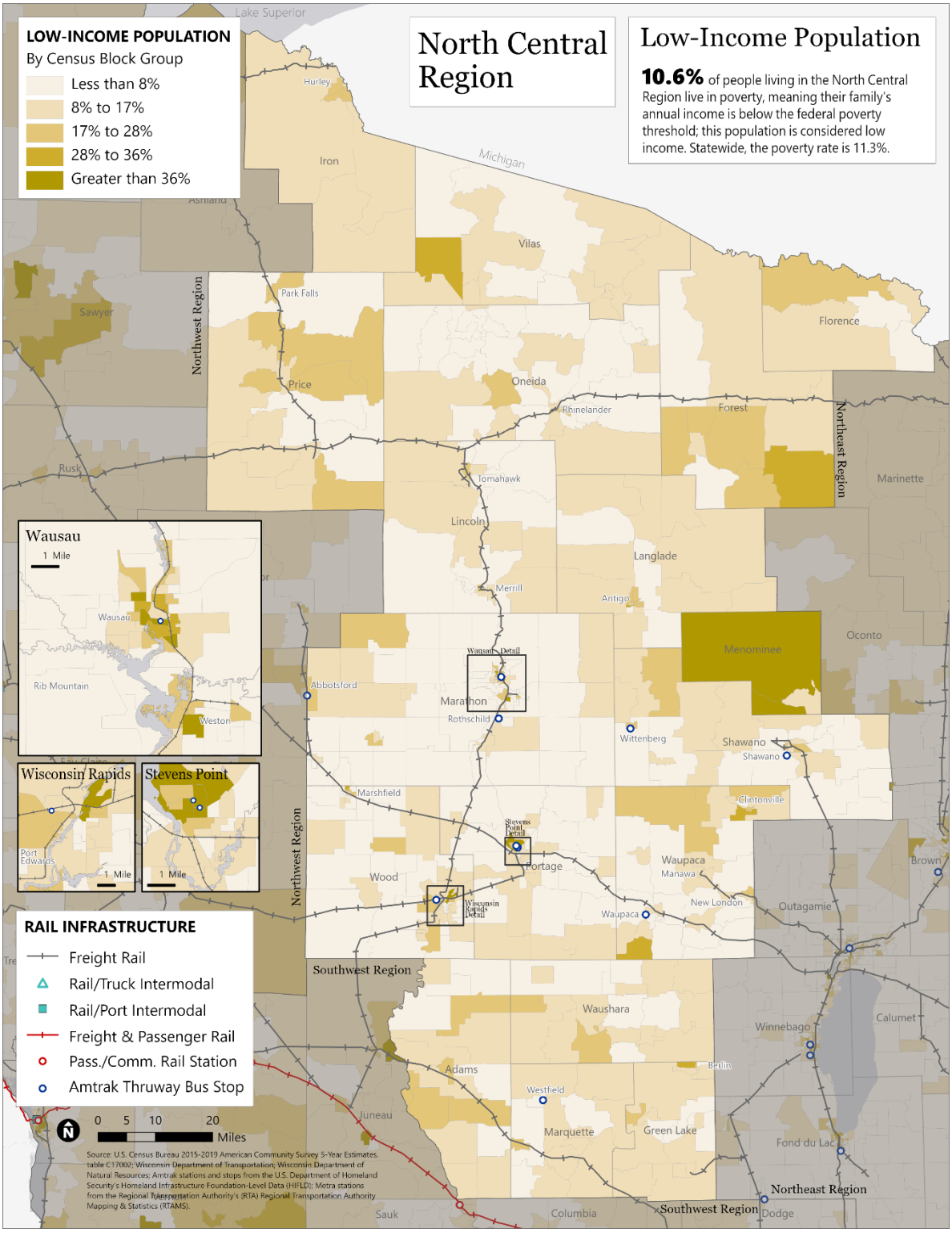
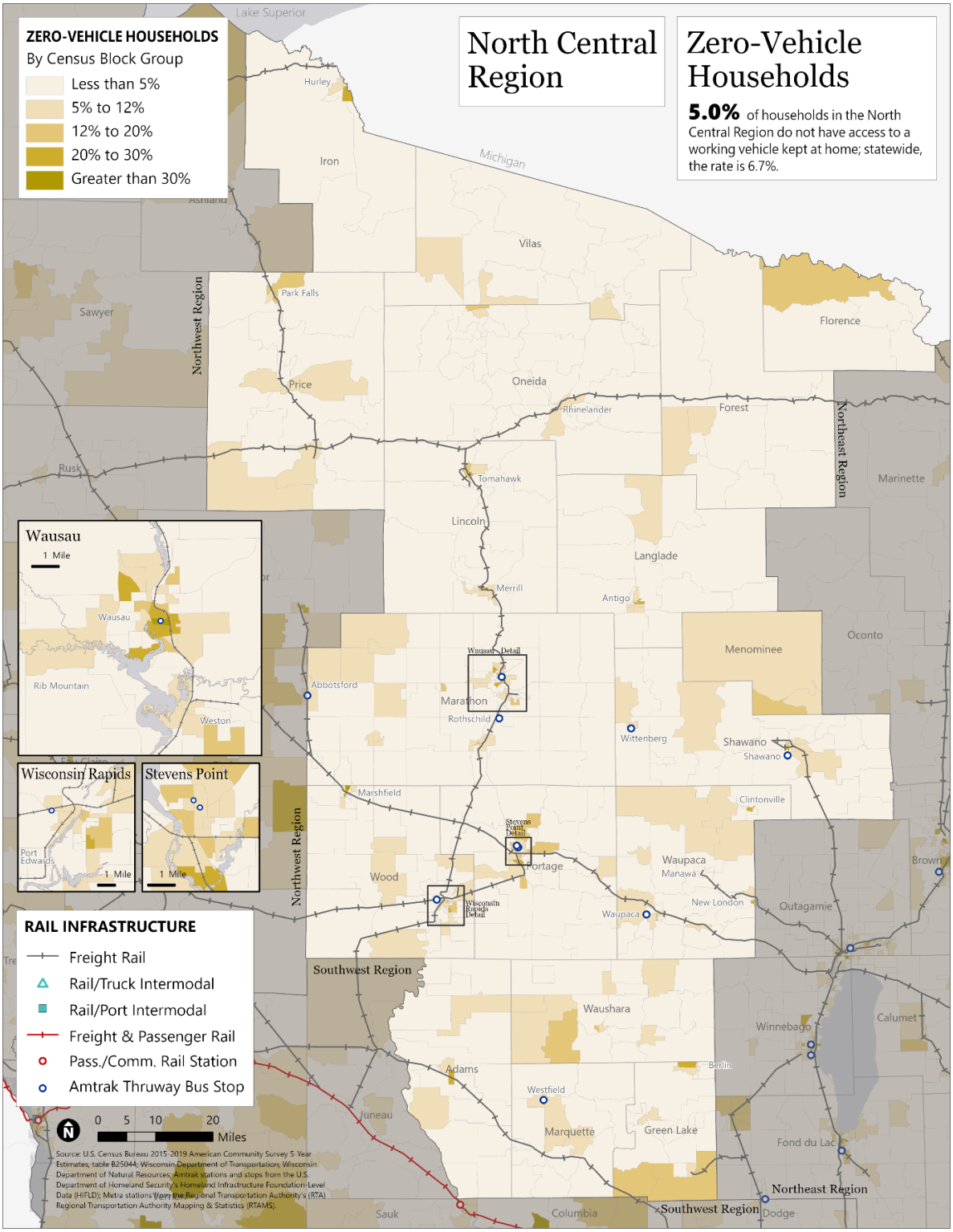


Figure 9-8: Zero-Vehicle Households – North Central Region



Northwest Region

Counties: Ashland, Barron, Bayfield, Buffalo, Burnett, Chippewa, Clark, Douglas, Dunn, Eau Claire, Jackson, Pepin, Pierce, Polk, Rusk, Sawyer, St. Croix, Taylor, Trempealeau, and Washburn.

Summary: *Most counties in the Northwest Region do not have active rail lines. There are several high-volume freight corridors, two of which connect Wisconsin to the Twin Cities and the Duluth-Superior port, and three truck-to-train intermodal facilities.*

Seniors in the Northwest Region are geographically widely dispersed. A detailed map for this demographic group is included in **Technical Appendix: Equity Reference Maps and Analysis Methodology**.

Freight Rail in the Northwest Region

Summary: *There are several high-volume freight lines connecting the state to the Twin Cities and the Duluth-Superior area. The Northwest Region is home to the state's most active port and all three truck-to-train intermodal facilities in the state. Concentrations of equity groups are uncommon near high-volume freight lines.*

Active Rail Lines in the Northwest Region

Most active freight rail lines in the Northwest Region carried at least two million tons of goods in 2019. The most active line segments, carrying more than 20 million tons in 2019, are along the state's western border (from the Twin Cities south) or directed southeast from Superior through Douglas, Washburn, Sawyer, Rusk, Taylor, and Clark Counties. Active rail line segments in Ashland County, parts of Polk, Trempealeau (south of Arcadia), and Washburn Counties did not carry goods in 2019 (**Figure 9-5**).

The Northwest Region has the highest proportion of White population of all WisDOT Regions, at 91.8% (**Table 9-2**). Active freight rail lines largely pass-through rural communities, which are predominantly White, with some exceptions (**Figure 9-9**). Two out of four of these areas with concentrations of racial and ethnic minorities are near rail lines that did not carry any freight in 2019. These areas with concentrations of racial and ethnic minorities include:

- Arcadia, where the Ashley Furniture Distribution Center and Ashley Furniture Intermodal Facility are located
- Northeast of Black River Falls in Jackson County containing the Ho-Chunk Nation Reservation and off-reservation trust land

- The southern edge of the Lac Courte Oreilles Reservation in Sawyer County
- Northern Ashland County including the Bad River Reservation

Of these, only the block group in Sawyer County was near a high-volume line which carried more than 20 million tons of goods in 2019. The rail line in Arcadia is relatively low volume, carrying between two to 10 million tons of goods in 2019. The census block group near Black River Falls which contains high populations of racial and ethnic minorities is near the convergence of two lines which each carried two to 10 million tons of goods. The Bad River Reservation in Ashland County has a freight rail line running through it that carried no traffic in 2019.[5]

Areas near active freight rail lines generally do not include high-concentrations of low-income residents. The few areas of concentrated poverty in the Northwest Region include parts of Barron, Chippewa Falls, Eau Claire, Menomonie, River Falls, Superior, and parts of the Lac Courte Oreilles Reservation. However, only the clusters in Superior and the southern part of the Lac Courte Oreilles Reservation in Sawyer County are near tracks with higher levels of freight rail activity in 2019 (**Figure 9-5**).

Bi-state MPOs in the NW Region

The Northwest region is home to one bi-state MPO, the Metropolitan Interstate Council (MIC). The MIC serves as the MPO for the Duluth-Superior metropolitan area. While this analysis only looks at Wisconsin residents, it is important to note that MIC planning activities impact both Wisconsin and Minnesota residents in the metropolitan planning area.

Freight rail is active in Duluth because the Port of Duluth is among the busiest in the country and is served by four Class I rail lines. Demographic patterns near rail facilities in Superior are like those in Duluth. Census block groups adjacent to active freight rail lines and/or the Port in Duluth tend to have higher proportions of racial and ethnic minorities and low-income populations than the rest of the planning area.

Most households in the Northwest Region have access to a vehicle. Most concentrations of zero-vehicle households are near active rail lines. Higher concentrations of zero-vehicle households are located near active freight lines in parts Barron, Black River Falls, Chippewa Falls, Eau Claire, Medford, Rice Lake, Superior, and southeastern Eau Claire County.

High-concentration youth block groups in Superior and northeastern Clark County are potentially most impacted by rail, as they are intersected by rail lines that carried at least 20 million tons of goods in 2019.

[5] *The 2021 sale of this private CN rail line may increase future freight traffic*

The Northwest Region has the second highest rate of people with disabilities among the state's five WisDOT Regions, at 12.8% (**Table 9-7**). About two thirds of the census tracts with the highest concentrations of people with disabilities are near an active freight rail line. Many of these areas are intersected by the high-activity rail line segments emanating south from Superior.

Intermodal Facilities in the Northwest Region

All three of the truck/rail intermodal facilities in Wisconsin are in the Northwest Region, in Arcadia, Chippewa Falls, and New Richmond. Among these, Arcadia is the only facility where a relatively high proportion of nearby residents are racial and ethnic minorities (**Figure 9-9**). About half of those living in the two census block groups closest to the Arcadia truck/rail intermodal facility are racial or ethnic minorities – comprised almost entirely of residents of Hispanic or Latino ethnicity. Just north of the Arcadia truck/rail intermodal facility, youth (age 9 and under) make up a 25% of the population – more than double the rate for the Northwest Region (11.7%) and state (11.9%) **(Figure 9-12**; **Table 9-5**). Similarly, the census block group containing the New Richmond truck/rail intermodal facility also has a relatively high youth population, at 18.5% (**Figure 9-12**).

The state's three active port/rail intermodal facilities are in the Northwest Region in Superior. The block group in which these ports are located has about double the Regional average rates of racial and ethnic minority residents (16.3% compared to 8.2%) and over three times the Regional rate of low-income residents (37.7% compared to 10.7%). Additionally, the census tract containing the Superior port has nearly double the Regional average rate of people with disabilities (23.8% compared to 12.8%). About 2,400 people live in this census tract.[6]

Racial and ethnic minority and low-income residents, as well as people with disabilities, are more likely to live near a port/rail intermodal facility in the Northwest Region.

[6] *The Census Bureau reports information on people with disabilities down to the census tract level of geography. This differs from the other characteristics explored in this report (e.g., race/ethnicity, etc.), which the Census Bureau publishes data on at the census block group level, a lower (smaller) level of geography that enables greater precision. Multiple census block groups are nested within a single census tract. For this specific location in Superior, there are three block groups nested within the tract. The Census Bureau considers data reliability, disclosure and privacy rules, and the nature of the topics covered when deciding what level of geography (i.e., tract, block group, etc.) data can be published for. One or more of these reasons explains why data regarding people with disabilities by type of disability are available only down to the census tract level, rather than the block group, throughout Wisconsin in the 2015-2019 ACS 5-year estimates.*

Intercity Passenger and Commuter Rail in the Northwest Region

Summary: *The Northwest Region has no in-state passenger rail stations, but there are connections to stations across the Minnesota border in Winona, Red Wing, and the Twin Cities. There are five Wisconsin Thruway bus stops along the State Trunk Highway (STH) 29 corridor, and one in Duluth. Equity groups in the southern portion of the Northwest Region are near intercity passenger rail facilities and bus stops. There are no commuter rail facilities within the Region.*

Active rail lines in the Northwest Region are limited to freight rail. Amtrak's Empire Builder passenger rail service operates just across the Mississippi River in Minnesota. The route serves passenger stations in Winona, Red Wing, and Saint Paul; the next closest station is in La Crosse in WisDOT's Southwest Region. Each of these passenger stations is served by two trains per day, one in each direction. A new passenger rail corridor service called the TCMC is expected to begin in 2024, adding an additional trip in each direction between Chicago and the Twin Cities.

Amtrak Thruway bus stops are served by intercity bus lines that provide connections to Amtrak service. These are limited in the Region to the STH 29 corridor, in Abbotsford, Chippewa Falls, Eau Claire, Menominee, and Stanley. Additionally, there are two Amtrak Thruway bus stops just across the Minnesota border in Duluth, to the benefit of those living in Superior, Douglas County, and surrounding communities. This includes people with disabilities (**Figure 9-13**) who are less concentrated near the rail stations or Thruway bus stops.

Several equity demographic groups have concentration near the five Thruway bus stops at rates nearly double the Regional averages: racial/ethnic minorities (**Figure 9-9**), low-income residents (**Figure 9-10**), and zero-vehicle households (**Figure 9-11**).

However, except for Superior, residents of the northern half of the Region have greater distances to both passenger stations and Thruway bus stops. The counties of Ashland, Bayfield, Douglas, and Sawyer have 79% of American Indian/Alaska Native residents in the Northwest Region.

There are census block groups in Ashland, Bayfield, and Sawyer Counties that are greater than 40% racial and ethnic minority populations, each of which are near or are adjacent to Native American Tribal lands. The Region also has concentrations of low-income residents in central Sawyer and Washburn Counties.

Figure 9-9: Racial and Ethnic Minority Populations – Northwest Region

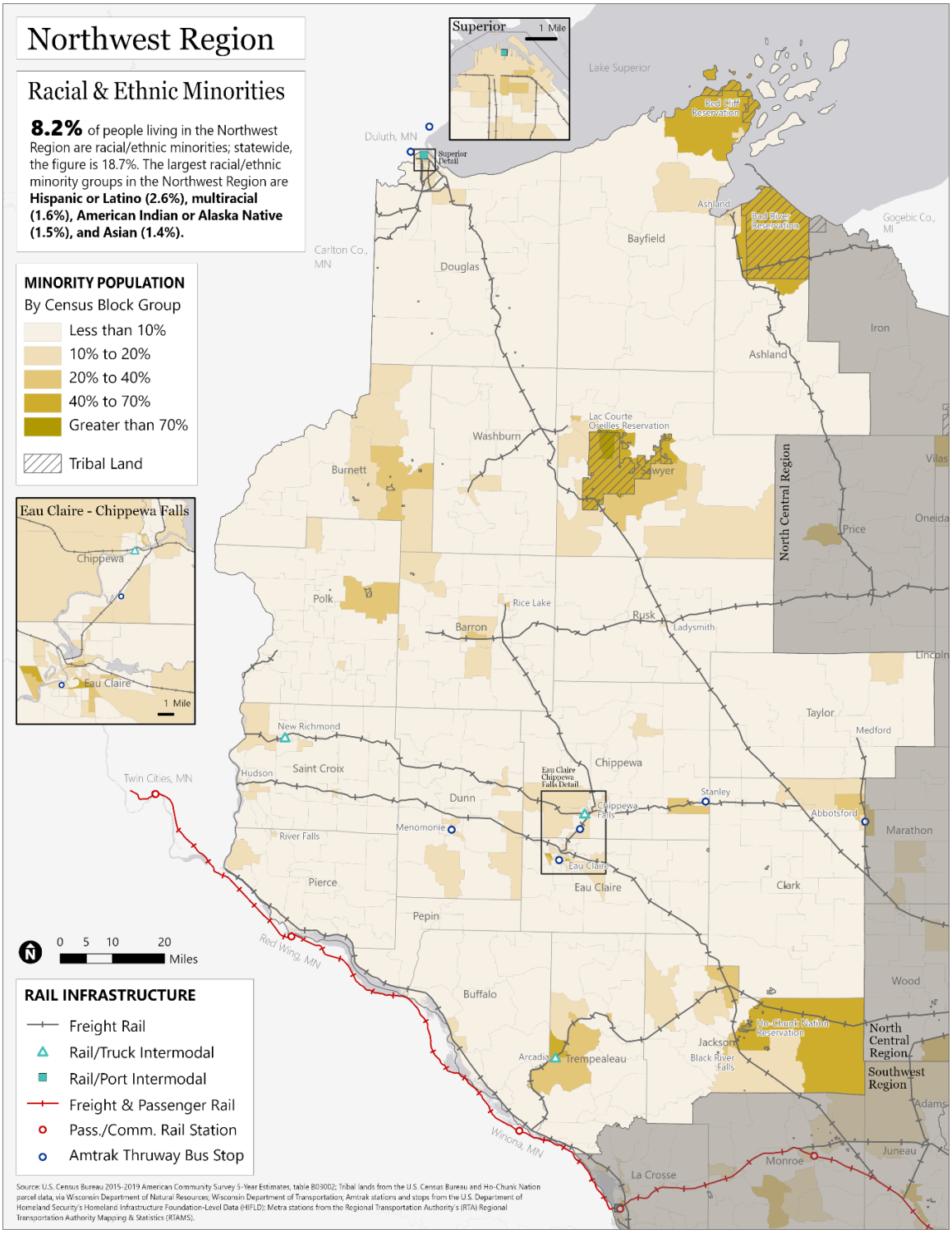


Figure 9-10: Low-Income Populations – Northwest Region

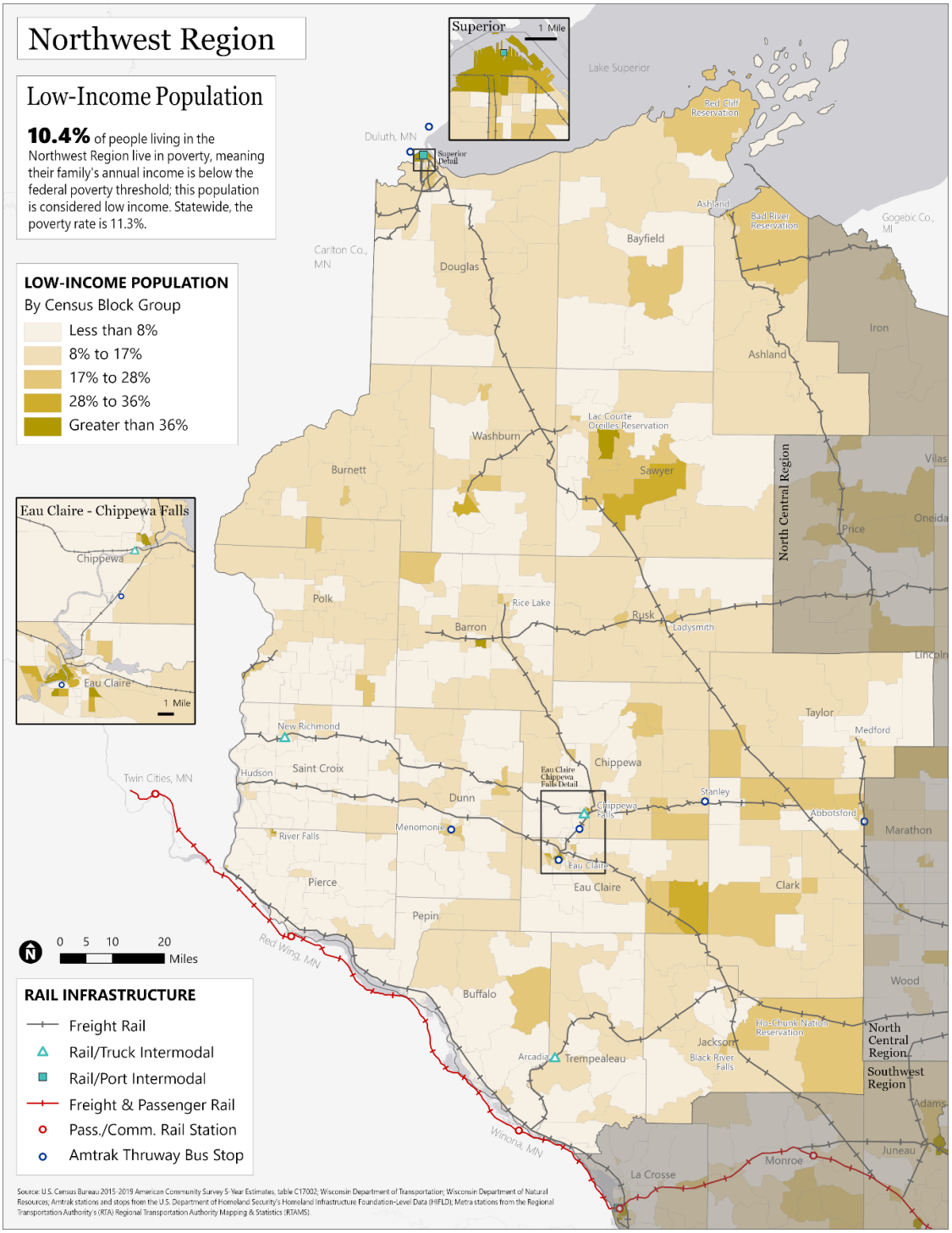


Figure 9-11: Zero-Vehicle Households – Northwest Region

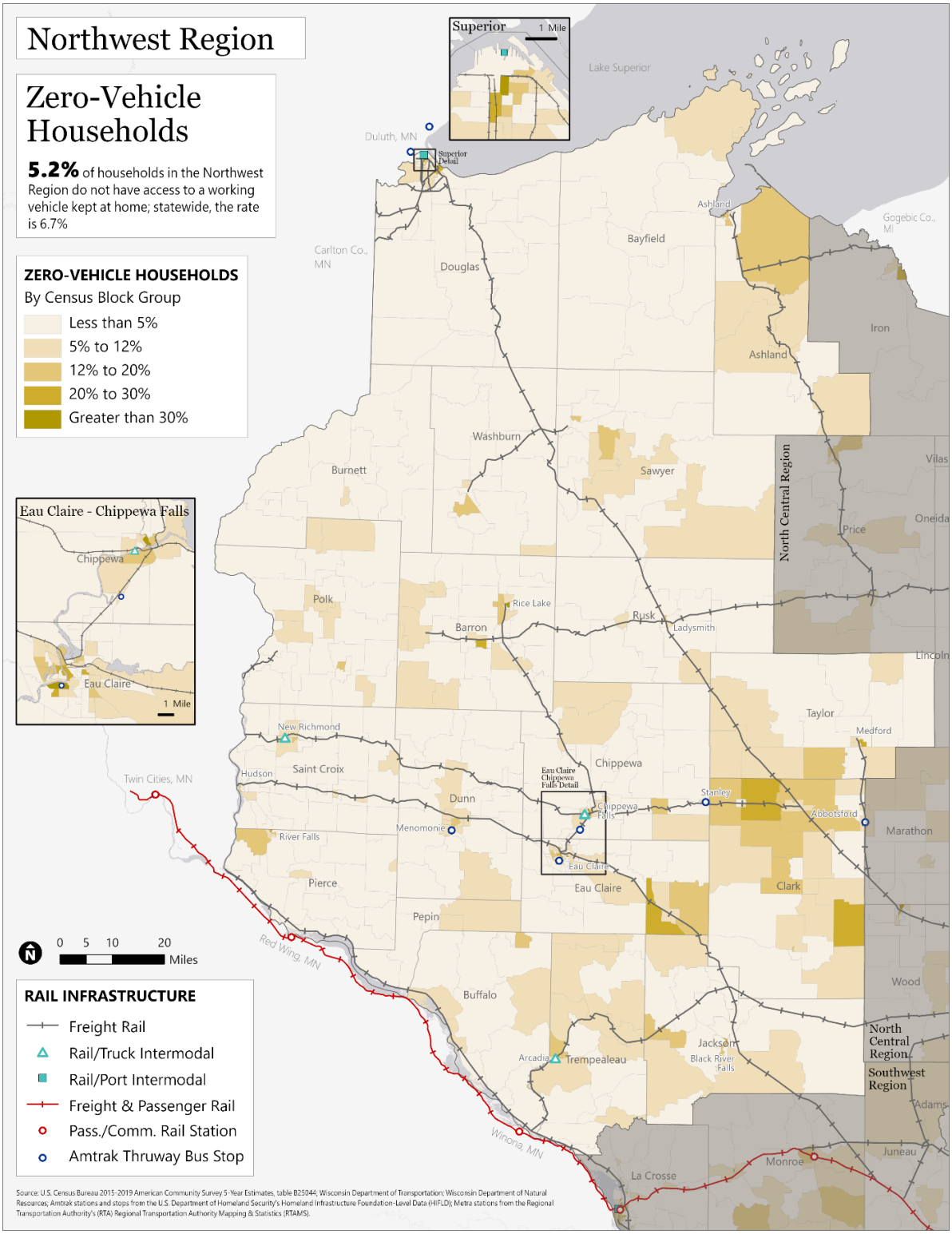


Figure 9-12: Youth Populations – Northwest Region

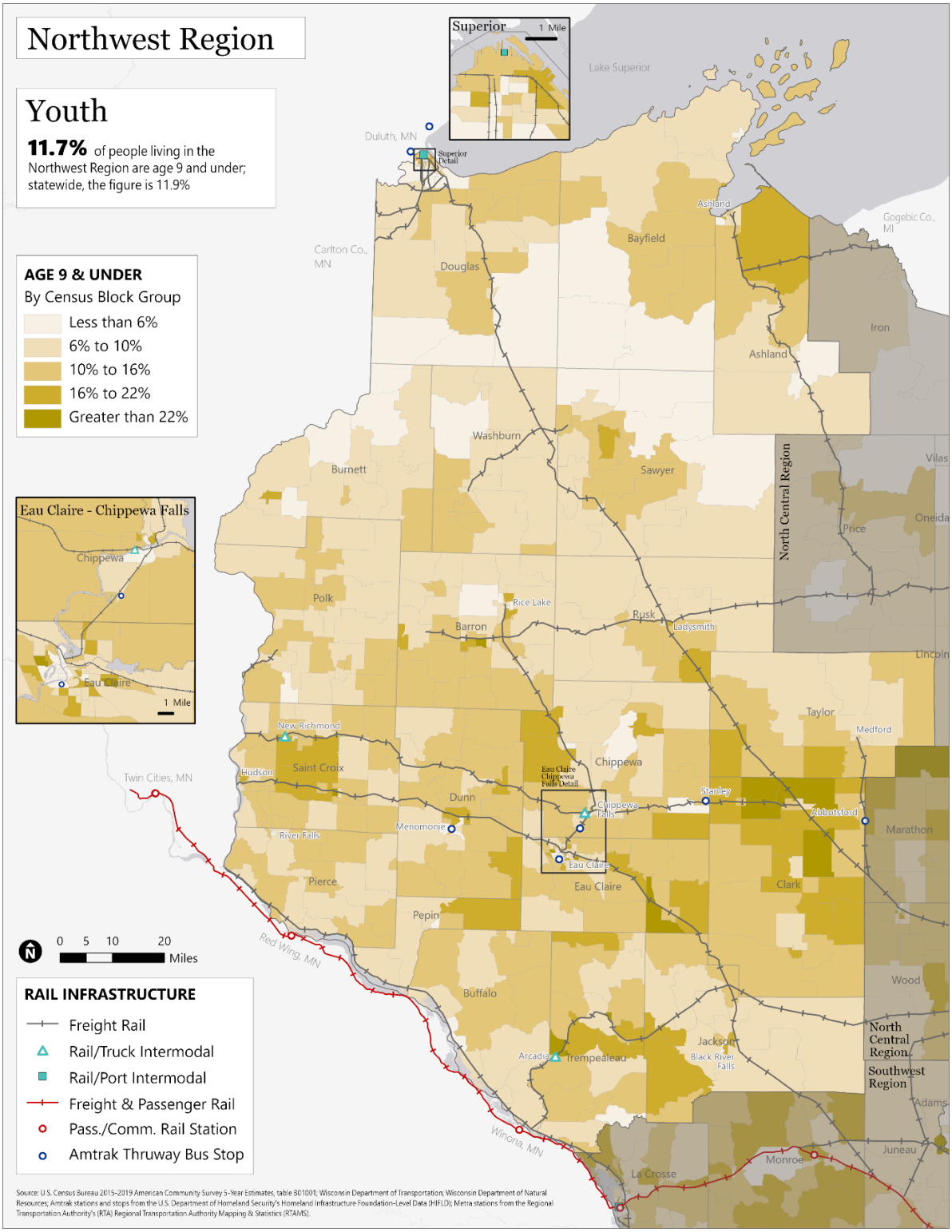
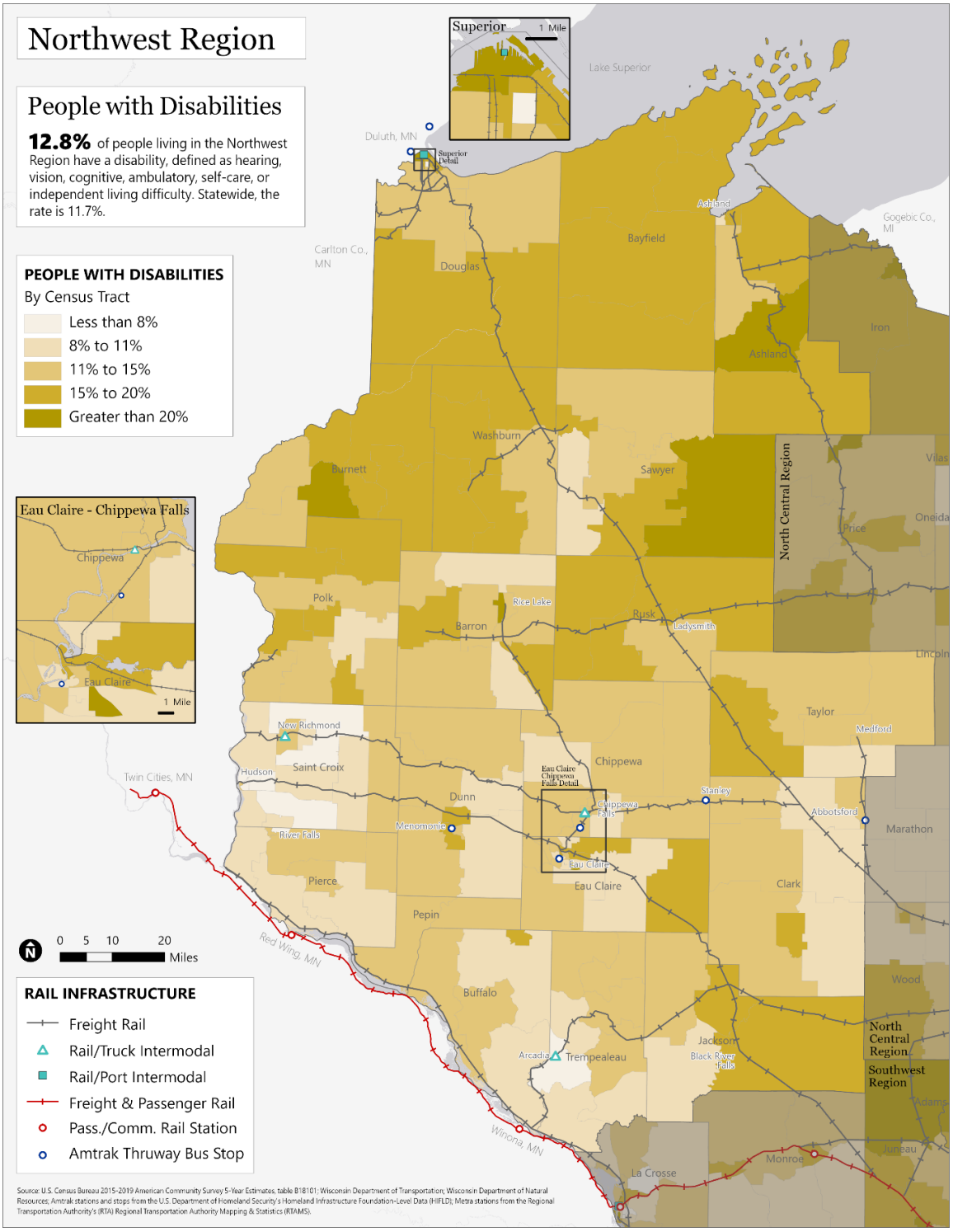


Figure 9-13: People with Disabilities – Northwest Region



Northeast Region

Counties: Brown, Calumet, Door, Fond du Lac, Kewaunee, Manitowoc, Marinette, Oconto, Outagamie, Sheboygan, and Winnebago.

Summary: *The Northeast Region has the second most freight rail activity of all WisDOT Regions. It is home to 11 Amtrak Thruway bus stops, but no intercity passenger rail stations. There are few concentrations of equity demographic groups, however these areas are often near active rail lines.*

Seniors, youth, and people with disabilities in the Northeast Region are geographically widely dispersed. Detailed maps for these demographic groups are included in **Technical Appendix: Equity Reference Maps and Analysis Methodology**.

Freight Rail in the Northeast Region

Summary: *There are many miles of freight rail track, but only one line carries at least 10 million tons of goods per year. It does not enter the Region's largest population center, Green Bay. There are no active truck-to-train intermodal facilities or ports with rail to ship transfers. Concentrations of equity groups tend to be near low-volume freight rail lines.*

Active Rail Lines in the Northeast Region

The Northeast Region has the second highest amount of active freight rail track per square mile of all WisDOT Regions, however most rail line segments in the carried less than two million tons of goods in 2019. The rail line segments connecting Fond du Lac, Neenah, Oshkosh, and surrounding areas had the greatest tonnage of goods (more than 20 million tons) carried in 2019 (**Figure 9-5**).

The Northeast Region does not contain any of the state's three rail/truck intermodal facilities or the three rail/port intermodal facilities.

Racial and ethnic minority residents make up 12.8% of all residents of the Northeast Region (**Table 9-2**). Few census block groups have concentrations of racial and ethnic minorities. Those that do are mostly near active freight rail lines, though these lines carried lower amounts of freight. These concentrations near rail lines are primarily located in Appleton, southern Green Bay, Manitowoc, on the border between Menasha and Neenah, and Sheboygan. The Oneida Reservation Native American Tribal lands are not near active freight rail lines (**Figure 9-14**).

About 9% of the Northeast Region's residents are considered low income – the lowest rate among the five WisDOT Regions (**Table 9-4**). There are few concentrations of low-income

residents within the Region. Those relatively few block groups that have concentrations of low-income residents are mostly near freight rail lines with low activity in Appleton, Green Bay, Manitowoc, Marinette, and Two Rivers. Rail line segments adjacent to Lake Winnebago carried more than 20 million tons of goods in 2019, so there are potentially greater impacts to the concentrations of low-income residents in Fond du Lac, Neenah, and Oshkosh (**Figure 9-5**). The concentrations of low-income residents within the Oneida Reservation and in Pulaski are not near active rail lines.

About 5% of the people in the Northeast Region do not have access to a vehicle. Most zero-vehicle households are not located close to a rail line. The few concentrations of zero-vehicle households near rail lines are in and around Appleton, Fond du Lac, Green Bay, Manitowoc, Marinette, Menasha, Neenah, Oshkosh, and Sheboygan. The only high-concentration zero-vehicle household census block groups in the Northeast Region not near freight rail is in Sturgeon Bay in Door County (**Figure 9-16**).

Intercity Passenger and Commuter Rail in the Northeast Region

Summary: *There are no intercity passenger rail stations in the Northeast Region, but several Thruway bus stops serve locations where there are concentrations of equity populations. There is no commuter rail in the Region.*

There are no intercity passenger or commuter rail stations in the Northeast Region. Eleven Amtrak Thruway bus stops along the I-41 and I-43 corridors provide connections to Amtrak passenger rail stations in Milwaukee (Empire Builder and Hiawatha routes) and Columbus (Empire Builder route) to the south. The Thruway bus stops connect most of the Region's largest population centers. Except for the stops in Marinette and Oconto, all Thruway bus stops are accessible via local transit service – whether fixed route bus or shared-ride on-demand services.

Most of the Region's census block groups with 40% or greater racial and ethnic minority populations are adjacent to a Thruway bus stop or have local transit service to a bus stop. These are mostly in Appleton, Green Bay, Manitowoc, and Sheboygan. The western half of the Oneida Reservation does not have access to a Thruway bus stop but is 70% racial and ethnic minority.

There are census block groups in Green Bay, Manitowoc, and Marinette with greater than 28% low-income residents, that are adjacent to or with transit access to Thruway bus stops. Census block groups in Neenah and the Oneida Reservation with greater than 28% low-income residents do not have Thruway bus stops nearby (**Figure 9-15**).

Thruway bus stops also serve the majority of the Region's block groups with high proportions of zero-vehicle households, although those in Sturgeon Bay and Two Rivers are not near Thruway bus stops (**Figure 9-16**).

Figure 9-14: Racial and Ethnic Minority Populations – Northeast Region

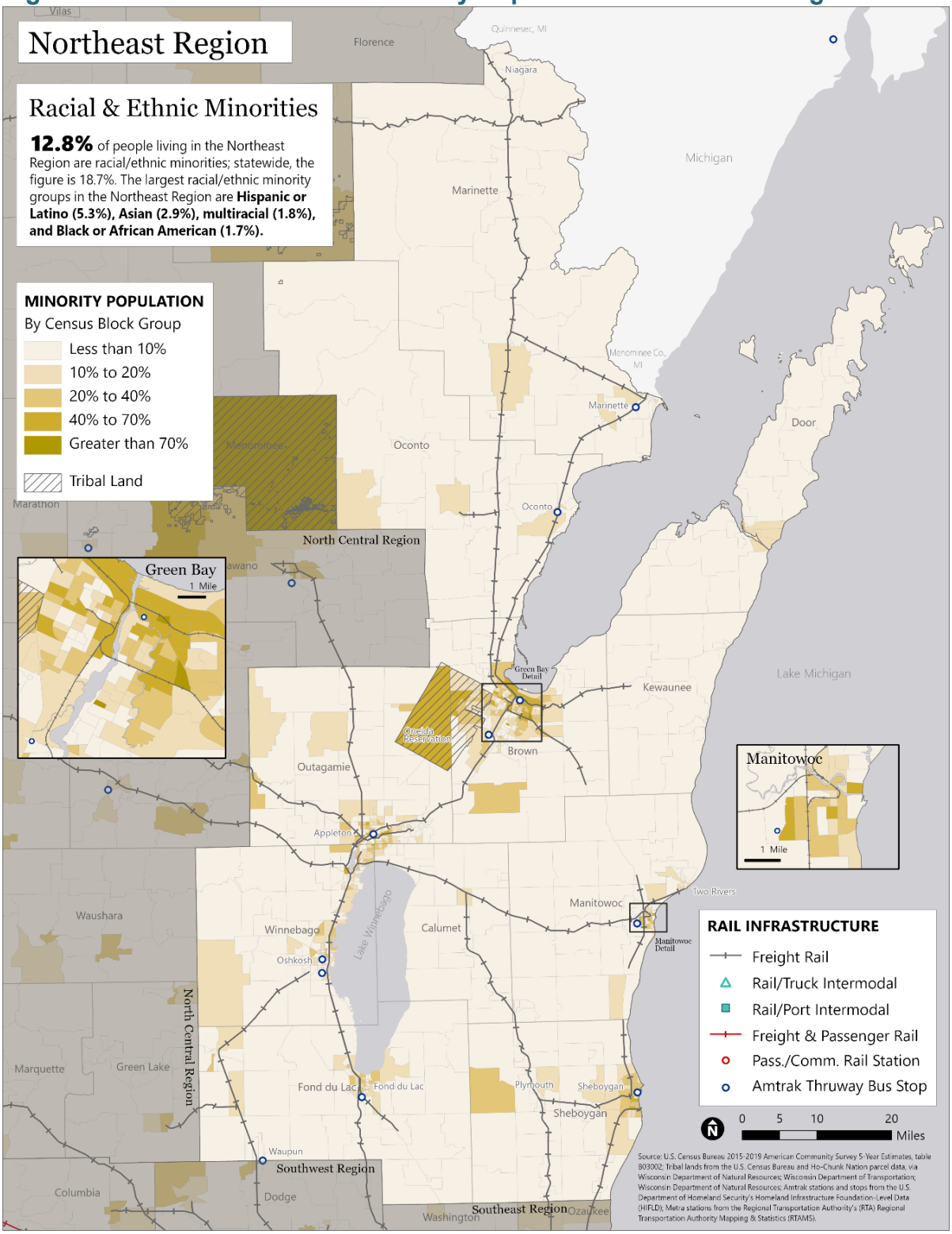


Figure 9-15: Low-Income Populations – Northeast Region

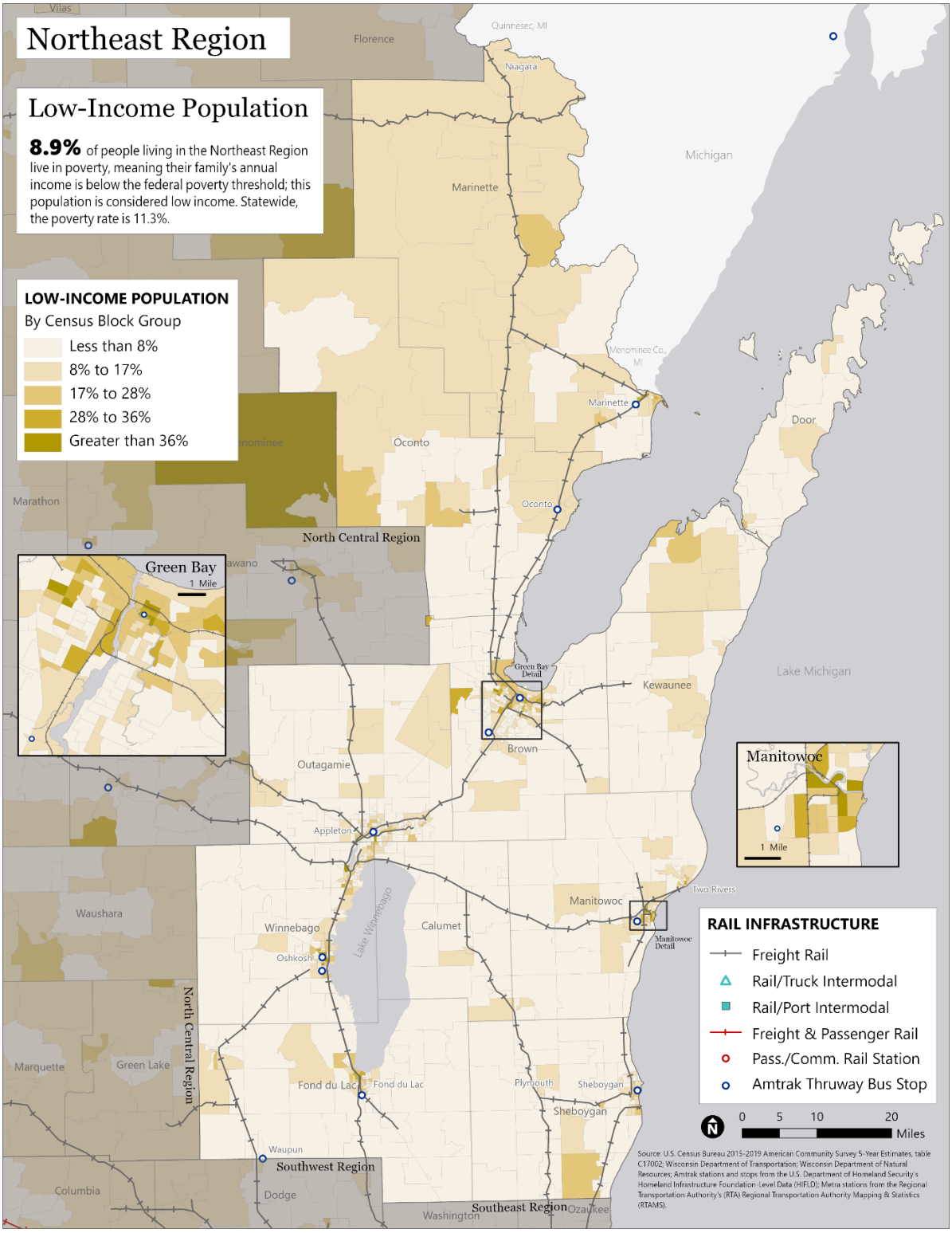
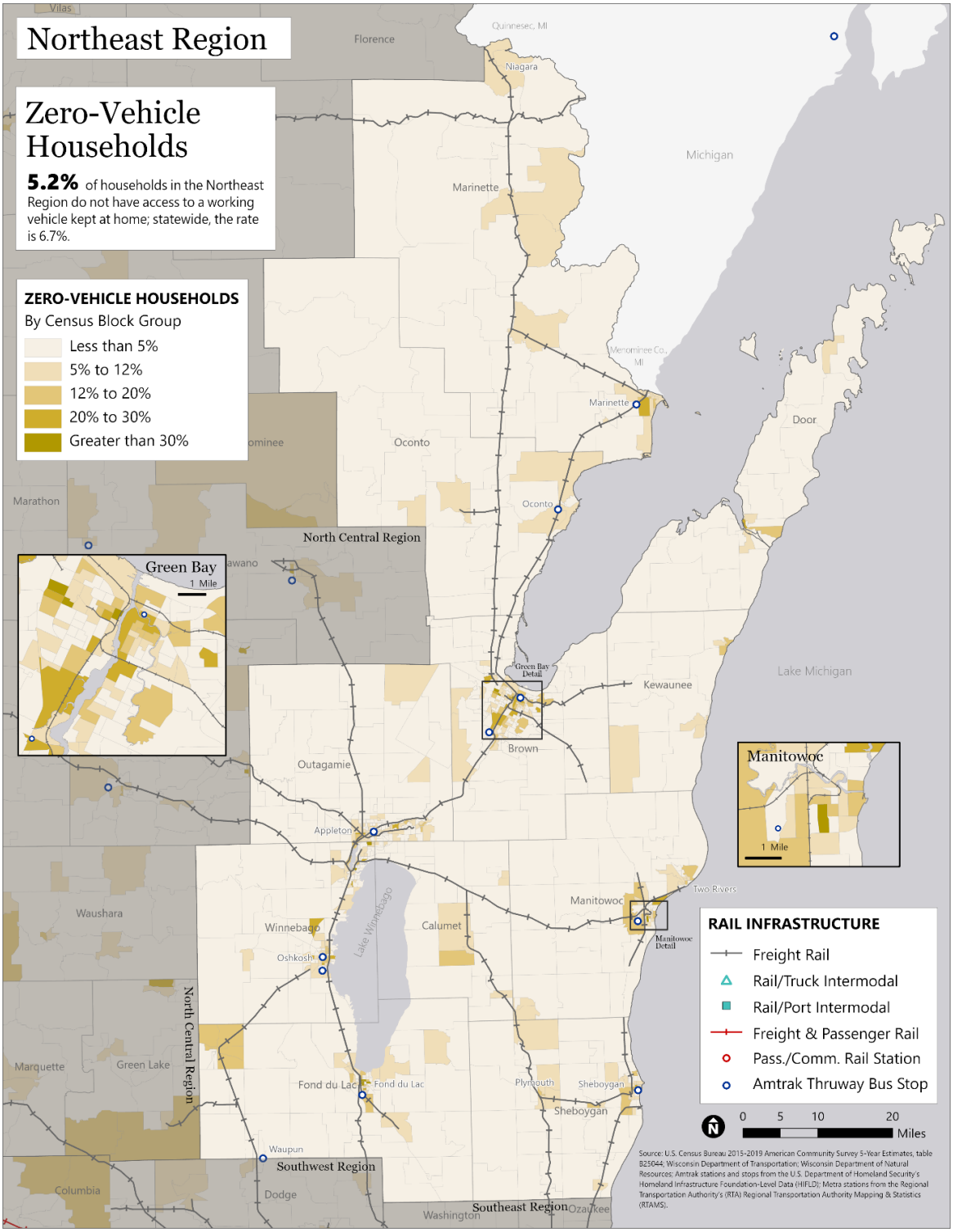


Figure 9-16: Zero-Vehicle Households – Northeast Region



Southwest Region

Counties: Columbia, Crawford, Dane, Dodge, Grant, Green, Iowa, Jefferson, Juneau, La Crosse, Lafayette, Monroe, Richland, Rock, Sauk, and Vernon.

Summary: *Most counties within the Southwest Region have active rail lines, one of which carries intercity passenger rail. Two major rail lines carry high volumes of goods. Most freight rail activity takes place in the northern and western portions of the Southwest Region.*

Seniors and youth in the Southwest Region are geographically widely dispersed. Detailed maps for these demographic groups are included in **Technical Appendix: Equity Reference Maps and Analysis Methodology**.

Freight Rail in the Southwest Region

Summary: *Only a few rail lines along the Mississippi River and in the northern portion of the Southwest Region carry high volumes of goods. Convergences of lines near Madison and in Rock County create a dense network of lines, but they are generally low volume. The Port of La Crosse is the Region's only intermodal facility. Concentrations of equity groups tend to be near freight rail lines, except for some rural areas.*

Active Rail Lines in the Southwest Region

Active freight rail lines pass through the many towns and cities in the northern and eastern portion of the Southwest Region, and along the state's western border. Many miles of these rail line segments were highly active in 2019, carrying more than 20 million tons of goods. The most active rail lines parallel the Mississippi River corridor in Crawford, Grant, La Crosse, and Vernon Counties. The line that connects the Milwaukee area to the Mississippi River corridor also carries high volumes through Columbia, Dodge, Jefferson, Juneau, Monroe, and Sauk Counties. Alternatively, a nearly equal amount of linear rail lines in the Region carried relatively few goods in 2019 (less than two million tons), including all line segments in Madison and Dane County and the majority of the lines in Rock County, where population is most concentrated in the Region.

The Southwest Region has the second highest racial and ethnic minority population of all WisDOT Regions, behind only the Southeast Region. Fourteen percent of Southwest Region's residents are racial and ethnic minorities (**Figure 9-17**). Census block groups with where racial and ethnic minorities are at least 40% of the population make up a small fraction of the block groups near rail in the Region. The largest concentrations of racial and ethnic minorities tend to

be in Dane and Rock Counties. The locations of concentrations of racial and ethnic minorities are in:

- La Crosse
- Northeast and south City of Madison
- Rock County, especially in Beloit and southeastern Janesville
- Sun Prairie
- West central Watertown
- Near Tribal lands in Monroe and Sauk Counties

The areas with high concentrations or racial and ethnic minorities in Dane, Rock, and Sauk Counties overall had relatively light freight rail activity in 2019, as these lines carries less than two million tons. The freight rail lines near block groups with high concentrations or racial and ethnic minorities in La Crosse County, Monroe County, and Watertown are both high volume lines carrying more than 20 million tons of goods in 2019.

An estimated 11.6% of people living in the Southwest Region live in poverty and are considered low-income residents[7] (**Figure 9-18**). Among census block groups near active freight rail lines, nearly all have less than 17% low-income populations, while only about one-tenth have at least 28% low-income. Most high-concentration low-income block groups in the Southwest Region are near active freight rail. The high-concentration low-income block groups are in:

- Beloit
- Eastern La Crosse
- Northeast and South Madison
- Central Sauk County
- Central Vernon County (not near freight rail)

Only those block groups in La Crosse and Sauk County are adjacent to freight rail lines with high activity.

[7] *Census Bureau estimates of people experiencing poverty exclude people living in group quarters. The Census Bureau's definition of group quarters includes institutional quarters such as correctional facilities, nursing homes, psychiatric hospitals, as well as non-institutional quarters, such as college dormitories, military barracks, group homes, missions, or shelters. Thus, the large college dormitory populations in the Southwest Region – particularly in Madison and La Crosse – are not reflected in the low-income population estimates shown in Table 9-4 and Figure 9-1.*

Over 6% of households in the Southwest Region are zero-vehicle households – the second highest rate among the five WisDOT Regions (**Table 9-8**). Areas of the Region with clusters of block groups with relatively high proportions of zero-vehicle households near active freight rail include Beaver Dam, Beloit, central Janesville, La Crosse, central Madison and surrounding communities, Monroe, Portage, and Watertown (**Figure 9-19**). These areas are largely near low volume lines, except for Beaver Dam, La Crosse, Portage, and Watertown.

Multi-state MPOs in the SW Region

The Southwest region is home to two bi-state MPOs which are primarily in Wisconsin: The State Line Area Transportation Study (SLATS) which serves as the MPO for the Beloit metropolitan area including parts of Illinois, and the La Crosse Area Planning Committee (LAPC) which serves as the MPO for the La Crosse metropolitan area including parts of Minnesota. The Dubuque Metropolitan Area Transportation Study (DMATS) is a tri-state MPO serving portions of Iowa, Illinois, and Wisconsin, but is not WisDOT-led. While this demographic analysis only looks at Wisconsin residents, it is important to note that SLATS and LAPC planning activities impact both Illinois and Minnesota residents in their metropolitan planning areas.

The Beloit metropolitan area in Wisconsin has higher populations of racial and ethnic minorities than the SW Region. The same is true for the portion of the planning area in South Beloit, though to a lesser extent. Like Beloit, there are census block groups with relatively higher proportions of racial and ethnic minorities and low-income households near freight rail lines in South Beloit.

In La Crosse, there are census block groups near freight rail facilities with relatively high populations of racial and ethnic minorities and zero-vehicle households. These trends are not as apparent within the portion of the La Crosse metropolitan planning area in Minnesota. The La Crescent area is relatively higher income, though a significant population of low-income households exists near freight rail lines north and east of USH 14/61 and west of the CP rail line.

Intermodal Facilities in the Southwest Region

The Southwest Region contains one of the state's three active port/rail intermodal facilities. The La Crosse port/rail intermodal facility is located along the Mississippi River north of downtown La Crosse near the city's Amtrak station. The block groups nearest the port/rail intermodal facility have below Regional and state average rates of youth and seniors, but above average rates of racial and ethnic minorities, low-income residents, and zero-vehicle households (**Figure 9-17**; **Figure 9-18**; **Figure 9-19**). The census tract that contains the intermodal facility has an above-Regional average and above state average rate of people with disabilities (**Figure 9-20**).

Intercity passenger and commuter rail in the Southwest Region

Summary: *Five intercity passenger rail stations along the Empire Builder corridor serve the northern and eastern portions of the Southwest Region. Amtrak Thruway bus stops in Madison and*

Rock County, and passenger rail in La Crosse, serve the population centers of the Region where concentrations of equity groups are more common.

Five of the state's nine intercity passenger rail stations are in the Southwest Region, though all are in the north and eastern portions of the Region. Each of these stations is served by Amtrak's Empire Builder service, with one train per day each day of the week, in each direction between Chicago and Saint Paul via Milwaukee. Intercity passenger rail stations in La Crosse, Portage, and Tomah are accessible via local public transit options in the immediate areas, but those in Columbus and Wisconsin Dells are not. There are six Amtrak Thruway bus stops in or adjacent to the Southwest Region located in Beaver Dam, Columbus (co-located with the Amtrak station), Janesville, Madison, Portage (co-located with the Amtrak station), Waupun, and South Beloit.

Racial and ethnic minorities make up less than 20% of residents in most of the census block groups around intercity passenger rail stations in the Southwest Region. The block groups near the La Crosse and Portage stations have rates between 30% and 40% (**Figure 9-17**). The block group clusters where racial and ethnic minorities make up at least 40% of residents in Dane and Rock Counties are not near any intercity passenger rail stations. However, those block groups in Janesville and Madison are near Thruway bus stops, and Beloit is served by the South Beloit Thruway bus stop.

Similarly, the Region's areas of concentrated low-income population are generally not well served by intercity passenger rail stations, particularly those near Beloit, Janesville, and Madison. However, these areas are served by Thruway bus stops. Intercity passenger rail stations directly serve concentrations of low-income residents in La Crosse and Portage (**Figure 9-18**). Concentrations of low-income residents in Platteville, Sauk County, and Vernon County are not served by intercity passenger rail stations nor Thruway bus stops.

The Southwest Region's high-concentration zero-vehicle household block groups where at least 20% of households do not have access to a vehicle are in and around Beloit, La Crosse, and Madison (**Figure 9-19**). Zero-vehicle households in La Crosse are served by passenger rail stations, and those in Madison and Beloit are served by Thruway bus stops. Block groups with high concentrations of zero-vehicle households that are not near intercity passenger rail or bus service include Horicon, Mayville, Monroe, Richmond Center, Platteville, eastern Vernon County, Viroqua, Watertown, and Windsor. Of these, only Platteville and Viroqua have access to an alternative transit service that connects to an intercity passenger rail station or Thruway bus stop.

Figure 9-17: Racial and Ethnic Minority Populations – Southwest Region

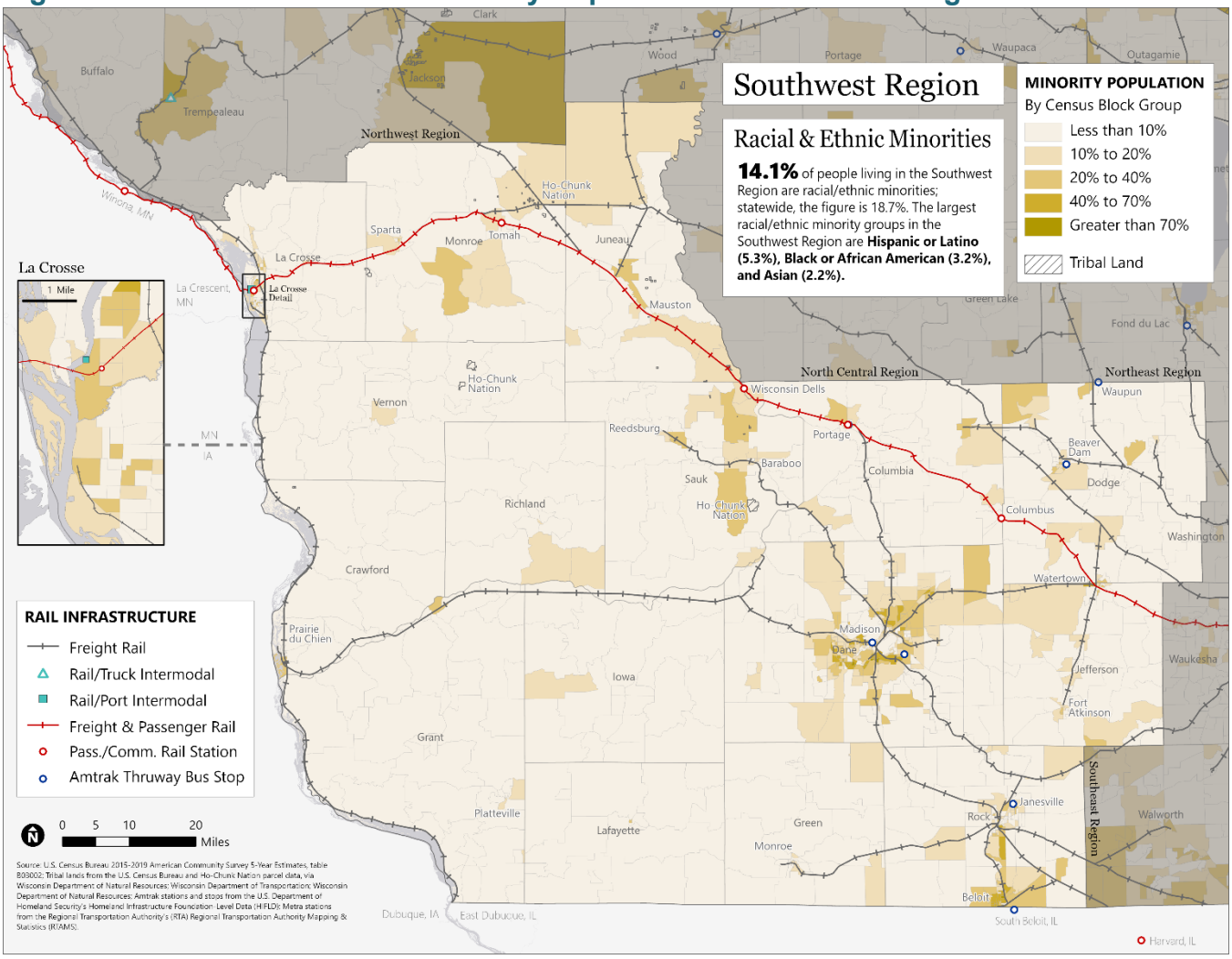


Figure 9-18: Low-Income Populations – Southwest Region

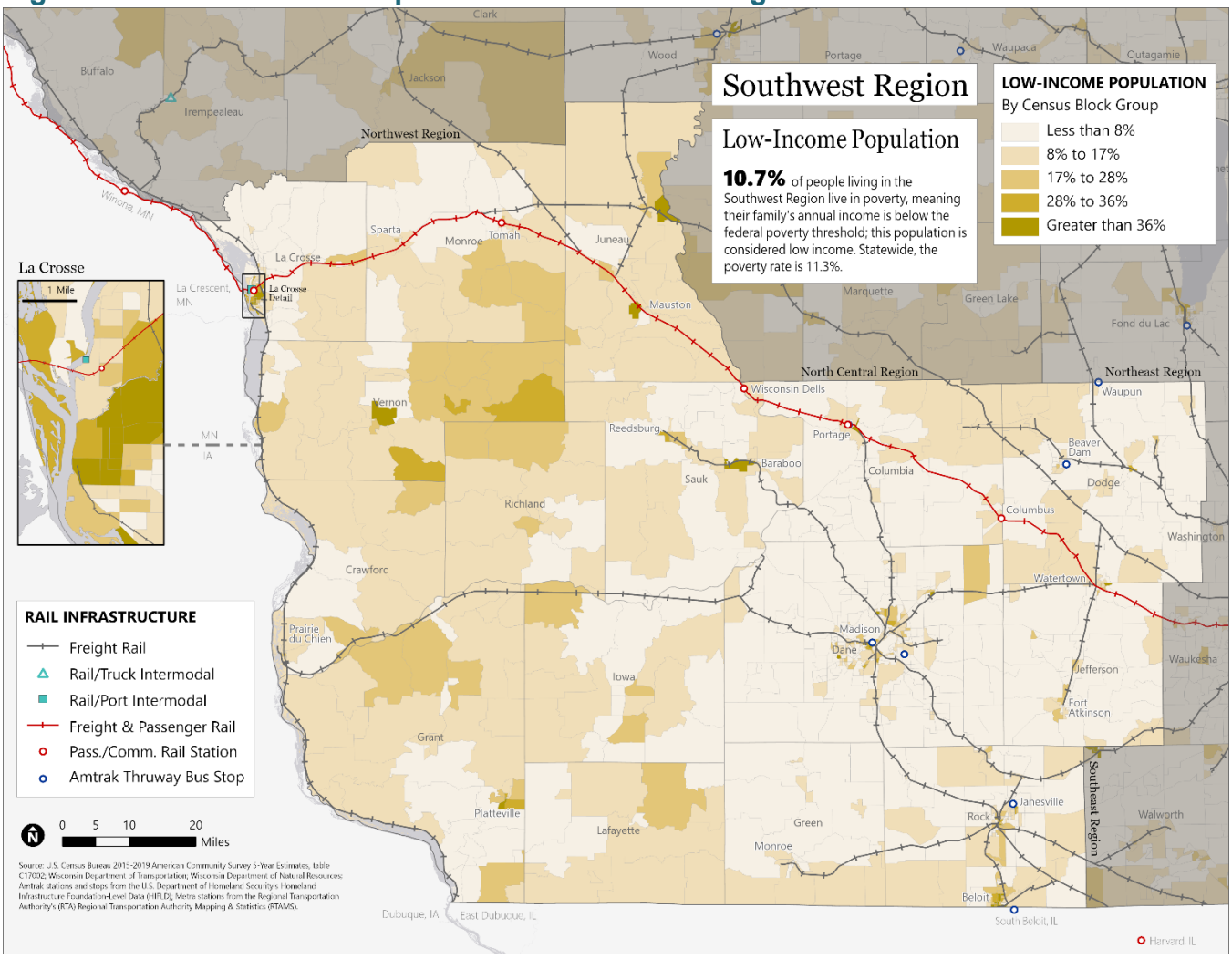


Figure 9-19: Zero-Vehicle Households – Southwest Region

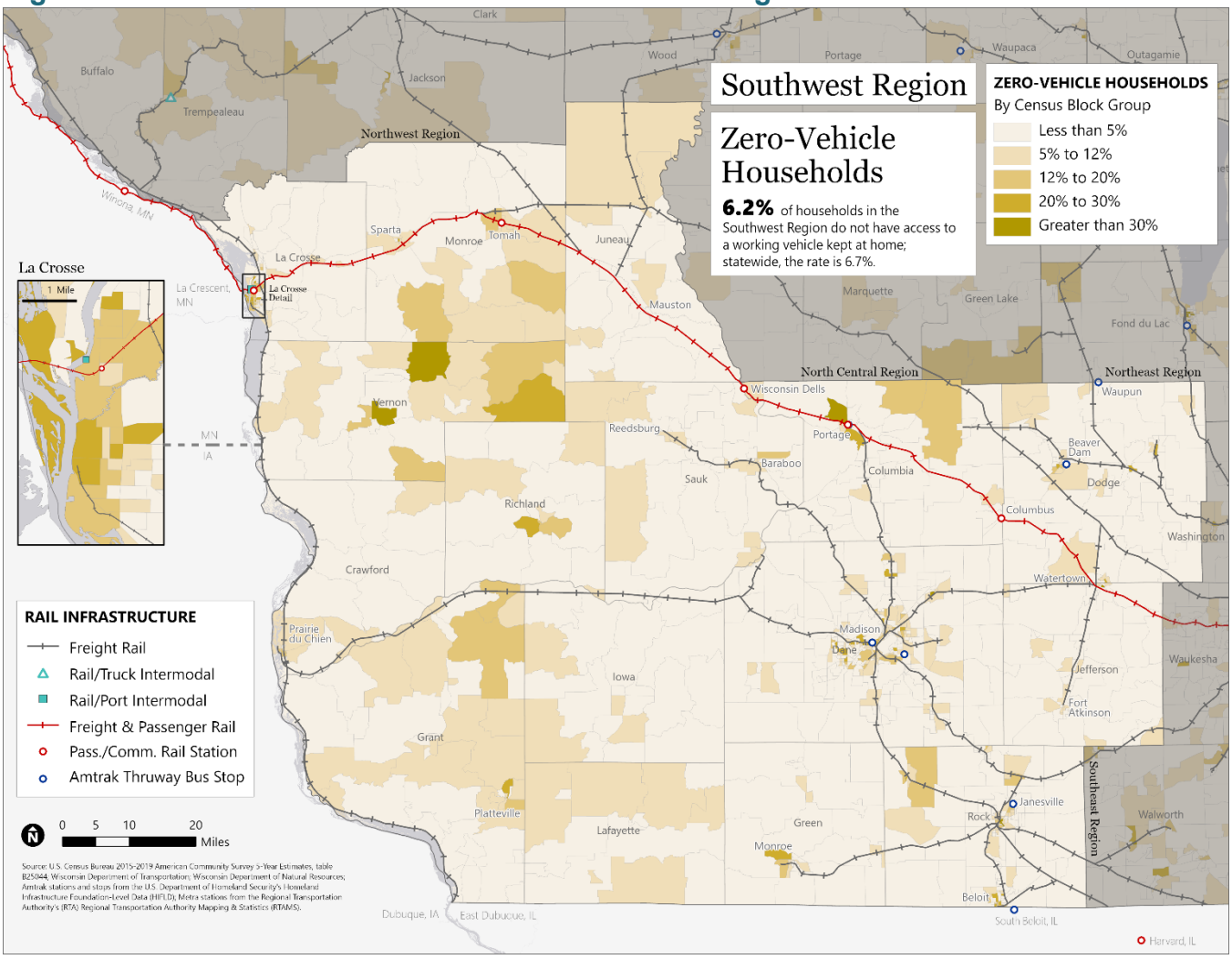
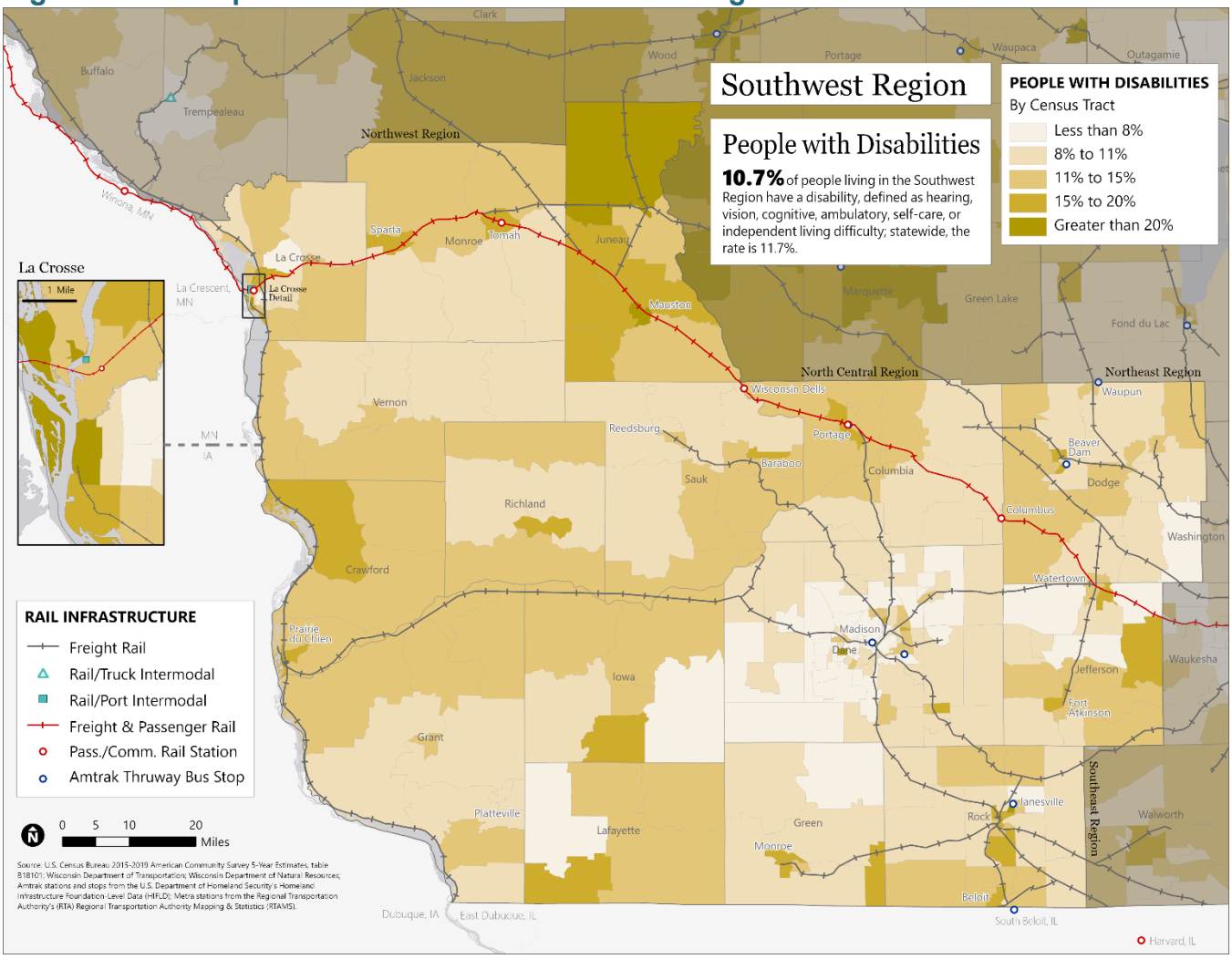


Figure 9-20: People with Disabilities – Southwest Region



Southeast Region

Counties: Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha.

Summary: *The Southeast Region has the most dense and active freight rail of any WisDOT Region in the state. It also has the most active intercity passenger rail with Amtrak's Hiawatha and Empire Builder service. Metra provides commuter rail service to Kenosha. The largest population of equity populations in the state exist in the Southeast Region.*

Seniors and youth in the Southeast Region are geographically widely dispersed. Detailed maps for these demographic groups are included in **Technical Appendix: Equity Reference Maps and Analysis Methodology**.

Freight Rail in the Southeast Region

Summary: *All counties have active freight rail lines, and three rail lines carried at least 10 million tons of goods in 2019. Concentrations of equity populations are common near freight rail facilities, particularly in Kenosha, Milwaukee, and Racine Counties.*

Active Rail Lines in the Southeast Region

The Southeast Region has the highest concentration of active freight rail lines in the state. Every county in the Region has active freight rail lines carrying at least 2 million tons of goods annually except for Ozaukee County, which has a line carrying less than 2 million tons of goods annually. Many of the Southeast Region's rail lines are high-volume, with two lines that carry more than 20 million tons per year and one that carries between 10 and 20 million tons. Active freight rail lines converge in and around Milwaukee and Waukesha Counties, where the highest population densities are located (**Figure 9-5**).

Racial and ethnic minorities make up 31.2% of the population in the Southeast Region, the highest of any WisDOT Region in the state. The Southeast Region has over 58% of the state's total population of racial and ethnic minorities (**Figure 9-21**). Active freight rail lines pass through census block groups where at least 40% of residents are racial and ethnic minorities (**Figure 9-21**), primarily in:

- Kenosha
- Central and Northwest Milwaukee County
- Racine
- Waukesha

The freight rail lines in each of these locations are high volume lines which carried over 20 million tons of goods in 2019. Active freight rail is near most census block groups in the Region where racial and ethnic minorities comprise 40% or more of the total population. Of the racial and ethnic minority residents in these block groups, about half are Black or African American and a third are Hispanic or Latino. The active freight rail lines in census block groups with less than 20% racial and ethnic minority populations tend to be low-volume lines.

Thirteen percent of the Southeast Region's population lives in poverty, the only WisDOT Region in the state which is higher than the statewide average of 11.3% (**Table 9-4**). Census block groups in the Southeast Region where low-income residents make up at least 28% of the population

tend to be located near one or more active rail lines (**Figure 9-22**). High concentrations of low-income residents near active freight rail are in:

- Kenosha
- Central and northwest Milwaukee County
- Racine
- Western Waukesha
- Whitewater
- Union Grove

Rail lines in Union Grove and Whitewater are low volume, moving less than 2 million tons in 2019. The other high-concentration low-income clusters on the list are near rail lines with more than 20 million tons shipped in 2019.

Zero-vehicle households make up 8.8% of all households in the Southeast Region, the highest rate among the five WisDOT Regions (**Figure 9-23**). Many census block groups where at least 20% of households do not have access to a vehicle are located relatively near active freight rail lines. Those that are near high-volume freight rail lines are in north and central Milwaukee County, and Kenosha, Racine, and Waukesha. Delavan and Hartford have block groups with at least 20% zero-vehicle households near low-volume freight rail lines (**Figure 9-23**).

The Southeast Region is home to roughly one-third of the State's population of people with disabilities, though the Region's rate is 11.6%, the third highest of all WisDOT Regions (**Table 9-7**). Census block groups with greater than 20% people with disabilities that are also near active freight rail lines are in northwest, central, and southeast Milwaukee County, Kenosha, and northern Waukesha (**Figure 9-24**).

Intermodal Facilities in the Southeast Region

None of the state's three truck/rail intermodal facilities are in the Southeast Region, but it does have one active port/rail intermodal facility located along Lake Michigan in Milwaukee.

The block group in which the port is located has below average rates of people with disabilities, youth, and seniors compared to the Region. While the block group has below average rates of racial and ethnic minorities, the populations of Asian and Hispanic or Latino residents is higher than the Region and state average. The block group containing the Port of Milwaukee also has over 20% low-income residents and over 10% zero-vehicle households, both greater than the Region and state averages.

Intercity Passenger and Commuter Rail in the Southeast Region

Summary: *Three Amtrak intercity passenger rail stations and one commuter rail station in the Southeast Region are served by multiple routes. Concentrations of equity populations tend to be near Amtrak Thruway bus stops or rail stations.*

The Southeast Region contains four of the nine intercity passenger rail stations and the only commuter rail station located in the state:

- Milwaukee Intermodal Station, served by Amtrak's Hiawatha and Empire Builder
- General Mitchell International Airport Railroad Station (MARS), served by the Hiawatha
- Sturtevant station west of Racine, served by the Hiawatha
- Kenosha Metra station in downtown Kenosha, served by Metra's Union Pacific North line. This is the only commuter rail station in the state.

The Empire Builder line runs one train per day each day of the week, in each direction between Chicago and Saint Paul via Milwaukee. The Hiawatha runs seven round-trip trains per day between Milwaukee and Chicago, but proposed service increases will bring that to ten round trip trains per day. The Kenosha Metra station connects the Region to Chicago, and runs nine Chicago-bound trains on weekdays, five on Saturdays, and three on Sundays. Each passenger station is served directly by local bus service, whether by Milwaukee County Transit System (MTCS), Racine Transit, or Kenosha Area Transit. Two of the state's Amtrak Thruway bus stops are in the Southeast Region, at the Milwaukee Intermodal Station and the MARS station. Both are co-located with the Region's Amtrak intercity passenger and commuter rail stations.

Each of the four intercity passenger rail stations and one commuter rail station in the Region are in or near census block groups where racial and ethnic minorities make up at least 40% of residents. Among the clusters of census block groups in the Region where racial and ethnic minorities make up at least 40% of residents, only those in Waukesha and on the northern edges of Milwaukee County do not have an intercity passenger or commuter rail station in relative proximity. However, these areas do have access to Amtrak passenger rail stations in Milwaukee via local bus service from MCTS or Waukesha Metro Transit (though at least one transfer is required.

Low-income residents and zero-vehicle households make up a relatively large proportion of the population around two of the four intercity passenger and one commuter rail stations in the Region – Milwaukee Intermodal Station Amtrak station and Kenosha Metra station (**Figure 9-22**, **Figure 9-23**). The Sturtevant Amtrak station is surrounded by commercial and industrial activity,

with few people living nearby. It has relatively low rates of low-income residents and zero-vehicle households nearby (**Figure 9-22**, **Figure 9-23**). However, City of Racine residents that live closer to Lake Michigan – where populations of racial and ethnic minorities, low-income residents, and zero-vehicle households are more concentrated – do have indirect access to the Sturtevant Amtrak station via Racine Transit local bus service. The MARS Amtrak station is immediately surrounded by airport, commercial, and industrial activity. The surrounding block groups have below-Region average rates of racial and ethnic minorities and low-income residents, but many of the surrounding census tracts have 15% or more people with disabilities.

Figure 9-21: Racial and Ethnic Minority Populations – Southeast Region

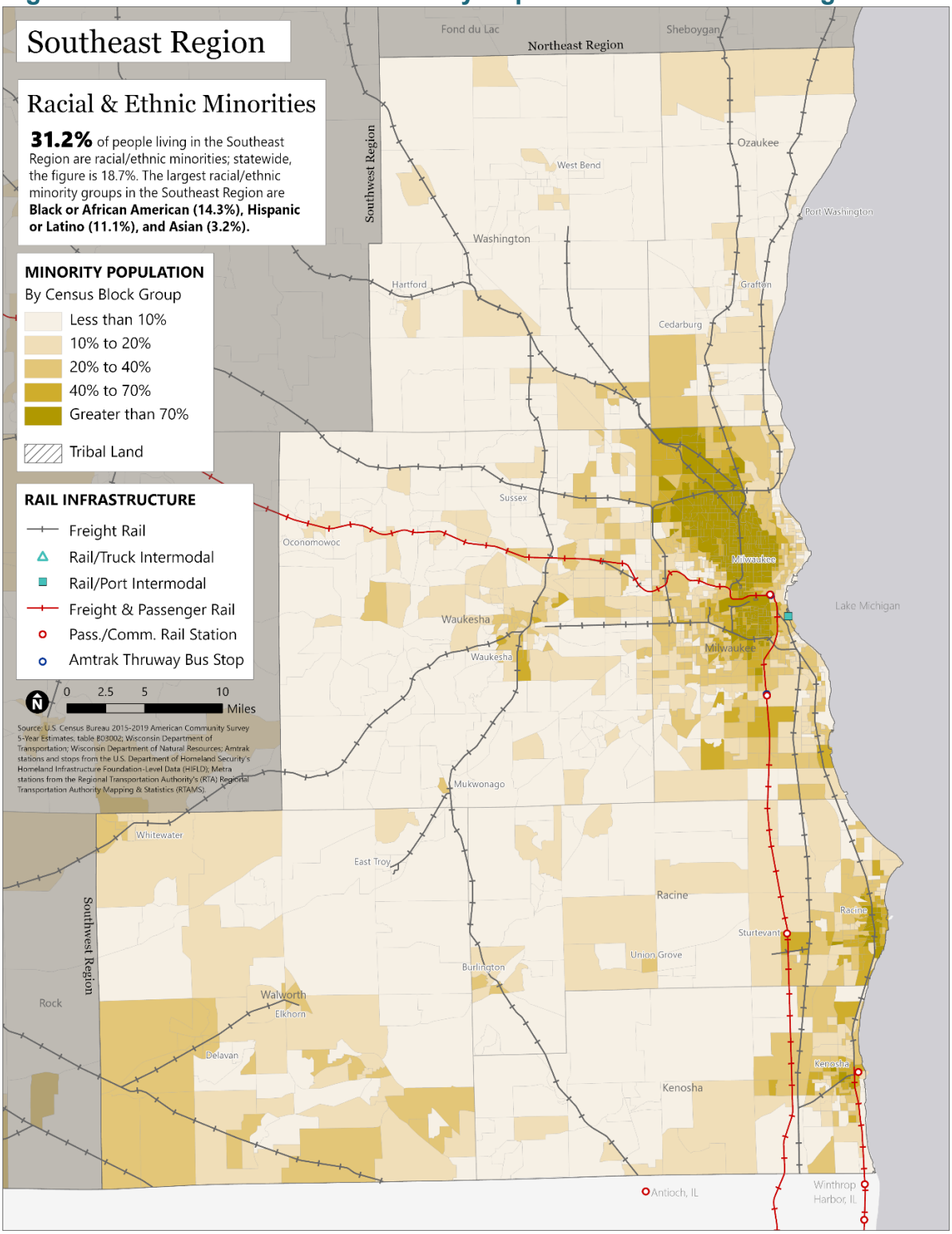


Figure 9-22: Low-Income Populations – Southeast Region

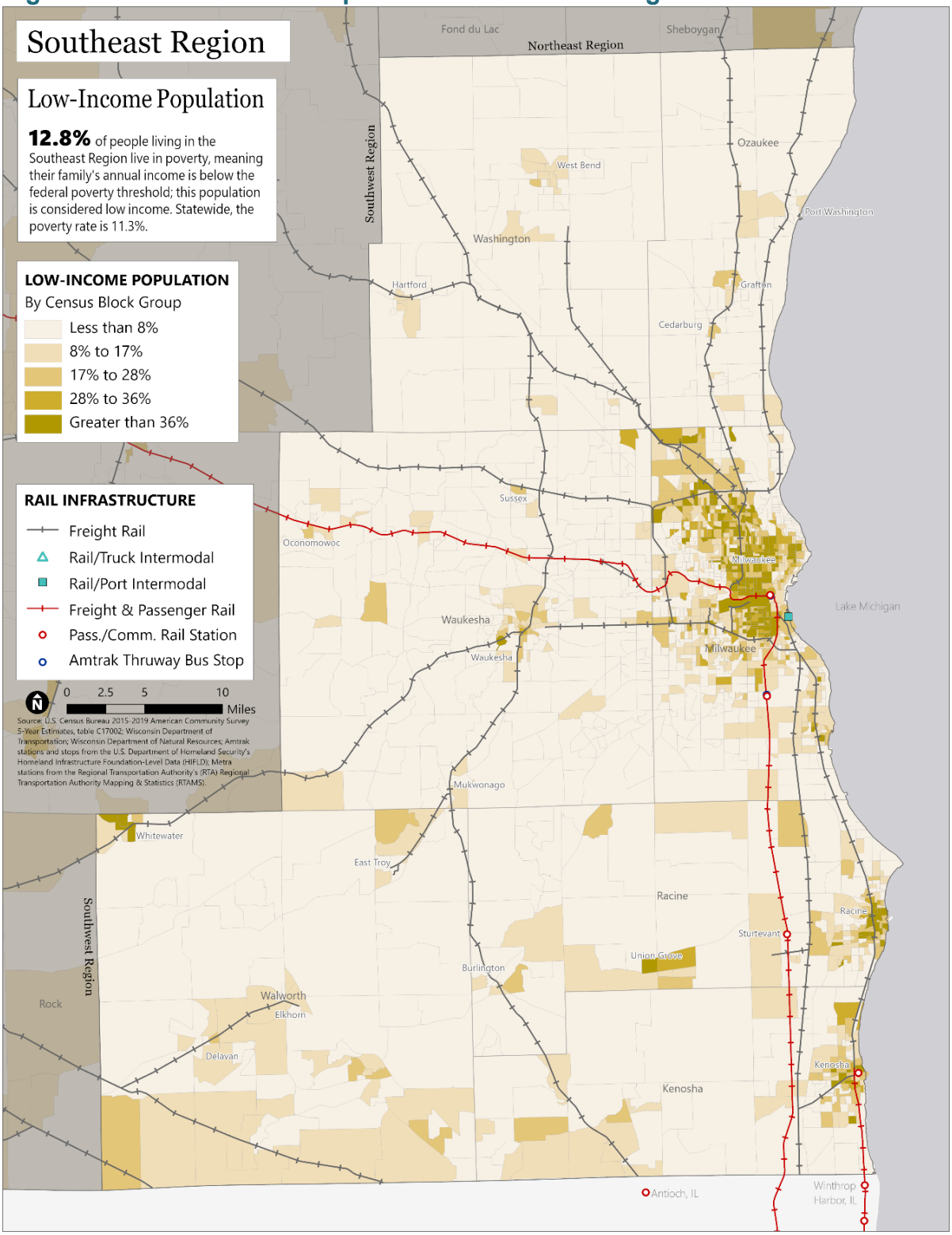


Figure 9-23: Zero-Vehicle Households – Southeast Region

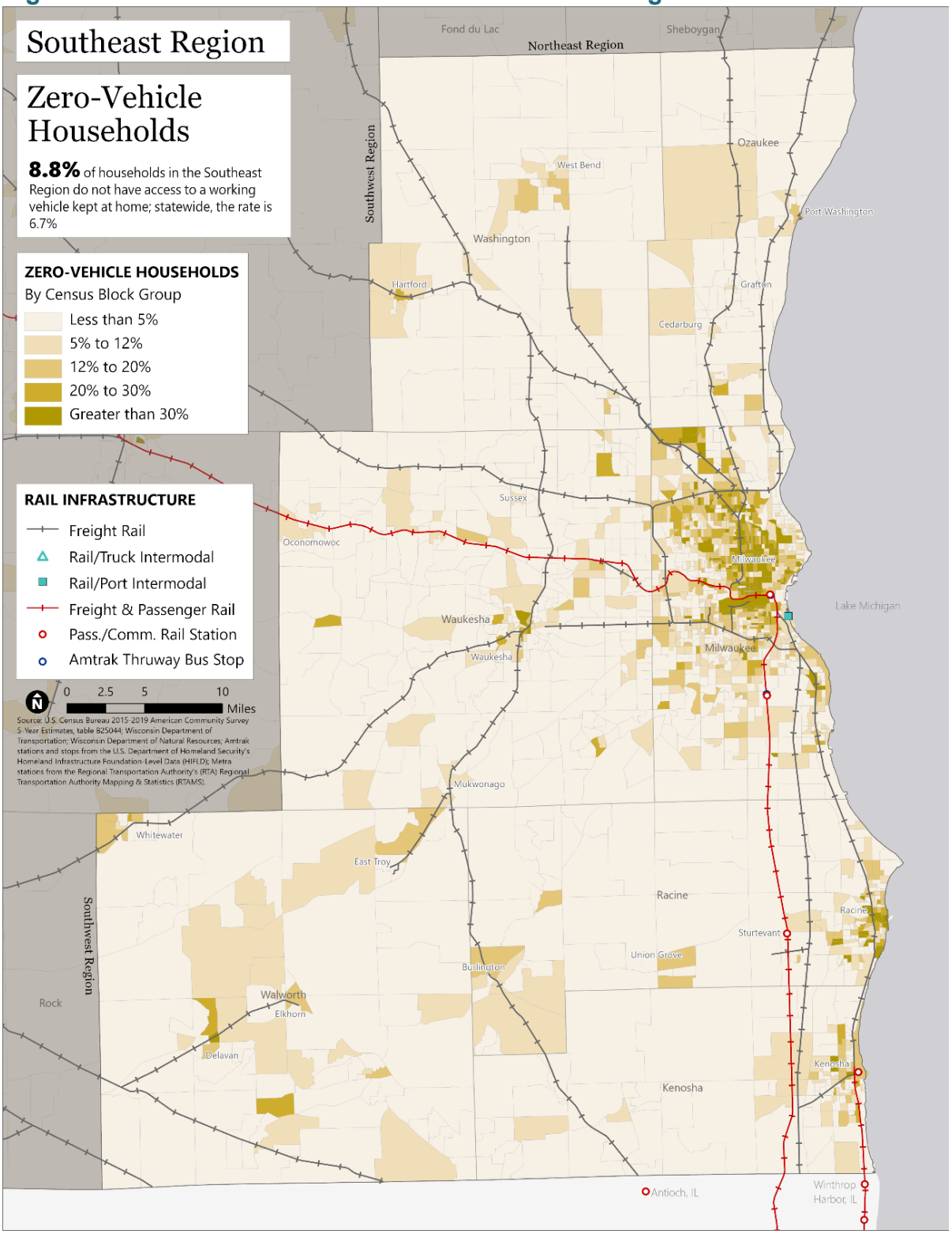
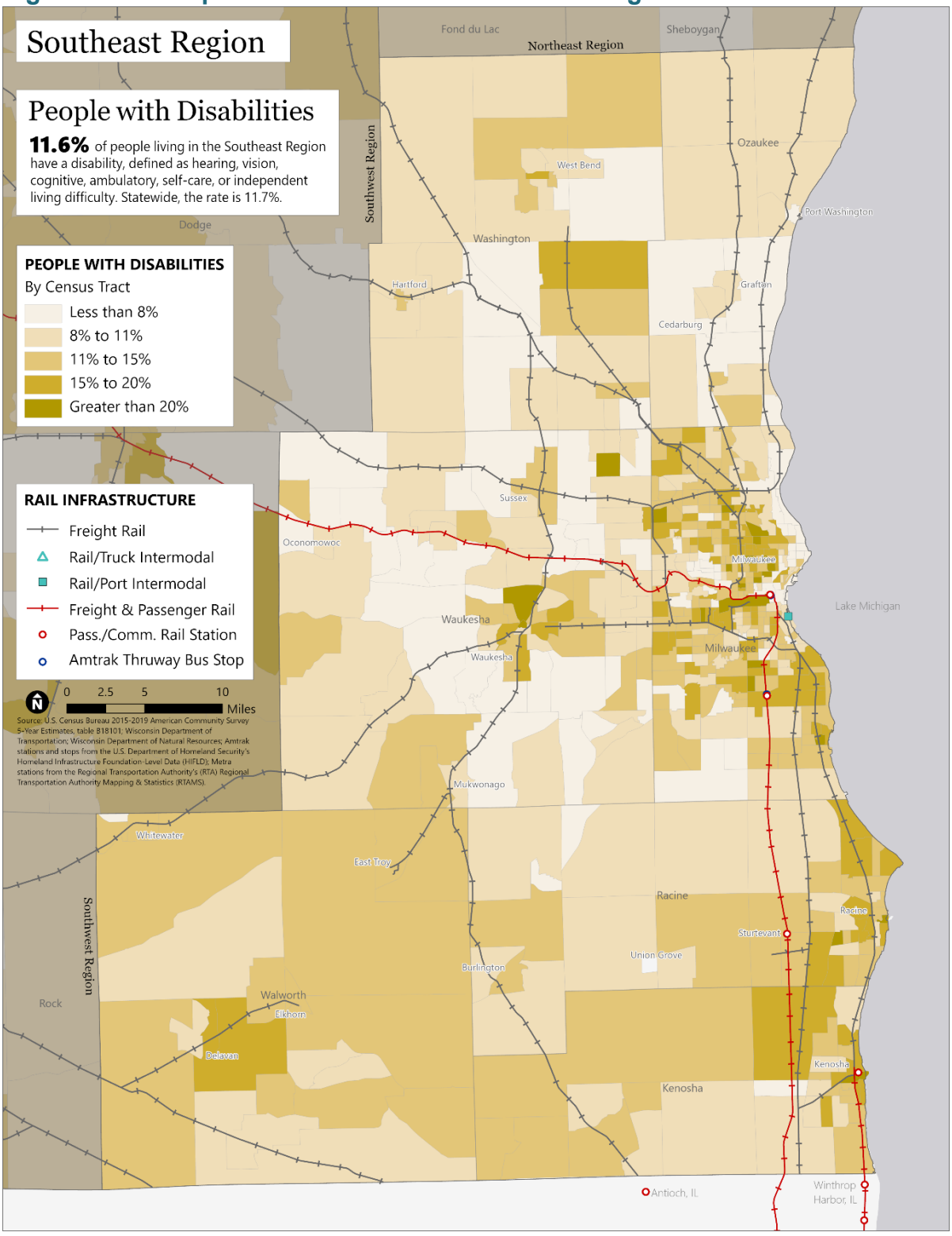


Figure 9-24: People with Disabilities – Southeast Region



Statewide Intercity Passenger Rail Buffer Analysis

To better understand potential benefits and burdens of intercity passenger rail, this section includes a buffer analysis which compares the percentage of equity demographic populations living in proximity to intercity passenger rail stations or Thruway bus stops compared to the statewide population. This provides insight into whether a demographic group is more or less likely than the statewide average to live near an intercity passenger rail station or Thruway bus stop.

The intent of this planning-level assessment is not to identify specific locations where adverse impacts are being borne disproportionately by environmental justice populations, but rather is meant as a starting point to provide statewide context for further investigation and analysis during the project development process for individual projects.

For this analysis, population access to intercity passenger rail facilities was defined as those living within 30 miles of an intercity passenger rail station, or within 15 miles of a Thruway bus stop. These distances were used because they capture suburban or outlying communities around a municipality with a station, reflect a distance where those who cannot drive or choose not to drive to the station can reasonably access, and reflect a reasonable distance people will drive to access an intercity passenger rail station in the Region.

All intercity passenger rail stations and Thruway bus stops in Wisconsin or within 30 miles of the state border were included in the analysis. Data from the 2015-2019 American Community Survey were used at the census block level. Only Wisconsin census blocks were included in the analysis. If any part of a census block was within the buffer area, the entire population for that census block was counted as living within the buffer area. To avoid double counting, if a census block is within 30 miles of an intercity passenger rail station, it was not also counted as within 15 miles of a Thruway bus stop.

This analysis considers demographic groups which are more likely to benefit from the increased multimodal mobility options provided from living in proximity to an intercity passenger rail station or Thruway bus stop. The following demographic groups were included in this analysis:

- Racial and ethnic minorities
- Low-income
- Zero-vehicle households

Minority and low-income populations were included in this analysis because they are environmental justice populations as defined in Executive Order 12898 and are more likely to be without access to a vehicle than the general population (**Table 9-10**).

Buffer Analysis Results

Access to intercity passenger rail is strongly correlated to whether someone lives in the Southeast or Southwest Regions of the state. Generally, the average racial and ethnic minority resident has a shorter distance to an intercity passenger rail station than the average White resident. Wisconsin's intercity passenger rail stations (**Figure 9-2**) are located only in the Southeast and Southwest Regions (**Table 9-3**), where:

- 76.7% of the state's racial or ethnic minority residents live
- 55.0% of the state's White residents live
- 92.1% of the state's Black or African American residents live
- 76.2% of the state's Hispanic or Latino residents live
- 66.6% of the state's Asian residents live
- 25.8% of the state's American Indian or Alaska Native residents live

Table 9-10 illustrates the results of the buffer analysis. Statewide, 53.2% of Wisconsin residents live within 30 miles of an intercity passenger rail station. Together, 70.6% of all racial and ethnic minority groups live within 30 miles of an intercity passenger rail station. Black or African American residents are the most likely demographic group to live in proximity to intercity passenger rail (87.7%). All other racial and ethnic minority demographic groups are more likely than the statewide average to have access to passenger rail, except for American Indian/ Alaskan Native and Native Hawaiian. Of the state's American Indian/ Alaskan Native residents, 74.2% live in the North Central, Northeast, or Northwest Regions where there are no intercity passenger rail stations (**Table 9-3**). Both zero-vehicle households (63.1%) and low-income residents (58.0%) are more likely than the statewide average to have access to an intercity passenger rail station.

Among residents without access to an intercity passenger rail station, 34.0% live within 15 miles of a Thruway bus stop. Racial and ethnic minorities have less access (24.1%) to Thruway bus stops than the statewide average. Black or African American residents have the lowest percentage of residents with access to a Thruway bus stop but not a passenger rail station (10.7%). Demographic groups with better access than the statewide average include American Indian or

Alaskan Native, Asian, and Hawaiian Native or other Pacific Islander. Zero-vehicle households (26.3%) and low-income residents (30.1%) tend to have less access than the statewide average.

Table 9-10: Populations Near Intercity Rail Stations and Thruway Bus Stops

Population Demographic	Statewide Totals	Within 30 miles of intercity passenger rail station		Within 15 miles of Thruway bus stop[8]		Combined rail and bus	
		Total	Percent	Total	Percent	Total	Percent
Total Population	5,790,716	3,083,299	53.2%	1,969,220	34.0%	5,052,519	87.3%
Racial and Ethnic Minority	1,085,117	765,927	70.6%	261,611	24.1%	1,027,538	94.7%
Black or African American	364,060	319,417	87.7%	38,891	10.7%	358,308	98.4%
American Indian or Alaskan Native	46,936	12,489	26.6%	21,101	45.0%	33,590	71.6%
Asian	160,706	95,365	59.3%	60,661	37.7%	156,026	97.1%
Native Hawaiian or other Pacific Islander	2,107	876	41.6%	917	43.5%	1,793	85.1%
Other Race	6,068	4,188	69.0%	1,513	24.9%	5,701	94.0%
Two or More Races	110,848	63,215	57.0%	37,557	33.9%	100,772	90.9%
Hispanic or Latino	394,392	270,337	68.6%	100,971	25.6%	371,348	94.2%
Zero-vehicle household	157,168	99,143	63.1%	41,352	26.3%	140,495	89.4%
Low income	639,160	370,610	58.0%	192,131	30.1%	562,741	88.0%

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates

[8] *This field only includes those who live within 15 miles of a Thruway bus stop but NOT within 30 miles of an intercity rail station. This was done to avoid double counting residents with access to a rail station or a bus stop.*

Overall, there is relatively high access to either an intercity passenger rail station or a Thruway bus stop as 87.3% of residents statewide live within the buffered distances to either.

Racial and ethnic minorities are cumulatively more likely than the statewide average to live close to either an intercity passenger rail station or Thruway bus stop, at 94.7%. Residents who are Black or African American (98.4%), Asian (97.1%), Hispanic or Latino (94.2%), those who identify as two or more races (90.9%), and other races (94.0%) are all more likely than the statewide average to live within 30 miles of an intercity passenger rail station or 15 miles of a Thruway bus stop. American Indian/ Alaskan Native (71.6%) and Native Hawaiian or other Pacific Islander (85.1%) are less likely than the statewide average to live within 30 miles of an intercity passenger rail station or 15 miles of a Thruway bus stop. Both zero-vehicle households (89.4%) and low-income residents (88.0%) have relatively high access to passenger rail stations and Thruway bus stops compared to the statewide average.

Commuter rail stations were not included as part of this buffer analysis. Currently, Metra is the only commuter rail provider operating in Wisconsin, serving Chicago and its surrounding suburbs. Metra commuter rail stations in Illinois located in Antioch, Fox Lake, Harvard, and McHenry are accessible to Wisconsin residents who can drive to them, generally from the Southeast and Southwest Regions.

Equity Context of WisDOT Rail Programs

WisDOT's authority over rail transportation is limited. Of the over 3,200 miles or track throughout the state, approximately 600 miles are WisDOT-owned. Similarly, of the eight passenger rail stations, only two are owned by WisDOT.

Identification of system-wide impacts from rail and potential mitigation strategies occurs during statewide long-range planning activities, such as the Wisconsin Freight Plan, the Wisconsin Rail Plan 2050, and the Wisconsin Highway- Rail Crossing Safety Action Plan.[9]

At a more localized-scale, identification of potential environmental justice impacts and mitigation strategies may occur during project-development and program development. Rail projects that receive state or federal funding are subject to environmental review as part of the Wisconsin Environmental Policy Act (WEPA) or the National Environmental Policy Act (NEPA).

9 Wisconsin Highway-Railway Grade Crossing Safety Action Plan (wisconsindot.gov); ; Wisconsin Department of Transportation State Freight Plan (wisconsindot.gov)

Rail Crossings

Rail related injuries and fatalities have decreased in the last 50 years due to rail crossing safety infrastructure, improvements to train equipment, education, and other measures. WisDOT, partner agencies, and other stakeholders share responsibility for addressing rail safety and security at the state's approximately 6,000 at-grade rail crossings. **Chapter 7 Rail Safety and Security** provides an overview of the location of at-grade rail crossings in Wisconsin, safety issues related to rail crossings, and the roles and responsibilities of WisDOT and its partners.

WisDOT routinely takes into consideration the potential to eliminate crossings when scoping highway improvement projects due to safety benefits of removing rail crossings. However, closing a crossing can create serious impacts, so closure requires coordination with local governments, the railroad company, and the Office of the Commissioner of Railroads (OCR). Eliminating a crossing may result in greater response time for emergency vehicles and greater travel times for drivers, bicyclists, and pedestrians. Crossing closures can also result in connectivity barriers and limit accessibility to resources for those living near rail facilities and for those who are more likely to rely on alternative forms of transportation such as zero-vehicle households. Minority and low-income populations, seniors, and people with disabilities are more likely than the statewide average to live in zero-vehicle households and therefore may be more likely to face greater burdens from rail crossing closures because of the extra travel distances (**Table 9-9**).

WisDOT Freight Rail Programs

WisDOT currently implements two separate freight rail assistance programs:[10]

- Freight Railroad Infrastructure Improvement Program (FRIIP**)**: provides up to 100% loans for projects which connect industry to a national railroad, rehabilitate lines, provide economic development, or improve transportation efficiency, safety, and intermodal freight movement.
- Freight Railroad Preservation Program (FRPP): provides grants to local units of government, industries, and railroads for the purpose of preserving and rehabilitating essential rail lines provided the project is located on or directly associated with publicly owned rail lines or an abandoned rail line.

[10] *For more information on these and other WisDOT rail related programs see **Chapter 12 Detail of Programs to Implement the Plan**.*

Both FRIIP loans and FRPP grants are awarded to projects based on 10 criteria[11], including a consideration of whether a project generates environmental and safety benefits.

Through project selection criteria, WisDOT can incentivize reduced human and safety related impacts. WisDOT can encourage projects to minimize or mitigate environmental impacts that historically have disproportionately affected equity demographic groups. Further, it can encourage projects that improve conditions by incentivizing air quality improvement, connectivity, and safety.

However, these selection criteria do not guarantee that negative impacts are avoided. Improvements to rail service, such as that resulting from WisDOT awarding a FRIIP loan to a private rail line, can sometimes result in the closure of rail crossings.

Amtrak Thruway Bus Service and Station ADA Improvements

WisDOT is committed to improving access of people with disabilities to intercity passenger and commuter rail. This includes finding opportunities to enhance Amtrak Thruway bus service connecting cities to intercity passenger rail stations and ensuring they are ADA compliant.

Thruway Bus Service Improvements

In 2019, WisDOT unveiled a new Amtrak Thruway bus service connecting the diverse northeast part of the state to Amtrak rail service. This service connects residents to the Hiawatha by providing two daily round-trip buses between Green Bay and Milwaukee, with stops in Appleton, Oshkosh, and Fond du Lac. This service has improved access to more transportation options, which is especially important for those with disabilities, seniors, and those who do not have access to a personal automobile.

Passenger Rail Station ADA Improvements

WisDOT maintains an inventory of intercity passenger rail stations, which provides detailed information on the services offered, condition, accessibility, and ADA compliance for each station in Wisconsin regardless of ownership. This inventory identifies improvement needs to improve accessibility and ADA compliance.

[11] *Wisconsin Department of Transportation. "FRIIP Application Instructions" https://wisconsindot.gov/Documents/doing-bus/local-gov/astnce-pgms/aid/friip.pdf*

While WisDOT owns only two passenger rail stations, the Milwaukee Airport Rail Station and Milwaukee Intermodal Station, it supports improvements to others regardless of ownership. WRP 2050 proposes adding money to a station program to be used at passenger, intercity bus, and commuter rail stations for improvements, and adding funding for a passenger and commuter rail study program.

Chapter 6 Wisconsin Intercity Passenger Rail Stations –Corridor and Long-distance Service includes an inventory of each of the passenger and commuter rail stations in the state, and an informational summary of stations outside of the state that provide access for state residents. Since 2010, WisDOT has assisted in improving ADA-compliance and accessibility at passenger rail stations. ADA-compliance improvements made since the previous Wisconsin Rail Plan 2030 (**Table 9-11**).

Table 9-11: ADA Updates to Wisconsin Rail Stations since 2010

Station	ADA Improvements Made
Columbus	• Wheelchair lift • Accessible parking stall • Accessible waiting room • Accessible platform
Portage	• Wheelchair lift
Wisconsin Dells	• Wheelchair lift
Tomah	• Wheelchair lift • Accessible parking stalls • Accessible platform
La Crosse	• Accessible platform

MPO Plans[12]

WisDOT works closely with the state's 14 Metropolitan Planning Organizations (MPOs) to ensure a comprehensive and coordinated approach to state transportation planning in urbanized areas. Several of Wisconsin's MPOs have considered equity and safety as it relates to rail transportation and crossings in their Long-Range Transportation Plans (LRTPs) or other planning studies. Notable examples are included below:

Chippewa-Eau Claire MPO

The Chippewa-Eau Claire MPO LRTP lists the locations of all rail crossings in the planning area and lists crashes that have occurred at those crossings.[13]

Green Bay MPO

The recent Green Bay MPO LRTP includes an environmental justice analysis which examined access to transit by racial and ethnic minorities and low-income populations. The plan

[12] ***Chapter 4 Commuter Rail*** *and* ***Chapter 5 Intercity Passenger Rail – Corridor and Long-Distance*** *include more detailed lists of MPO plans and studies related to passenger rail; The Wisconsin Highway-Rail Crossing Safety Action Plan includes an analysis of safety crossing incidents, including those involving pedestrians (Wisconsin Highway-Railway Grade Crossing Safety Action Plan (wisconsindot.gov))*

[13] *Chippewa-Eau Claire Metropolitan Planning Organization, "Long Range Transportation Plan: Chippewa-Eau Claire Metropolitan Planning Area – 2045" (Feb. 2021) West Central Wisconsin Regional Planning Commission - Chippewa - Eau Claire MPO (wcwrpc.org)*

recommends an increase in transit service. The overall transit system in the Green Bay area includes a Thruway bus stop which connects to passenger rail service in Milwaukee.[14]

Metropolitan Interstate Council

The Metropolitan Interstate Council serves as the MPO for Duluth-Superior and is home to the largest port on the Great Lakes. The Duluth-Superior port has connections to four Class I railroads. The MIC Port Land Use Plan identifies future land use and areas of redevelopment at the port and acknowledges rail connections are valuable for redevelopment opportunities. However, the plan does not contain an equity or environmental justice analysis.[15]

Southeastern Wisconsin Regional Planning Commission (SEWRPC)

SEWRPC's recent LRTP, *VISION 2050*, included an equity analysis which examined potential impacts and benefits of the plan's recommendations on racial and ethnic minorities, low-income populations, and those with disabilities. The plan recommended four commuter rail lines and found that doubling transit services would improve access for these populations, while reduced transit service would disproportionately impact these populations.[16]

In 2020, SEWRPC presented findings of a rail crossing safety analysis to the SEWRPC Environmental Justice Task Force. The analysis looked at pedestrian causalities at public at-grade rail crossings in Southeastern Wisconsin from January 2000 to June 2020. The analysis found a total of 20 pedestrian and bicycle casualties, including 11 fatalities and nine injuries occurred at public railroad-roadway grade crossings in the MPO area.[17]

---

[14] *Green Bay Metropolitan Planning Organization. "Green Bay Metropolitan Planning Organization (MPO) 2045 Long-Range Transportation Plan Update" (Oct. 2020)* Brown County » Departments » Planning and Land Services » Planning » Green Bay MPO 2045 Long-Range Transportation Plan Update (browncountywi.gov)

[15] *Duluth-Superior Metropolitan Interstate Council, "Duluth-Superior Port Land Use Plan" (Dec. 2016)* Microsoft Word - Duluth Port_FINAL.doc (dsmic.org)

[16] *SEWRPC, "VISION 2050, Appendix N: Equity analysis of the Vision 2050 Transportation Component" (Dec. 2020)* 2020UpdateReportFinal.PDF (sewrpc.org)

[17] *SEWRPC Environmental Justice Task Force. Meeting Minutes, (Feb 18, 2020).* Environmental Justice Task Force (sewrpc.org)

State Line Area Transportation Study

The Stateline Area Transportation Study (SLATS) serves as the MPO for Beloit. In 2021, SLATS published a Passenger Rail Study, which broadly assessed the market potential of passenger rail service within the SLATS MPA and examined alignments that would either indirectly or directly serve Beloit. The study considered projected growth in employment and population but did not include an equity or environmental justice analysis. [18]

These and other MPO plans or studies can help WisDOT during project-level environmental review in the identification of equity issues and potential mitigation strategies for state rail projects.

[18] *Stateline Area Transportation Study, "SLATS Passenger Rail Study" (Feb. 2021)* SLATS Rail Study (beloitwi.gov)

Chapter 10 Rail Transportation Policies and Actions

Identifying key trends and issues impacting Wisconsin's rail transportation system is critical to developing policies that lead to effective implementation strategies and investments.

This chapter includes sections on:

- Policies and actions
- Summaries of the purpose of the policies
- Overview of implementing the plan through programs, the financial plan, and the illustrative project listing tables

The policies and actions identified in the Wisconsin Rail Plan 2050 will be implemented through programs and projects. Please see **Chapter 12 Detail of Programs to Implement the Plan, Chapter 13 Financial Plan Overview,** and **Chapter 14 Financial Plan Illustrative Project Listing Tables** for more information.

Policies and Actions

Policies and actions were developed in response to the conditions, issues, and opportunities discussed throughout the plan.

The following tables include policy statements and action items organized by topic area. Some policies and action items are a continuation of WisDOT's existing practices, while others are new.

Federal Railroad Administrative Compliance Items[1]

Federal Railroad Administrative Compliance Items	
WisDOT was designated by the Governor as the State Rail Transportation Authority for purposes of PRIIA in February 2014.	FRA requirement
WisDOT was designated by the Governor as the State Rail Plan Approval Authority for purposes of PRIIA in February 2014.	FRA requirement

[1] *The rail authorities were designated in 2014 and re-affirmed in 2022 (see Gov. Evers letter at beginning of WRP 2050)*

Policy Category: Safety and Security

Policy 1 Address rail crossing safety for vehicles, pedestrians, and bicyclists.	Continuing and new elements
Action 1.1 WisDOT will fund and complete multi-modal crossing safety pilot projects throughout the state to inform WisDOT's engineering standards and priorities.	New (one pilot started in WisDOT's Southeast Region)
Action 1.2 WisDOT will continue to work with the Office of the Commissioner of Railroads, local officials, and private railroad companies to identify potential rail crossing safety improvements such as signals, gates, grade separations, or closing crossings.	Continuing
Action 1.3 For rail corridors with intercity passenger rail service, WisDOT will continue to work with Office of the Commissioner of Railroads to discourage new at-grade crossings of the corridors.	Continuing
Action 1.4 WisDOT will continue to work with the Office of the Commissioner of Railroads and private railroad companies to discourage trespassing by installing fencing.	Continuing
Action 1.5 WisDOT will evaluate the findings of State Highway-Rail Grade Crossing Action Plans for implementation.	New (FRA required plan)
Action 1.6 WisDOT will continue to promote rail safety and security through its Internet site and educational programs such as Operation Lifesaver.	Continuing

Policy 2 WisDOT will work with partners and stakeholders to ensure the safety and security of the rail transportation system.	Continuing elements
Action 2.1 WisDOT will enhance the security of the transportation system by reducing vulnerability.	Continuing
Action 2.2 WisDOT will work with partners to improve emergency response to make the transportation system more resilient.	Continuing
Action 2.3 WisDOT will continue to work with Wisconsin Emergency Management, railroad companies, and other agencies to discuss rail-related security issues.	Continuing

Policy Category: Freight Rail

Policy 1 WisDOT worked with stakeholders to develop an intermodal freight strategy for Wisconsin as part of implementing the Wisconsin State Freight Plan. The resulting adopted strategy is included in the WRP 2050 and will be added to the next Wisconsin State Freight Plan update.	**Continuing, but this is the first time strategy is included in a state plan**
Action 1.1 WisDOT will continue its mission of providing leadership in the development and operation of a safe and efficient transportation system by implementing specific policies and providing assistance to help develop an intermodal freight terminal.	WisDOT adopted Jan. 2020
Action 1.2 WisDOT will assist with applications for federal programs.	WisDOT adopted Jan. 2020
Action 1.3 WisDOT will provide technical assistance and guidance to all eligible organizations which seek to host an intermodal terminal.	WisDOT adopted Jan. 2020
Action 1.4 WisDOT will consider grant/loan applications for infrastructure funding related to development of an intermodal freight terminal as reflected in specific WisDOT programs' guidelines.	WisDOT adopted Jan. 2020
Action 1.5 WisDOT will utilize its network of organizational contacts to open lines of dialogue between local/regional governments and private sector actors.	WisDOT adopted Jan. 2020
Action 1.6 WisDOT will facilitate responses from state agencies to local interested parties as pertains to intermodal-related data, regulations, and funding options as requested.	WisDOT adopted Jan. 2020
Action 1.7 WisDOT encourages all private sector firms to participate in shipping data aggregation efforts.	WisDOT adopted Jan. 2020
Action 1.8 WisDOT encourages discussions between private sector firms that may lead to a collective "breakthrough" in the development of a new intermodal freight terminal.	WisDOT adopted Jan. 2020
Action 1.9 WisDOT will lead coordination efforts between state agencies (including DATCP and WEDC) to ensure a common message about state government's role in intermodal shipping.	WisDOT adopted Jan. 2020
Action 1.10 WisDOT will play a lead role in facilitating communications from state agencies to local interested parties, including local/regional governments and economic development organizations.	WisDOT adopted Jan. 2020

Policy 2 Continue to support shipper access to the rail service network.	Continuing elements
Action 2.1 WisDOT will continue to support freight rail shippers and short-line carriers in preserving service to light-density rail lines.	Continuing
Action 2.2 WisDOT will support freight shipper investments that permit new or continued local service in high-traffic areas.	Continuing
Action 2.3 WisDOT will continue to provide planning support to metropolitan planning organizations and regional planning commissions in considering transportation needs that support developing rail-friendly industrial development sites.	Continuing
Action 2.4 WisDOT will support efforts to improve connections between Wisconsin's short-line railroads and other carriers.	Continuing

Policy 3 Continue to monitor Chicago's effect on Wisconsin's freight service.	Continuing elements
Action 3.1 WisDOT will monitor the CREATE Program's progress and partner with Illinois in supporting new federal funding to move the improvements forward.	Continuing
Action 3.2 WisDOT will explore opportunities to increase freight rail penetration of Chicago-directed traffic flows through intermodal offerings and expanded direct carload service to Chicago interchanges by Wisconsin's short-line partners.	Continuing

Policy Category: Truck borne Freight Connected and Autonomous Vehicle Impacts on Freight Rail

Policy 1 WisDOT recognizes the potential changes widely adopted CAV truck platooning could have on the economics of certain types of freight movements in the state and nationally.	New element
Action 1.1 WisDOT will continue to monitor developments as they could potentially impact existing policies and programs.	New

Policy Category: Long-Term Viability of Rail Corridors

Policy 1 Preserve rail corridors, including rights-of-way, for transportation use through public ownership where appropriate.	Continuing and new elements
Action 1.1 WisDOT will maintain state-owned rail lines to allow service levels to continue uninterrupted and without additional restrictions.	Continuing
Action 1.2 WisDOT will acquire rail lines into public ownership, when appropriate, to preserve essential railroad service.	Continuing
Action 1.3 WisDOT will continue to upgrade and rehabilitate Wisconsin's publicly owned rail line, tracks, and bridges.	Continuing
Action 1.4 WisDOT will work with railroads to ensure that appropriate rail service will be provided to all shippers statewide.	Continuing
Action 1.5 WisDOT will conduct studies of publicly owned rail line infrastructure needs.	Continuing
Action 1.6 WisDOT will develop an analytical policy framework to provide a context for further decision making on the long-term sustainability of publicly owned track and corridors.	New
Action 1.7 WisDOT will work with the Department of Natural Resources and Surface Transportation Board to support the Rails to Trails program to preserve rail corridors for potential reactivation of rail service.	Continuing

Policy Category: Long-Term Viability of Branch and Short Line Network

Policy 1 Preserve Wisconsin's branch and short line network.	Continuing elements
Action 1.1 Continue efforts to preserve rail freight service when the service is judged to be essential, cost-effective, and financially viable, based on transportation efficiency cost-benefit analysis.	Continuing
Action 1.2 Develop outreach to, and foster relationships with, all Wisconsin railroad operators to keep abreast of market demands and railroad interests.	Continuing
Action 1.3 Facilitate relationships to reduce the number of abandonments and strengthen the market for rail.	Continuing
Action 1.4 Monitor railroad activity and create partnerships among businesses and railroads to increase the use of rail.	Continuing
Action 1.5 Work with other state agencies to explore possible state policies to encourage business development within a supporting transportation policy framework.	Continuing

Policy Category: Intercity Passenger Rail Network Investment

Policy 1 WisDOT will continue to support the existing intercity passenger rail system including regional state-supported corridors and Amtrak long-distance routes.	Continuing elements
Action 1.1 WisDOT will continue to optimize intercity passenger rail's role in economic development and job attraction efforts.	Continuing
Action 1.2 WisDOT will continue its commitment to intercity passenger rail's role in multimodal intercity mobility.	Continuing
Action 1.3 WisDOT will pursue connectivity and integration of state supported rail service with the national passenger rail system and other intercity modes.	Continuing

Policy 2 Consider expanded intercity passenger rail service improvements.	Continuing elements with upcoming projects and a new element
Action 2.1 WisDOT will advance increased schedule reliability; increased frequencies; increased travel speeds/decreased travel time.	Upcoming projects
Action 2.2 WisDOT will pursue connectivity and integration with the national passenger rail system; Midwest regional intercity passenger rail system; intercity bus network; airports; and local transit connections.	Continuing
Action 2.3 WisDOT will pursue new opportunities for stops or connection options (rail or connecting bus) in some corridors where it makes sense.	Upcoming projects
Action 2.4 WisDOT will consider possible extensions of already successful routes to other nearby urban areas not currently served directly by rail.	Upcoming projects
Action 2.5 WisDOT will lead efforts to develop cooperative agreements with stakeholders regarding upgraded and expanded intercity passenger rail service as required by the Federal Railroad Administration.	Continuing
Action 2.6 WisDOT will continue to act as a coordinating agency that provides technical support and funding to evaluate the feasibility for intercity passenger rail and commuter rail. (Same policy as in commuter rail.)	Continuing
Action 2.7 WisDOT will facilitate the advancement of intercity passenger rail improvements that are consistent with FRA's Midwest Regional Rail Plan.	New FRA plan
Action 2.8 WisDOT will work with the legislature to seek funding to of the existing passenger rail station (85.022) program as an implementation tool for intercity bus, intercity passenger rail, and commuter rail.	Pursue funding

Policy 3 Continue WisDOT's commitment to intercity passenger rail's role in energy efficiency and air quality through implementation of the intercity passenger rail program.	Continuing and new elements
Action 3.1 WisDOT will evaluate the recommendations of the Governor's Task Force on Climate Change Report that pertains to intercity passenger rail for possible implementation. WisDOT will evaluate intercity passenger rail's relationship with state climate change initiatives.	New
Action 3.2 WisDOT will continue to create opportunities like the Midwest equipment fleet pool to utilize the latest energy efficient locomotive technology.	Continuing
Action 3.3 WisDOT will continue to pursue projects that result in net carbon dioxide emission reductions on corridors with high quality intercity passenger rail.	Continuing

Policy Category: Commuter Rail

Policy 1 Support commuter rail investment.	Continuing and revised elements
Action 1.1 WisDOT will consider partnering with a local or private entity that initiates a commuter rail study/project if supported by the MPO long range transportation plan.	Revised element
Action 1.2 WisDOT will prioritize projects that are in an advanced stage of development. Providing partnership and support may include: • Technical and financial assistance for evaluating the feasibility of commuter rail on a transportation corridor, including possible state funding participation in study efforts. • Participation in the first study phase: feasibility study and ridership demand forecast. Results of these studies will be used to evaluate WisDOT's future involvement in any next phase of study and implementation.	Revised element
Action 1.3 WisDOT will consider partnering on FTA Capital Improvement Grant submittals with public or private sponsors.	Revised element
Action 1.4 WisDOT will continue to act as a coordinating agency that provides technical support and funding to evaluate the feasibility for intercity passenger rail and commuter rail. (Same policy as in intercity passenger rail.)	Continuing
Action 1.5 WisDOT will determine opportunities and challenges of special purpose forms of governance to implement and operate commuter rail.	Revised element
Action 1.6 WisDOT will work with the legislature to seek funding to the existing commuter rail station program (85.064) as an implementation tool for intercity bus and intercity passenger rail, and commuter rail.	Pursue statutory change and funding
Action 1.7 WisDOT will facilitate intermodal connections with commuter rail. As new commuter rail service and stations are planned, WisDOT will work to facilitate connections between all transit modes and intercity passenger rail and provide technical assistance and funding for these efforts.	Revised element
Action 1.8 WisDOT will explore commuter rail operating assistance options.	Revised element

Policy Category: Supporting Programs for Both Intercity Passenger Rail and Commuter Rail

Policy 1 WisDOT will support commuter rail and intercity passenger rail through a planning program.	Continuing and revised elements
Action 1.1 WisDOT will seek funding for the multi-modal planning program (85.022) already in statute to identify and seek to implement connections to other transportation modes and evaluate the feasibility of intercity bus, intercity passenger rail and commuter rail improvements. This would allow WisDOT to provide funding assistance for planning, environmental and engineering studies from a stable funding source.	Pursue statutory change and funding
Action 1.2 WisDOT will encourage coordination and integration between commuter rail service, other local transit agencies, and intercity passenger rail services.	Continuing

Summary of the Purpose of the Policies

Policy Category: Safety and Security

Together, these Safety and Security policies are likely to enhance benefits for community and cultural resources by improving safety conditions and connectivity at rail crossings. WisDOT will continue to work with other Midwest states on coach and cab car purchases that include safety and security updates over the life of the plan.

Policy 1: Address rail crossing safety for vehicles, pedestrians, and bicyclists.

WRP 2050 will continue close collaboration with the Office of Commissioner of Railroads (OCR), local governments, Amtrak, and private railroads to improve safety and rail crossings using education, safety programs, warning devices, crossing geometry, and grade separations when feasible. Implementation of the plan will further improve safety at crossings for all modes of transportation through the completion of safety pilot studies and implementing the findings of the Wisconsin Highway-Railway Grade Crossing State Action Plan .[2]

Policy 2: WisDOT will work with partners and stakeholders to ensure the safety and security of the rail transportation system.

WisDOT continues its commitment to improve safety through enhancing security and resiliency of the rail system by reducing vulnerability and working with OCR, local governments, Amtrak, private railroads and emergency management partners.

[2] *Wisconsin Department of Transportation Railroad crossing improvements (wisconsindot.gov)*

Policy Category: Freight Rail

Policy 1: WisDOT worked with stakeholders to develop an intermodal freight strategy for Wisconsin as part of implementing the Wisconsin State Freight Plan. The resulting adopted strategy is included in the WRP 2050 and will be added to the next Wisconsin State Freight Plan update.

WisDOT supports intermodal freight facilities through financial and technical assistance where it is warranted or requested. This includes facilitating signaling updates for safe passage, provision of freight access to Wisconsin-owned lines, and grant dollars for facility improvements.

As part of Wisconsin Rail Plan 2050, WisDOT is formally adopting an intermodal freight strategy. WRP 2050 is WisDOT's first long-range transportation plan that includes this strategy. This strategy includes actions that support continued intermodal freight service planning and continued expertise to assist the development of new intermodal freight facilities through leadership and technical assistance.

Policy 2: Continue to support shipper access to the rail service network.

WisDOT will continue to support improved freight rail service by preserving current service and supporting improved connections between rail lines.

Policy 3: Continue to monitor Chicago's effect on Wisconsin's freight services.

WisDOT will continue to support improved freight rail service and intermodal freight opportunities. WisDOT will continue to work with partners to explore opportunities to increase freight rail.

Policy Category: Truck Borne Freight Connected and Autonomous Vehicle Impacts on Freight Rail

Policy 1: WisDOT recognizes the potential changes widely adopted CAV truck platooning could have on the economics of certain types of freight movements in the state and nationally.

Trucks travel close together in platoons on Wisconsin highways to conserve energy even without CAV. The widespread adoption of CAV trucks may increase the amount of truck platooning that occurs. WisDOT will continue monitoring developments in CAV truck platooning to assess potential impacts on WisDOT programs and policies.

Policy Category: Long-term Viability of Rail Corridors

Policy 1: Preserve rail corridors, including rights-of-way, for transportation use through public ownership where appropriate.

WisDOT, counties, and railroad partners manage most of the publicly owned Wisconsin rail track. WisDOT actions and programs support rail preservation and increased freight rail service through upgrading and rehabilitating existing rail infrastructure, preserving essential freight rail service through public acquisition of rail lines, and supporting the Rails-to-Trails program. WisDOT will develop an analytical framework that may further improve freight rail service. This analytical framework will evaluate WisDOT rail assets and facilitate data-driven decision making.

Rail corridor preservation may also preserve or create new opportunities for recreational trails, provide benefits for economic development, community resources, and transportation system connectivity.

Policy Category: Long-term Sustainability of Branch and Short-line Network

Policy 1: Preserve Wisconsin's branch and short line network.

WisDOT's actions and programs will support the preservation of freight rail service by working with railroads and partner agencies to reduce abandonments.

This policy to preserve branch and short line rail lines for transportation use has the potential to maintain or enhance the feasibility of freight rail.

Policy Category: Intercity Passenger Rail

Policy 1: WisDOT will continue to support the existing intercity passenger rail system including regional state-supported corridors and Amtrak long-distance routes.

Actions and programs under this policy support existing intercity passenger rail and emphasize its role in economic development, multimodal mobility, and connectivity. WisDOT will pursue connecting state supported rail service with other intercity modes.

Policy 2: Consider expanded intercity passenger rail service improvements

WisDOT's actions and programs will support improved intercity passenger rail service through improved travel speeds, train frequency, and multimodal connections to the Midwest regional intercity rail system, the national rail system, airports, intercity bus networks, and local transit networks. Full implementation of the WRP 2050 will further improve passenger rail service by

pursuing new opportunities for stops and exploring extending existing routes to other cities not currently served directly by passenger rail.

Policy 3: Continue WisDOT's commitment to intercity passenger rail's role in energy efficiency and air quality through the implementation of the intercity passenger rail program.

WisDOT has partnered with other Midwest states to upgrade Wisconsin's passenger rail fleet with energy-efficient technology to reduce emissions and improve air quality through the Midwest intercity passenger rail equipment fleet pool. WisDOT will also evaluate the relationship of intercity passenger rail with climate change initiatives, such as the Governor's Task Force on Climate Change, which supports investment in intercity passenger rail as a way to improve community health and the environment.

Expanded passenger rail service may also have impacts to the freight rail industry, as future passenger rail service is likely to share tracks with freight operations. In order to maintain current levels of freight rail service, siding and other infrastructure may be necessary depending on the level of passenger rail service.

Policy Category: Commuter Rail

Policy 1: Support commuter rail.

WisDOT supports the evaluation and development of new commuter rail service as well as the existing commuter rail service operated by Metra connecting Kenosha to Chicago. Plan implementation supports commuter rail that is publicly owned or part of a public-private partnership.

Plan implementation would also consider the relationship of commuter rail with climate change initiatives, such as the Governor's Task Force on Climate Change.

Expanded commuter rail can provide economic benefits, better community connectivity, and connect workers to a larger job market.

Policy Category: Supporting Programs for Both Intercity Passenger Rail and Commuter Rail

Policy 1: WisDOT will support commuter and intercity passenger rail through a planning program.

WisDOT will continue to support intercity passenger and commuter rail service through interagency coordination.

This policy to support intercity passenger and commuter rail programs supports economic development, community connectivity, and community resource benefits.

Overview of Implementing the Plan through Programs, the Financial Plan, and the Illustrative Project Listing Tables

WisDOT's rail policies and actions are mainly implemented through programs and the financial plan that funds them.

Chapter 12 Detail of Programs to Implement the Plan describes the primary state and federal programs that fund projects and studies for intercity passenger rail, commuter rail, crossings, and freight rail. Most of the state programs listed are managed by either WisDOT or the Office of the Commissioner of Railroads. Federal funds can be involved in stand-alone programs managed at the federal level or used as matching funds for state managed programs.

Chapter 13 Financial Plan Overview describes the sources and most recent budgetary dollar amounts for the most common funding programs.

Finally, **Chapter 14 Financial Plan Illustrative Project Listing Tables** shows a snapshot in time of publicly funded plans, studies, and projects as of early 2022. Activities funded by state and federal programs are on different program cycles – some with funds awarded yearly, every two years or whenever a new grant program is initiated. The tables show the status as of July 2022.

Chapter 11 System Plan Environmental Evaluation

This chapter discusses the System Plan Environmental Evaluation (SEE) for the Wisconsin Rail Plan 2050 (WRP 2050). The purpose of the SEE is to provide a conceptual, qualitative evaluation of the potential positive, negative, and neutral environmental impacts resulting from the plan's policies and actions presented in **Chapter 10 Rail Transportation Policies and Actions**. This evaluation satisfies the requirements of Wisconsin Administrative Code Trans 400, Wisconsin Environmental Policy Act Procedures for Department Actions.

This chapter details the following topics:

- Trans 400, the Wisconsin administrative code that defines the purpose and requirements of a SEE
- The purpose of the WRP 2050 SEE and its relationship to project-level environmental review
- An evaluation of the potential environmental impacts from WRP 2050 policies and actions under the base case and the plan implementation scenario
- An evaluation of the potential impacts of WRP 2050 policies on minority populations, low-income populations and other equity demographic groups

Trans 400 Summary[1]

Trans 400.07(2)(b)2 of the Wisconsin Administrative Code states that a System Plan Environmental Evaluation (SEE) may be prepared when proposals contained in state government transportation system plans are considered major and significant new proposals. The following are definitions of key terms from Trans 400.04:

- **Major and significant new proposal**: A new proposal developed by the department which, if legislatively authorized and funded, may significantly affect the quality of the human environment and represents a significant departure from, or expansion of, the department's existing responsibilities by substantially expanding or substantially reducing total resources allocated to any existing programs.
- **Human environment**: The natural or physical environment and the relationship of people with that environment.

[1] *Wisconsin Legislature: Chapter Trans 400*

- **System plan**: A plan which identifies transportation facility or service needs for a statewide system. The needs are identified conceptually without addressing specific design and locational details.
- **System-plan Environmental Evaluation**: A conceptual environmental evaluation, that shall be considered the "detailed statement" required by statute. It is commonly known as an "environmental impact statement" and is developed as an integral element of a system plan. There will be subsequent project or site-specific environmental reviews if the plan recommendations are implemented. A SEE also serves as the Legislative Environmental Impact Statement regarding reports or recommendations on legislation required to implement the plan.

WRP 2050 SEE Purpose

In general, a SEE addresses similar environmental issues as those in an environmental impact statement or environmental analysis for an individual transportation project. However, given the scope and purpose of a statewide long-range modal plan, a SEE is by necessity more conceptual, qualitative, and general than environmental reviews for individual projects.

This SEE does not replace future project-level environmental reviews, nor does it attempt to identify the magnitude or location of impacts. The SEE is designed to identify potential future impacts to be further investigated during a project or corridor-level environmental review.

This SEE compares potential environmental impacts that may result from two different scenarios. The first, the base case, is the continuation of WisDOT's existing policies and actions. The second is the WRP 2050 plan implementation scenario, which is the base case plus the full implementation of new and revised policies in WRP 2050.

For the purpose of this SEE, positive impacts on the environment are referred to as "benefits," while negative impacts on the environment are referred to as "burdens." Neutral impacts are those that have no or negligible effect on the environment.

The WRP 2050 SEE supports "Goal 8: Balance transportation needs with those of the natural environment and socioeconomic, historic and cultural resources" of WisDOT's statewide long-range transportation plan, Connect 2050.[2]

[2] *Connect 2050: Let's Connect Wisconsin (wisconsindot.gov)*

Relationship to Environmental Context and Equity Chapters

This SEE is one part of the complete environmental review for WRP 2050, together with **Chapter 8 Environmental Context** and **Chapter 9 Equity Context**.

Chapter 8 Environmental Context outlines the known environmental benefits and burdens resulting from the operations, maintenance, and development of Wisconsin's rail transportation system by looking at the impacts of each of the SEE topical areas. The SEE expands upon known benefits and burdens and compares if benefits and burdens would increase, decrease, or stay the same under the implementation of the WRP 2050.

Chapter 9 Equity Context identifies where equity demographic groups live relative to rail facilities in Wisconsin and how equity is considered in existing WisDOT rail programs. The SEE expands upon this review by identifying which policies in the plan implementation scenario have the potential to benefit or burden: the quality of life and mobility of certain demographic groups, the quality of life and mobility of the general population; and the condition of Wisconsin's natural, cultural, and historic resources.

SEE Outreach

WisDOT conducted a coordination meeting with United States federal, state, and Tribal environmental resource agencies in the beginning of the development of the Wisconsin Rail Plan 2050. This meeting helped to identify potential environmental benefits and burdens resulting from rail transportation and how those impacts may change under further development of the rail system. This meeting is summarized in **Chapter 15 Public Involvement Details**.

Environmental Evaluation of WRP 2050 Policies

WRP 2050 proposes the continuation of many existing rail policies and programs (base case scenario), but also contains major and significant new proposals that could potentially impact the environment (plan implementation scenario), thus requiring the preparation of a SEE.

This section summarizes WRP 2050 policies under the base case and under the plan implementation scenarios. It then provides a conceptual, qualitative review of how WRP 2050 policies under the base case and under the plan implementation scenario could potentially result in mostly beneficial, mostly burdensome, or neutral impacts to the general population and Wisconsin's natural resources in the following environmental areas:

- Congestion
- Energy consumption
- Air quality
- Economic growth and development
- Communities and cultural resources
- Sensitive land and water resources
- Agriculture
- Indirect and cumulative effects

Environmental justice in minority and low-income populations is a critical component of an environmental review. Potential impacts to these populations as a result of WRP 2050 policies is considered later in the equity context section of this chapter.

The SEE analysis does not identify specific impacts, the magnitude of impacts, or the geographic extent of impacts. This information cannot be identified until project-level environmental review is done for the specific projects that result from WRP 2050 policies.

The SEE analysis also does not compare the impacts of rail transportation to other modes such as truck freight or personal automobile travel. Rather, it considers the direct result of implementing WisDOT rail policies and actions. It is important to note that while the expansion or development of new rail facilities may have direct, project-specific negative, the implementation of WRP 2050 policies and actions may have cumulative and indirect benefits. Rail's energy efficiency and smaller physical footprint compared to other modes of transportation, together with WisDOT's mitigation efforts, places less strain on these resources and can enhance them. The direct impact of rail on these resources is detailed in **Chapter 8 Environmental Context**.

Table 11-1 below summarizes how WisDOT policies under the base case and the WRP 2050 plan implementation scenario affect each SEE environmental topical area and compares the relative direct impact of the plan implementation scenario to the base case. The direct impacts demonstrated in this table were developed using a scoping and impacts assessment performed by WisDOT planning and technical staff.

Table 11-1: System-Plan Environmental Evaluation Direct Impacts Comparison

Legend

+	Mostly benefits
±	Both benefits and burdens
-	Mostly burdens
°	Neutral or no benefit/burden

Environmental Topic	Policy Category	Base Case	WRP 2050	WRP 2050 compared to Base Case
Congestion	Safety and Security	°	°	No change
	Freight rail	+	+	Greater benefits
	Truck Borne Freight CAV Impacts on Freight Rail	°	°	No change
	Long-term Viability of Rail Corridors for Rail Use	+	+	No change
	Long-term Viability of Branch and Short-line Network	+	+	No change
	Intercity Passenger Rail Network Investment	+	+	Greater benefits
	Commuter Rail	°	+	Greater benefits
	Supporting Programs for Both Intercity Passenger Rail and Commuter Rail	+	+	Greater benefits
Energy Consumption	Safety and Security	°	°	No change
	Freight rail	+	+	Greater benefits
	Truck Borne Freight CAV Impacts on Freight Rail	°	°	No change
	Long-term Viability of Rail Corridors for Rail Use	+	+	No change
	Long-term Viability of Branch and Short-line Network	+	+	No change

Environmental Topic	Policy Category	Base Case	WRP 2050	WRP 2050 compared to Base Case
	Intercity Passenger Rail Network Investment	+	+	Greater benefits
	Commuter Rail	°	+	Greater benefits
	Supporting Programs for Both Intercity Passenger Rail and Commuter Rail	+	+	Greater benefits
Air Quality, Greenhouse Gas Emissions, and Climate Change	Safety and Security	°	°	No change
	Freight rail	+	+	Greater benefits
	Truck Borne Freight CAV Impacts on Freight Rail	°	°	No change
	Long-term Viability of Rail Corridors for Rail Use	+	+	No change
	Long-term Viability of Branch and Short-line Network	+	+	No change
	Intercity Passenger Rail Network Investment	+	+	Greater benefits
	Commuter Rail	°	+	Greater benefits
	Supporting Programs for Both Intercity Passenger Rail and Commuter Rail	+	+	Greater benefits
Economic Growth	Safety and Security	°	°	No change
	Freight Rail	+	+	Greater benefits
	Truck Borne Freight CAV Impacts on Freight Rail	°	°	No change
	Long-term Viability of Rail Corridors for Rail Use	+	+	No change
	Long-term Viability of Branch and Short-line Network	+	+	No change
	Intercity Passenger Rail Network Investment	+	+	Greater benefits

Environmental Topic	Policy Category	Base Case	WRP 2050	WRP 2050 compared to Base Case
	Commuter Rail	°	+	Greater benefits
	Supporting Programs for Both Intercity Passenger Rail and Commuter Rail	+	+	Greater benefits
Cultural and community Resources	Safety and Security	+	+	Greater benefits
	Freight Rail	°	±	Greater benefits and burdens
	Truck Borne Freight CAV Impacts on Freight Rail	°	°	No change
	Long-term Viability of Rail Corridors for Rail Use	±	±	No change
	Long-term Viability of Branch and Short-line Network	±	±	No change
	Intercity Passenger Rail Network Investment	±	±	Greater benefits and burdens
	Commuter Rail	°	±	Greater benefits and burdens
	Supporting Programs for Both Intercity Passenger Rail and Commuter Rail	±	±	Greater benefits and burdens
Sensitive land and water resources	Safety and Security	°	°	No change
	Freight Rail	°	-	Greater burdens
	Truck Born Freight CAV Impacts on Freight Rail	°	°	No change
	Long-term Viability of Rail Corridors for Rail Use	°	°	No change
	Long-term Viability of Branch and Short-line Network	°	°	No change
	Intercity Passenger Rail Network Investment	±	±	Greater benefits and burdens

Environmental Topic	Policy Category	Base Case	WRP 2050	WRP 2050 compared to Base Case
	Commuter Rail	°	±	Greater benefits and burdens
	Supporting Programs for Both Intercity Passenger Rail and Commuter Rail	±	±	Greater benefits and burdens
Agriculture	Safety and Security	°	°	No change
	Freight Rail	±	±	Greater benefits and burdens
	Truck Borne Freight CAV Impacts on Freight Rail	°	°	No change
	Long-term Viability of Rail Corridors for Rail Use	°	°	No change
	Long-term Viability of Branch and Short-line Network	°	°	No change
	Intercity Passenger Rail Network Investment	°	±	Greater benefits and burdens
	Commuter Rail	°	±	Greater benefits and burdens
	Supporting Programs for Both Intercity Passenger Rail and Commuter Rail	°	±	Greater benefits and burdens
Indirect and cumulative effects	Safety and Security	°	°	No change
	Freight Rail	°	±	Greater benefits and burdens
	Truck Borne Freight CAV Impacts on Freight Rail	°	°	No change
	Long-term Viability of Rail Corridors for Rail Use	°	°	No change
	Long-term Viability of Branch and Short-line Network	°	°	No change
	Intercity Passenger Rail Network Investment	±	±	Greater benefits and burdens

Environmental Topic	Policy Category	Base Case	WRP 2050	WRP 2050 compared to Base Case
	Commuter Rail	°	±	Greater benefits and burdens
	Supporting Programs for Both Intercity Passenger Rail and Commuter Rail	±	±	Greater benefits and burdens

The following text goes into more detail about the findings of the impact assessment summarized in **Table 11-1**.

Policy Summary

The following section offers additional details about the findings of the impact assessment summarized in **Table 11-1**. Details about the policies and actions are in **Chapter 10 Rail Transportation Policies and Actions**.

Policy Category: Safety and Security

Policy 1: Address rail crossing safety for vehicles, pedestrians, and bicyclists.

The base case scenario of the WRP 2050 supports collaborating with the Office of Commissioner of Railroads (OCR), locals, and private railroads to improve safety and rail crossings using education, safety programs, warning devices, crossing geometry, and grade separations when appropriate. The plan implementation scenario continues these practices and would further improve safety at crossings for all modes of transportation through the completion of safety pilot studies and implementing the findings of the Wisconsin Highway-Railway Grade Crossing Safety Action Plan (SAP).[3] It could also include options to create closed corridors in areas where safety conflicts may occur with passenger rail. Improvements to crossings made as a result of implementing the findings of safety pilot studies or the SAP may require geometric changes to crossings, which could impact land and water resources at a small scale.

Policy 2: WisDOT will work with partners and stakeholders to ensure the safety and security of the rail transportation system.

[3] *Wisconsin Highway-Railway Grade Crossing Safety Action Plan (wisconsindot.gov)*

The base case scenario includes actions to improve safety through enhancing security and resiliency of the rail system by reducing vulnerability and working with railroads and emergency management partners. The plan implementation scenario continues these actions.

Together, these safety and security policies are likely to enhance benefits for community and cultural resources by improving safety conditions and connectivity at rail crossings. WisDOT will continue to work with other Midwest states to use updated rail coach and cab cars to improve safety and security over the life of the plan. The plan implementation scenario is likely to have greater benefits than the base case.

Policy Category: Freight Rail

Policy 1: WisDOT worked with stakeholders to develop an intermodal freight strategy for Wisconsin as part of implementing the Wisconsin State Freight Plan.

Under the base case scenario, WisDOT supports intermodal freight facilities through financial and technical assistance where it is warranted or requested. This includes facilitating signaling updates, provision of freight access to Wisconsin-owned lines, and grant funding for facility improvements.

Under the plan implementation scenario, WisDOT is formally adopting an intermodal freight strategy. WRP 2050 is WisDOT's first long-range transportation plan that includes this strategy. The intermodal freight strategy includes actions that support continued intermodal freight service planning and continued expertise to assist the development of new intermodal freight facilities through leadership and technical assistance. WisDOT can facilitate specific processes to provide financial support via grants or loans, subject to the state legislative process. Continued investment in intermodal freight may result in creation of new facilities which would directly impact land and water resources on a small-scale. However, it would have positive cumulative benefits for emissions, air quality, and land and water resources by reducing the need for trucks on highways.

Policy 2: Continue to support shipper access to the rail service network.

Base case actions support improved freight rail service by preserving current service and supporting improved connections between rail lines. The plan implementation scenario would continue these actions.

Policy 3: Continue to monitor Chicago's effect on Wisconsin's freight service.

Base case actions support improved freight rail service and intermodal freight opportunities. WisDOT works with partners to explore opportunities to increase freight rail service. The plan implementation scenario continues these actions.

Freight rail policies are likely to have several environmental impacts. Under the plan implementation scenario, the development of new intermodal facilities could create noise and vibration burdens, convert prime farmland, and disturb sensitive land and water resources. Though not shown in **Table 11-1 System Environmental Evaluation Direct Impacts Comparison**, new intermodal facilities along with continued support of freight rail by WisDOT could also indirectly create demand for freight rail over truck freight. This supports economic development, helps to reduce congestion, and lessens air quality and emissions impacts.

Policy Category: Truck borne Freight Connected and Autonomous Vehicle Impacts on Freight Rail

Policy 1: WisDOT recognizes the potential changes widely adopted CAV truck platooning could have on the economics of certain types of freight movements in the state and nationally.

Trucks travel close together in platoons on Wisconsin highways to conserve energy even without CAV. The widespread adoption of CAV trucks may increase the amount of truck platooning that occurs. WisDOT actions under the plan implementation scenario include monitoring developments in CAV truck platooning to assess potential impacts on WisDOT programs and policies. Future innovations in CAV technology are likely to increase truck platooning, which may have impacts to air quality and emissions by creating more demand for freight carried by trucks compared to by rail. This policy itself is only partially related to freight railroad frequencies or technologies and therefore is unlikely to have any environmental impacts.

Policy Category: Long-Term Viability of Rail Corridors

Policy 1: Preserve rail corridors, including rights-of-way, for transportation use through public ownership where appropriate.

WisDOT manages or oversees most of the publicly-owned railroad property in Wisconsin. WisDOT actions under the base case support rail preservation and increased freight rail service through upgrading and rehabilitating existing rail infrastructure, preserving essential freight rail service through public acquisition of rail lines, and supporting the Rails-to-Trails program. The

plan implementation scenario continues these actions and also supports creating an analytical framework that may further improve freight rail service. This analytical framework will evaluate WisDOT rail assets and facilitate data-driven decision making. The effects of this process and of increased monitoring of rail freight movements will be determined in studies done in the near-term.

This policy to preserve rail corridors for transportation use has the potential to maintain or enhance the feasibility of freight rail over truck freight, reducing energy consumption, air quality impacts, and emissions. Rail corridor preservation may also preserve or create new opportunities for recreational trails which could provide economic development, community resources, and connectivity benefits.

Policy Category: Long-Term Viability of Branch and Short-line Network

Policy 1: Preserve Wisconsin's branch and short line network.

Base case actions support the preservation of freight rail service by working with railroads and partner agencies to reduce abandonments. These actions would be continued under the plan implementation scenario.

This policy to preserve branch and short line rail lines for transportation use has the potential to maintain or enhance the feasibility of freight rail, providing congestion benefits and reducing energy consumption, air quality impacts, and emissions.

Policy Category: Intercity Passenger Rail Network

Policy 1: WisDOT will continue to support the existing intercity passenger rail system including regional state-supported corridors and Amtrak long-distance routes.

Base case actions under this policy support existing intercity passenger rail and emphasize its role in economic development, multimodal mobility, and connectivity. Under the base case, WisDOT will pursue connecting state supported intercity passenger rail service with other intercity modes. The plan implementation scenario continues these actions.

Policy 2: Consider expanded intercity passenger rail service improvements.

The base case supports intercity passenger rail service through improved travel speeds, train frequency, and multimodal connections to the Midwest regional intercity rail system, the national intercity passenger rail system, airports, intercity bus networks, and local transit networks. Full

implementation of new actions under the plan implementation scenario increase passenger rail service by providing better access to stations through improvements, increased schedule reliability, train frequency, and travel speeds. Plan implementation would further improve intercity passenger rail service by pursuing new opportunities for stops and exploring extending existing routes to other cities not currently served by passenger rail.

Policy 3: Continue WisDOT's commitment to intercity passenger rail's role in energy efficiency and air quality through the implementation of the intercity passenger rail program.

The base case supports upgrading Wisconsin's intercity passenger rail car fleet with energy-efficient technology to reduce emissions and improve air quality. Actions under the plan implementation scenario would continue these efforts. These actions also evaluate the relationship of intercity passenger rail with climate change initiatives, such as the Governor's Task Force on Climate Change[4], which supports investment in intercity passenger rail as a way to improve community health and the environment.

These intercity passenger rail policies have the potential to result in new or expanded passenger rail service. Any intercity passenger rail project that results in new or expanded service will have impacts to urban and rural environments, station areas, agricultural lands, sensitive lands, and water resources. For the purposes of this plan, these impacts would be evaluated with further environmental studies at the project level.

New intercity passenger rail service provides additional mobility options and reduces demand for automobile use, creating benefits for congestion, air quality, economic development, community connectivity, and other benefits. Station improvements may have site-specific impacts to land and water resources but would overall provide community benefits by improving access to passenger rail. These benefits would be increased under the plan implementation scenario compared to the base case.

Expanded intercity passenger rail service may also have impacts to the freight rail industry, as future passenger rail service is likely to share tracks with freight operations. In order to maintain current levels of freight rail service, siding and other infrastructure may be necessary depending on the level of passenger rail service. This may have impacts to land and water resources.

[4] *Climate Change Task Force Home (wi.gov)*

These benefits would be enhanced under the plan implementation scenario compared to the base case.

Policy Category: Commuter Rail

Policy 1: Support commuter rail investment

WisDOT actions under the base case support the evaluation and development of commuter rail service in Wisconsin. The base case also supports intermodal connections to existing commuter rail service, operated by Metra, which connects Kenosha to Chicago. Plan implementation continues support for commuter rail. Plan implementation also considers the relationship of commuter rail with climate change initiatives, such as the Governor's Task Force on Climate Change[5] as a way to reduce congestion, reduce emissions, and lessen environmental impacts.

This policy to support commuter rail has the potential to increase existing commuter rail service or create new service. Expansion of commuter rail is likely to occur on existing rail right of way, and new stations are likely to be developed in urbanized areas. New commuter rail service may be in place by 2050.

Expanded commuter rail provides economic benefits, better community connectivity, and connects workers to a larger job market. This would reduce demand for automobile use, creating benefits for congestion, air quality, energy consumption, and emissions.

Policy Category: Supporting Programs for Both Intercity Passenger Rail and Commuter Rail

Policy 1: WisDOT will support commuter rail and intercity passenger rail through a planning program.

Existing base case actions support intercity passenger and commuter rail service through interagency coordination.

This policy to support intercity passenger and commuter rail programs has the potential to improve service and access for commuter and passenger rail. Improved service reduces the negative impacts of automobiles. Environmental burdens include congestion, vehicle carbon

[5] *Ibid.*

emissions, air quality impacts from ozone and nitrogen oxides, and energy consumption. It also supports economic development, community connectivity, and community resource benefits.

Equity Context of WRP 2050 Policies

This section considers the equity context of the previously described impacts resulting from WRP 2050 policies, including the impacts to minority populations and low-income populations. This evaluation is conceptual and qualitative in nature and is not intended to replace project-level equity or environmental justice studies. Specific impacts, the magnitude of impacts, and the geographic location of impacts resulting from WisDOT rail activities are determined during project-level environmental review required under the Wisconsin Environmental Policy Act (WEPA) and the National Environmental Policy Act (NEPA).

WRP 2050 policies and increased rail service have the potential to help in achieving environmental justice in minority and low-income populations by improving quality of life, economic development opportunities, community connectivity, and mobility options. These policies also have the potential to increase burdens on these populations through localized impacts to safety, air quality, noise, vibration, and land and water resources.

The following evaluation considers whether the proposed WRP 2050 policies under the base case and plan implementation scenario have the potential to either benefit, burden, or have neutral impacts on the following demographic groups (hereafter referred to as equity demographic groups):

- Low-income populations
- Minority populations
- People with disabilities
- Seniors (age 65 and older)
- Youth (age 9 and under)
- Zero-vehicle households

Demographic groups were reviewed because they are environmental justice populations identified in Executive Order 12898[6], protected classes under Title VI of the Civil Rights Act of

[6] *WCPD-1994-02-14-Pg276.pdf (govinfo.gov)*

1964[7] or are other historically underserved populations that benefit from increased transportation options. The range of demographic groups considered in this SEE is limited by the scope and scale of WRP 2050, and the range of demographic groups considered may be expanded during project-level analyses.

Chapter 9 Equity Context of WRP 2050 details where there are concentrated areas of equity demographic groups living near rail infrastructure or without access to passenger rail or connecting busses. These locations are summarized below in **Table 11-2** and represent areas where there is a greater likelihood for benefits or disproportionate burdens resulting from the implementation of WRP 2050 policies. Locations of specific disproportionate impacts and the mitigation of those impacts are identified during WisDOT project-level environmental analysis.

Table 11-2: Summary of Locations of Equity Demographic Groups Near Rail, by Mode

Region	Mode	Populations near facilities
NW	Freight Rail	• Minority populations in Arcadia, Ashland County, Jackson County, and Sawyer County • Low-income populations in Barron, Chippewa Falls, Eau Claire, Menomonie, River Falls, Superior, and the Lac Courte Oreilles Tribal lands • Zero-vehicle households in Barron, Black River Falls, Chippewa Falls, Eau Claire, Medford, Rice Lake, Superior, and southeastern Eau Claire County • Youth populations in northeastern Clark County and Superior • People with disabilities in Superior
	Passenger Rail	• Minority populations, zero-vehicle households, and populations with disabilities living near thruway bus stops in Chippewa Falls, Eau Claire, Menominee, and Superior
NC	Freight Rail	• Minority populations in Rib Mountain, Shawano, Wausau, and Wisconsin Rapids • Low-income populations in Merrill, Stevens Point, Wausau, and Wisconsin Rapids • Zero-vehicle households in Adams, Marshfield, Merrill, Rhinelander, Shawano, Stevens Point, Tomahawk, Wausau, and Wisconsin Rapids
	Passenger Rail	• Minority populations west of Wausau and on Tribal lands in Forest County, Menominee County, and Vilas County • Low-income residents in Menominee County, Stevens Point, Wausau, and Wisconsin Rapids

[7] *Title VI, Civil Rights Act of 1964 | U.S. Department of Labor (dol.gov)*

Region	Mode	Populations near facilities
		• Zero-vehicle households in Hurley, Stevens Point, Wausau, and Wisconsin Rapids
NE	Freight Rail	• Minority populations in Appleton, Manitowoc, Sheboygan, southern Green Bay, and on the border between Neenah and Menasha • Low-income populations in Appleton, Green Bay, Manitowoc, Marinette, and Two Rivers • Zero-vehicle households in Appleton, Fond du Lac, Green Bay, Manitowoc, Marinette, Menasha, Neenah, Oshkosh, and Sheboygan
	Passenger Rail	• Minority populations in Appleton, Green Bay, Manitowoc, Sheboygan, and the Oneida Tribal lands • Low-income populations in Green Bay, Manitowoc, Marinette, Neenah, and the Oneida Tribal lands • Zero-vehicle households in Sturgeon Bay and Two Rivers
SW	Freight Rail	• Minority populations in Beloit, Janesville, La Crosse, Madison, Sun Prairie, Watertown, and Tribal lands in Monroe County and Sauk County • Low-income populations in Beloit, La Crosse, Madison, central Sauk County, and central Vernon County • Zero-vehicle households in Beaver Dam, Beloit, Janesville, La Crosse, Madison, Monroe, Portage, and Watertown
	Passenger Rail	• Minority populations in Beloit, Janesville, La Crosse, Madison, and Portage • Low-income populations Beloit, Janesville, La Crosse, Madison, Platteville, Portage, Sauk County, and Vernon County • Zero-vehicle households in Beloit, Horicon, La Crosse, Madison, Mayville, Monroe, Platteville, Richmond Center, Viroqua, Watertown, Windsor, and eastern Vernon County
SE	Freight Rail	• Minority populations in central and Kenosha, northwest Milwaukee County, Racine, and Waukesha • Low-income populations in Kenosha, and central and northwest Milwaukee County, Racine, Union Grove, Waukesha, and Whitewater • Zero-vehicle households in Delavan, Hartford, Kenosha, north and central Milwaukee County, Racine, and Waukesha • Populations of people with disabilities in Kenosha, Waukesha, and northwest, central, and southeast Milwaukee County
	Passenger Rail	• Minority populations in Kenosha, Milwaukee, Racine, and Waukesha • Low-income populations in Kenosha, Milwaukee, and Racine

Region	Mode	Populations near facilities
		• Zero-vehicle households in Kenosha, north and central Milwaukee County, Racine, and Waukesha • Populations of people with disabilities in Kenosha, Waukesha, and northwest, central, and southeast Milwaukee County

Safety Policies

Policy Category: Safety and Security (All Rail Modes)

Safety in all forms of transportation is a fundamental priority for WisDOT. The department constantly strives to reduce crashes and injuries, educate people on safety strategies, design safe facilities, and collaborate with partner organizations on safety.

The equity demographic groups examined in **Chapter 9 Equity Context** are overall more vulnerable to safety issues due to an increased reliance on alternative modes of transportation. WRP 2050 safety and security policies are likely to have a positive benefit for all equity demographic groups, including environmental justice populations. Low-income and minority populations are less likely to own a vehicle than the general population and rely more on alternative modes of transportation such as walking, bicycling, and transit. Policies to improve rail crossing safety will provide safer and more reliable crossings, better community connectivity, and improve access to transportation.

Freight Rail Policies

Policy Category: Freight Rail

Many industries rely on freight rail for various parts of their operations. Freight rail provides economic development opportunities for communities and freight railroads provide infrastructure for which intercity passenger rail and commuter rail generally runs. However, proximity to freight rail facilities can negatively impact quality of life and the human environment.

Chapter 9 Equity Context demonstrated that there are areas of the state, especially urbanized areas, where large numbers of equity demographic groups live near freight rail lines, ports with rail service, or rail intermodal facilities. WisDOT freight rail policies have the potential to increase current levels of freight rail traffic, which could increase economic development benefits. However, increased freight service and the development of new intermodal facilities may also

increase burdens on quality of life and the human environment adjacent to freight rail facilities, such as through noise and vibration impacts.

Policy Category: Truck borne Freight Connected and Autonomous Vehicle Impacts on Freight Rail

Connected and autonomous truck platooning has the potential to make truck freight more efficient by reducing costs and travel times for shippers. This could change the economics of certain types of freight movements nationally. A potential mode shift from freight rail to trucks would potentially increase environmental impacts due to creating demand for highway use and the greater energy use of trucks compared to rail. Additionally, it may increase negative impacts in urbanized areas and for those living near major roadways, where truck freight can contribute to noise and air quality impacts. WisDOT's actions under WRP 2050 to monitor developments in the technology are unlikely to have an impact on equity demographic groups.

Policy Category: Long-Term Viability of Rail Corridors

Freight rail can greatly contribute to economic development within communities. Rail abandonment can negatively impact businesses and residents who rely on freight rail for jobs. The preservation of rail corridors can help to ensure future benefits of freight rail are retained and help preserve rail right-of-way. The preservation of rail corridors through Rails-to-Trails programs can also provide economic development and recreation opportunities.

As discussed in **Chapter 9 Environmental Context** only approximately 590 of over 3,200 total miles of rail lines in Wisconsin are publicly owned. Public ownership allows WisDOT more control over environmental impact mitigation. WRP 2050 policies and actions for long-term viability of rail corridors for rail use have the potential to create a safer rail system that lessens environmental impacts, by giving WisDOT more control over the design and function of rail facilities and crossings. Additionally, these policies to help preserve rail lines can help facilitate the implementation of intercity passenger rail. The preservation of rail corridors for rail use through public ownership is likely to have beneficial impacts to minority and low-income populations, as well as other underserved demographic groups, by improving safety along rail corridors and improving access to alternative transportation options through passenger rail.

Policy Category: Long-Term Viability of Branch and Short-line Network

Branch and short-line rail lines help to connect manufacturers and businesses to the national rail transportation system. These lines facilitate commerce and provide economic development

opportunities for communities. However, increased freight rail service can also negatively impact the natural and human environments by creating more potential safety incidents and contributing to noise, vibration, and air quality impacts.

WRP 2050's policies and actions related to the long-term viability of branch and short-line network have the potential to maintain and increase the level of freight rail service in Wisconsin communities. Such a result could provide benefits through economic development. However, an increase in freight service could also impact communities through increased safety concerns, air pollution, vibration, noise, and other environmental impacts. As shown in **Chapter 9 Equity Context**, there are several locations throughout the state where low-income, minority, and other equity populations are more likely to live near freight rail facilities where these impacts might have an effect. If freight rail is replacing truck freight and removing vehicles from the roadway, the efficiencies of rail compared to trucks could help to reduce negative environmental impacts.

Passenger and Commuter Rail Policies

Policy Category: Intercity Passenger Rail Network Investment

As discussed in **Chapter 9 Equity Context**, access to the intercity passenger rail and commuter rail networks vary greatly across the state. Passenger rail and commuter rail generally run on freight rail lines. Intercity passenger and commuter rail both play a key role in increasing mobility for zero-vehicle households and increasing transportation options for low-income populations, minority populations, and other equity demographic groups. These modes of transportation come with several environmental and economic benefits. Intercity passenger rail can facilitate dense, multimodal urban development around stations, spurring economic activity. It may also better connect people to jobs and other community resources. Since these forms of transportation are more energy efficient on a per passenger-mile basis, it can also lower emissions and improve air quality. However, higher speeds intercity passenger rail can cause crossing closures, which may create connectivity barriers within communities. Additionally, it may create quality of life impacts through increased noise, vibration, and cause increased traffic around stations, leading to safety concerns.

If fully implemented, WRP 2050's policies and actions related to intercity passenger rail network investment could provide benefits for the human environment. Implementation may result in increased economic development opportunities, air quality improvements, emissions reductions, and safety improvements. Additionally, these policies may allow for greater transportation options and mobility for low-income populations, minority populations, and other equity

demographic groups. However, expanded or new rail service could increase noise and vibration impacts to these populations.

Policy Category: Commuter Rail

WRP 2050 policies and actions related to commuter rail could provide benefits for the human environment and communities. People with limited transportation options could have greater access to jobs and community resources. Commuter rail could provide enhanced mobility and connectivity for low-income populations, minority populations, and other equity demographic groups. Commuter rail is also a more energy efficient form of transportation compared to personal automobiles. Commuter rail service could negatively increase noise and vibration impacts to the populations living near facilities.

Policy Category: Supporting Programs for Both Intercity Passenger Rail and Commuter Rail

If the plan is fully implemented, supporting intercity passenger and commuter rail could provide greater mobility options and better connect Wisconsin communities to jobs and resources both within and out of the state. Policies of support could further low-income and minority populations zero-vehicle households, people with disabilities, and low-income individuals' access to transportation.

Chapter 12 Details of Programs to Implement the Plan

Policies and actions in the Wisconsin Rail Plan 2050 (WRP 2050) are implemented by many different entities and may be funded by a variety of local, state and federal programs. This chapter gives an overview of rail funding programs including WisDOT programs, other Wisconsin state government programs, federal programs, and Operation Lifesaver. **Chapter 13 Financial Plan Overview** provides additional information on funding for these programs.

Wisconsin DOT Programs

Freight Railroad Preservation Program

The Freight Rail Preservation Program (FRPP) provides grants up to 80% of the cost to purchase abandoned rail lines to continue service, for the preservation of a future rail service opportunity, as well as rehabilitate facilities such as tracks and bridges on publicly owned tracks. The program helps preserve rail corridors that are abandoned and improve rail infrastructure. Projects improve rail connectivity and can revitalize local communities with the expansion of old rail lines. The annually awarded grants are available to local units of government, industries, and railroads for the purpose of preserving essential rail lines and rehabilitate them following purchase. For more information visit the program web page Wisconsin Department of Transportation Freight Railroad Preservation Program (wisconsindot.gov).

Freight Rail Infrastructure Improvement Program

The Freight Rail Infrastructure Improvement Program (FRIIP) provides loans funding up to 100% of projects to encourage improvements to the rail system, particularly on privately owned lines. These loans can be used on rail projects that connect an industry to the national railroad system, make improvements to enhance transportation efficiency, safety, and intermodal freight movement, accomplish line rehabilitation, and/or develop the economy. Applications are accepted on an on-going basis. For more information visit the program web page Wisconsin Department of Transportation Freight Railroad Infrastructure Improvement Program (FRIIP) (wisconsindot.gov).

Transportation Economic Assistance

The Transportation Economic Assistance (TEA) program provides matching state grants to governing bodies for road, rail, harbor, and airport projects. The goal of the TEA program is to

attract and retain businesses in Wisconsin and thus create and increase the number of jobs. Grants of up to $1 million are available for transportation improvements that are essential for an economic development project. The project must have the local government's endorsement, benefit the public, and begin within three years of project agreement. The 50% local match can come from any combination of local, federal, or private funds or in-kind services. Applications are accepted on an ongoing basis.

Visit the program web page for more information including lists of grant recipients and completed projects Wisconsin Department of Transportation Economic Assistance (TEA) (wisconsindot.gov).

Harbor Assistance Program

The Harbor Assistance Program (HAP) was created in 1979 to assist harbor communities along the Great Lakes and Mississippi River in maintaining and improving waterborne commerce. Port projects typically include dock reconstruction, mooring structure replacement, dredging, and the construction of facilities to hold dredged material. To be eligible for funding, the project must benefit facilities that are used for cargo transfer, ship building, commercial fishing, or regular ferry service. The applicant must be a local unit of government or a private owner of a harbor facility, the project must pass a rigorous benefit-cost analysis, and the project must have been identified in a current Three-Year Harbor Development Plan. For more information visit the program web page Wisconsin Department of Transportation Harbor Assistance Program (HAP) (wisconsindot.gov).

State Infrastructure Bank Program

The State Infrastructure Bank (SIB) Program offers a range of loans and credit options to assist in paying for eligible transportation projects that would otherwise go unfunded or experience substantial delays. This program is funded through a revolving loan program. Principal and interest payments made by loan recipients are returned to the "bank" so that funds can be made available to new applicants. SIB loans can be used with other federal or state programs, or to finance an entire project.

Projects eligible for SIB funding focus on economic development including access improvements for vehicle traffic near commercial or industrial sites, improvements to roads serving brownfields or idle industrial sites, reconstruction of a bridge that connects downtown businesses to a state highway, and addition of vehicle capacity to a road linking to an intermodal or transload facility.

Projects that are eligible for SIB funding that focus on transportation efficiency, safety, and mobility include: installation of signal lights, turn lanes, and pedestrian walkways at a highway intersection, road modifications to accommodate truck movements near a distribution center, improvements to an interchange near a new commercial development, and construction of parking facilities, bicycle lanes, and pedestrian walkways to better facilitate customer traffic near retail centers and tourist attractions.

Eligible applicants include counties, cities, villages and towns, or other government or non-profit organizations. Funds are available on an on-going basis. Interest rates are similar to or lower than market rates, and the loan term can extend up to 30 years. For more information visit the program web page Wisconsin Department of Transportation State Infrastructure Bank (SIB) Program (wisconsindot.gov).

Other Wisconsin State Programs

Office of the Commissioner of Railroads

The Office of the Commissioner of Railroads (OCR) is a state agency that enforces regulations relating to railway safety and investigates the safety of highway-rail crossings. OCR partners with private rail companies, local governments, and residents to oversee a variety of highway-rail crossing issues including replacement or enhancement of passive and active warning devices at highway-rail crossings, repair of rough highway-rail crossing surfaces, installation of highway-rail crossings at new locations, alteration of existing highway-rail crossings, and closing or consolidating existing highway-rail crossings. The OCR has been given authority to identify and prioritize $2.7 million of federal safety funds with a $1.7 million state match for the OCR Safety Program (2020 figures). These OCR program funds are used exclusively for installation or upgrades of warning systems at railroad grade crossings. OCR also receives $2,112,000 state funds every year for railroad signal maintenance. For more information visit the program web page Wisconsin Department of Transportation Railroad Crossing Improvements (wisconsindot.gov).

Diesel Emissions Reduction Act Wisconsin Clean Diesel Grant Programs

The Diesel Emissions Reduction Act (DERA) Wisconsin Clean Diesel Grant Program is a grant administer by the Wisconsin Department of Natural Resources (DNR) with federal funds provided by the U.S. Environmental Protection Agency (EPA).

DERA funding is available for profit, nonprofit, and public entities that own or operate diesel fleets and equipment in Wisconsin for projects to achieve reductions in diesel emissions. Funding proportions and cost-sharing requirements vary by activities, but funding can be provided up to 100% of eligible projects costs. The EPA allows funding to be used toward idle reduction technologies for diesel-powered line-haul, passenger, and switch engines and locomotives. For more information visit the program web page Clean Diesel Grant Programs | | Wisconsin DNR.

Federal Programs

Local and Regional Project Assistance Program

The Local and Regional Project Assistance Program is a competitive discretionary grant program administered by USDOT. It was established in the Bipartisan Infrastructure Law[1] (BIL) and is a codification of the existing Rebuilding American Infrastructure with Sustainability and Equity (RAISE) program. It provides funding for projects with a significant local or regional impact that improve transportation infrastructure, including passenger or freight rail projects.

Formerly known as the Better Utilizing Investments to Leverage Development (BUILD) and Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grants program, it provides competitive grant funding to any public entity including municipalities, counties, port authorities, states, Tribal governments, and MPOs.

Projects for RAISE funding are evaluated based on criteria that includes safety, environmental sustainability, quality of life, economic competitiveness, state of good repair, innovation, and partnership. USDOT prioritizes projects that can demonstrate improvements to racial equity, reduce impacts of climate change, and create good-paying jobs.

This program can provide capital funding directly to any public entity, including municipalities, counties, port authorities, Tribal governments, and MPOs. The maximum grant award is $25 million, and no more than $100 million can be awarded to a single state. The BIL provides $7.5 billion in funding for this program for 2022 through 2026. For more information visit the program web page RAISE Discretionary Grants | US Department of Transportation (transportation.gov).

[1] *Bipartisan Infrastructure Law Information from FRA | FRA (dot.gov)*

Consolidated Rail Infrastructure and Safety Improvements Program

The Consolidated Rail Infrastructure and Safety Improvement Program (CRISI) is a competitive grant program administered by the Federal Railroad Administration (FRA) that funds projects that improve the safety, efficiency, and reliability of intercity passenger and freight rail. In 2020 there was over $320 million available funding, with 50 projects in 29 states being selected for awards. The BIL provides $5 billion in advanced appropriations for CRISI for 2022 through 2026. Eligible projects include but are not limited to deployment of railroad safety technology, highway-rail grade crossing improvement projects, rail line relocation and improvement projects, regional rail and corridor service development plans and environmental analyses. The Twin Cities-Milwaukee-Chicago (TCMC) Passenger Rail Project was selected to $31.8 million from the CRISI program. The first year of TCMC rail service is anticipated to begin in 2024[2]. For more information visit the program web page Consolidated Rail Infrastructure and Safety Improvements Program | FRA (dot.gov).

Federal-State Partnership for State of Good Repair Grant Program

The Federal-State Partnership for the State of Good Repair is a Federal Railroad Administration (FRA) administered discretionary grant program that provides funding for capital projects to repair, replace, or rehabilitate qualified railroad assets to reduce the state of good repair backlog and improve intercity passenger rail. Eligible projects include those that replace existing assets in-kind, replace existing assets with assets that increase capacity or provide a higher level of service, ensure that service can be maintained while existing assets are brought to a state of good repair, and bring existing assets to a state of good repair. In 2020 there were 11 projects selected with over $291.4 million given in grants. The BIL provides $12 billion for this program for 2022 through 2026. For more information visit the program web page Federal-State Partnership for State of Good Repair Grant Program | FRA (dot.gov).

Infrastructure for Rebuilding America Grants (USDOT)

INFRA (known statutorily as the Nationally Significant Multimodal Freight and Highway Projects) awards competitive grants for multimodal freight and highway projects of national or regional significance to improve the safety, efficiency, and reliability of the movement of freight and people in and across rural and urban areas. INFRA grants are available to states, MPOs, local

[2] *For more info on the TCMC project see* ***Chapter 5 Intercity Passenger Rail – Corridor and Long-distance***

governments, Tribal Governments, and other entities to fund projects that improve safety, generate economic benefits, reduce congestion, enhance resiliency, and hold the greatest promise to eliminate freight bottlenecks and improve critical freight movements. Eligible projects include: a highway freight project carried out on the National Highway Freight Network; a highway or bridge project carried out on the National Highway System (NHS) including projects that add capacity on the Interstate System to improve mobility or projects in a national scenic area; a highway-railway grade crossing or grade separation project; or a freight project that is: (1) an intermodal or rail project, or (2) within the boundaries of a public or private freight rail, water (including ports) or intermodal facility. In 2021 the USDOT sought INFRA projects that address climate change and environmental justice. Racial equity will also be considered as a selection criterion.

The BIL provided an increase in funding for INFRA from 2022 to 2026. This is a yearly application. For more information visit the program web page The INFRA Grants Program | US Department of Transportation (transportation.gov).

Railroad Trespassing Suicide Prevention Grant Program

This program provides funding for targeted outreach campaigns to reduce the number of railroad-related suicides that involve railroad trespassing. Funding available for the award is $293,000, with a maximum of $100,000 per project. Projects eligible for funding will implement a proposed outreach campaign that may involve training staff to identify individuals at risk and intervene, raising awareness of services via signage or public awareness campaigns, or implementing other strategies likely to be effective. Recipients for this grant must be an organization in the United States that focuses on suicide prevention and/or mental health assistance that can implement an outreach campaign for reducing suicide involving railroad trespassing or a railroad carrier interested in starting or expanding efforts to prevent trespass suicide. For more information visit the program web page Railroad Trespassing Suicide Prevention Grant Program | FRA (dot.gov).

Railroad Trespassing Enforcement Grant Program

The objective of this FRA program is to reduce railroad trespassing along the rail rights-of way, thereby reducing trespassing-related incidents. Funding is limited to hourly wages for law enforcement officials to enforce trespassing laws at rail trespass "hot spots" within their respective jurisdictions. Eligible recipients include state, county, municipal, local, and regional enforcement agencies. At least one mile of FRA-regulated railroad track must be within the

boundaries of the applying agency's jurisdiction. For more information visit the program web page Railroad Trespassing Enforcement Grant Program | FRA (dot.gov).

Restoration and Enhancement Grants Program

This FRA program funds operating assistance grants for initiating, restoring, or enhancing intercity passenger rail transportation. Eligible projects include increasing the frequency of current service, offering new on-board services, establishing new service, extension of current service, or restoration of previously operated service. Eligible recipients include a state or group of states, an Interstate Compact, a public agency or publicly chartered authority established by one or more states, a political subdivision of a state, Amtrak or another rail carrier that provides intercity rail passenger transportation, any rail carrier in partnership with at least one of the entities from above, or any combination of the entities described above.

WisDOT was awarded over $12.5 million for the Twin Cities-Milwaukee-Chicago intercity passenger rail service project to add a second daily roundtrip passenger train between Union Depot in Saint Paul, Minnesota, and Union Station in Chicago. The BIL provided $250 million in advanced appropriation and $250 million in fully authorized funds for 2022 through 2026. For more information visit the program web page Restoration and Enhancement Grant Program | FRA (dot.gov).

Corridor Identification and Development Program [3]

Section 22308 of the BIL created this new program to identify and develop a pipeline of intercity passenger rail corridor projects for FRA funding. Once selected, FRA works with the applicants to determine the level of financial support necessary to implement the proposals, support the completion of service development plans, and carry out other pre-service implementation tasks. Projects identified in a service development plan and corridor inventory under this program will be given priority when applying for Federal-State Partnership funds. Program guidelines and application process were not defined at the time of the WRP 2050's development in July 2022.

Interstate Rail Compacts Grant Program

Section 22306 of BIL creates a new FRA program to provide financial support for interstate compacts formed to plan, oversee, or otherwise advance the creation of new intercity passenger

[3] *IF11920 (congress.gov), version updated Feb. 10, 2022*

rail routes via planning. Up to 10 compacts among two or more states are eligible to be selected for a grant of up to $1 million per year. Appropriations are provided by a $3 million annual set-aside from Amtrak National Network grant funds. New routes advanced under an interstate compact are eligible to receive funds set aside from Amtrak National Network appropriations for corridor development. For more information visit the program web page Bipartisan Infrastructure Law Information from FRA | FRA (dot.gov).[4]

Federal-State Partnership for Intercity Passenger Rail Grants

This $36 billion USDOT competitive grant program funds projects that reduce the state of good repair backlog, improve performance, or expand or establish new intercity passenger rail service including privately operated intercity passenger rail service if an eligible applicant is involved. This program was formerly known as the Federal-State Partnership for State of Good Repair Grant Program.

Eligible projects repair, replace, or rehabilitate qualified railroad assets and improve intercity passenger rail performance. Eligible capital projects include those that replace existing assets in-kind, replace existing assets with assets that increase capacity or provide a higher level of service, ensure that service can be maintained while existing assets are brought to a state of good repair, and bring existing assets to a state of good repair.

Eligible uses include projects to replace, rehabilitate, or repair infrastructure, equipment, or a facility used for providing intercity passenger rail service to bring such assets into a state of good repair; projects to improve intercity passenger rail service performance, including reduced trip times, increased train frequencies, higher operating speeds, improved reliability, expanded capacity, reduced congestion, electrification, and other improvements, as determined by the USDOT Secretary; projects to expand or establish new intercity passenger rail service; and a group of related projects described previously. Eligible recipients include states, groups of states, an interstate compact, a public agency or publicly chartered authority established by one or more states, a political subdivision of a state, Amtrak, and Federally recognized Native American Tribes. For more information visit the program web page Federal-State Partnership for State of Good Repair Grant Program | FRA (dot.gov).

[4] *Bipartisan Infrastructure Law Information from FRA | FRA (dot.gov)*

Amtrak National Network Grants

This $15.75 billion program provides funding to Amtrak for capital projects to eliminate Amtrak's backlog of deferred maintenance of rolling stock, facilities, stations, and infrastructure on the National Network. Eligible uses include acquiring new passenger rail rolling stock to replace Amtrak's aging and obsolete passenger equipment fleet and related facilities, bringing Amtrak-served stations into compliance with the Americans with Disabilities Act, eliminating the backlog of deferred capital work on Amtrak-owned railroad assets not located on the Northeast Corridor, and projects to eliminate the backlog of obsolete assets associated with Amtrak's national rail passenger transportation system, such as systems for reservations, security, training centers, and technology. For more information visit the program web page Federal Grants to Amtrak | FRA (dot.gov).

Rail Crossing Elimination Program

This FRA competitive grant program was created by the BIL to provide funds for the mitigation or elimination of hazards at highway-rail crossings. Eligible projects include grade separation or closure, track relocation, improvement, or installation of protective devices such as signals or signs, other means to improve crossing safety, and the planning, environmental review, and design of an eligible project. Eligible recipients include states, political subdivisions of a state, Tribes, local governments, and MPOs. The BIL provides $3 billion in advanced appropriations and $2.5 billion in authorized funds for 2022 through 2026. For more information visit the program web page Railroad Crossing Elimination Grant Program Fact Sheet | FRA (dot.gov).

Federal Transit Administration Programs for Local Transit

FTA administers a number of programs aimed at local transit. Eligible activities include providing transit linkages to passenger rail facilities, commuter rail stations and intercity bus stops. However, the main focus of these programs is passenger or commuter rail. These programs are identified below:

- Urbanized Area Formula Grants to urbanized areas with more than 50,000 population.
- Section 5311 Program provides formula Grants for Rural areas for non-urbanized areas and small cities with under 50,000 people that can be used on intercity bus service.
- Section 5310 Program, or the Enhanced Mobility of Seniors and Individuals with Disabilities, provides funds for capital expenses for service where transit is otherwise unavailable or insufficient.

- Public Transportation on Indian Reservations Competitive Grants for public transit on Native American Tribal lands.

See FTA's funding program web page for more information Funding | FTA (dot.gov).

Capital Investment Grants

This $8 billion FTA competitive grant program for state and local government agencies including transit agencies funds transit capital investments, including heavy rail, commuter rail, light rail, streetcars, and bus rapid transit. Federal transit law requires transit agencies seeking Capital Investment Grants funding to complete a series of steps over several years. The law also requires projects to be rated by FTA at various points in the process according to statutory criteria evaluating project justification and local financial commitment.

Eligible uses include new fixed guideway capital projects or small start projects, fixed guideway corridor development for projects in the advanced stages of project development or engineering, and core capacity improvement projects including the acquisition of real property and capacity improvement projects to increase the capacity of an existing fixed guideway system corridor by at least 10 percent. Core capacity improvement projects do not include elements to improve general station facilities or parking, or acquisition of rolling stock alone. For more information visit the program web page Capital Investment Grants Program | FTA (dot.gov).

All Stations Accessibility Program

This $1.75 billion FTA grant program for state and local government authorities provides capital funding to upgrade the accessibility of existing rail fixed guideway public transportation systems, such as commuter rail stations, for people with disabilities. Only capital funding for these purposes are eligible expenses. For more information visit the program web page Fact Sheet: All Stations Accessibility Program | FTA (dot.gov).

Rail Vehicle Replacement Grants

This $1.5 billion FTA competitive grant program created by the BIL for state and local governments funds capital projects for the replacement of rail rolling stock used in commuter rail or streetcar service. No more than three new competitive awards may be announced each fiscal year. FTA may select projects for multi-year awards. For more information visit the program web page Fact Sheet: State of Good Repair and Rail Vehicle Replacement Program | FTA (dot.gov).

Pilot Program for Transit Oriented Development

This FTA competitive grant program has $68.8 million available for state or local government authorities which are Federal Transit Administration grant recipients. This program provides funding to local communities to integrate land use and transportation planning with a new fixed guideway or core capacity transit capital investment such as commuter rail and streetcars. Eligible uses are for site specific and comprehensive planning. Projects must examine ways to improve economic development and ridership, foster multimodal connectivity and accessibility, improve transit access for pedestrian and bicycle traffic, engage the private sector, identify infrastructure needs, and enable mixed-use development near transit stations. For more information visit the program web page Pilot Program for Transit-Oriented Development Planning – Section 20005(b) | FTA (dot.gov).

Railway-Highway Crossings Program (RHCP)

The FHWA Railway-Highway Crossings Program provides formula funds for the elimination of hazards at railway-highway crossings, including projects to reduce pedestrian fatalities and injuries from trespassing at grade crossings. Program funds are eligible for projects at all public crossings including roadways, bike trails and pedestrian paths. The OCR and WisDOT receive funding under this program. The BIL provides $1.2 billion for the RHCP, increased the maximum incentive payment that a state may pay a local government for closing a public at-grade railway-highway crossing from $7,500 to $100,000, and increased the federal share for projects financed with set-aside funds from 90% to 100%. For more information visit the program web page Railway-Highway Crossings (Section 130) Program - Safety | Federal Highway Administration (dot.gov).

PROTECT Grants

These discretionary grants are for planning, resilience improvements, community resilience and evacuation routes, and at-risk coastal infrastructure. Eligible projects include intercity passenger rail and port facilities. For more information visit the FHWA's web page Bipartisan Infrastructure Law - Fact Sheets | Federal Highway Administration (dot.gov).

National Infrastructure Project Assistance Program ("Mega-projects")

A discretionary program created by the BIL that provides funding for surface transportation projects, including intermodal freight or freight rail projects that provide a public benefit,

highway-rail grade separation or elimination projects, and intercity passenger rail projects. Five billion dollars in advance appropriations from the general fund is available to the program for fiscal years 2022 through 2026. These funds are available to states, MPOs, local governments, special purpose districts or public authorities with a transportation function, Tribal governments, and partnerships between Amtrak and one or more eligible entities. For more information visit FHWA's web page Bipartisan Infrastructure Law - Fact Sheets | Federal Highway Administration (dot.gov).

National Highway Freight Program (NHFP)

The NHFP was established by the FAST Act to improve the efficient movement of freight on the National Highway Freight Network (NHFN). Changes in the BIL allows states to use up to 30% of funding on freight intermodal or freight rail projects, up from 10%. For more information visit the FHWA's web page Bipartisan Infrastructure Law - Fact Sheets | Federal Highway Administration (dot.gov).

Nationally Significant Freight and Highway Projects (NSFHP)

Established by the FAST Act to provide financial assistance, via grants or credit assistance, to national and regionally significant freight and highway projects that further the program goals, including improving the connectivity between modes of freight transportation. Freight intermodal and freight rail projects are eligible, and the BIL amended the cap on eligible multimodal projects to 30 percent. Grants may not exceed 60% of the total eligible project costs, while other Federal assistance can be used for a total federal participation of up to 80% of eligible costs. For more information visit the FHWA's web page Bipartisan Infrastructure Law - Fact Sheets | Federal Highway Administration (dot.gov).

Operation Lifesaver

Wisconsin Operation Lifesaver (WIOL) operates a private non-profit program with strong state participation. WIOL's safety education program focuses on reducing collisions, fatalities, and injuries at highway-rail grade crossings in Wisconsin. WIOL offers free presentations to general audiences of all age groups and specialized audiences, such as bus drivers, professional truck drivers, law enforcement, and first responders. WIOL's mission is "to eliminate, through education, enforcement and engineering, collisions at grade crossings and on privately owned railroad

property."[5] WisDOT and OCR are partners with WIOL in its safety mission. For more information visit the program web page Wisconsin Operation Lifesaver (oli.org).

[5] *Wisconsin Operation Lifesaver (oli.org))*

Chapter 13 Financial Plan Overview

The Wisconsin Rail Plan 2050 presents WisDOT's vision for rail in Wisconsin and a set of policies and recommended actions to guide decision-making over the 20-year planning horizon.

The Infrastructure Investment and Jobs Act (Pub. L. 117-58), also known as the Bipartisan Infrastructure Law (BIL), was signed into law on November 15, 2021. The BIL will provide unprecedented federal funding for rail improvement projects over the next five years. The BIL includes increases to rail funding, including $102 billion in total rail funding, including $66 billion from advanced appropriations, and $36 billion in authorized funding. It created new programs that can fund rail related activities and changed many existing rail programs, including increased funding amounts and program changes. The information about Federal Railroad Administration programs in this chapter is current as of early 2022.[1]

Funding Rail Improvements and Maintenance

Funding for Wisconsin's transportation system comes from several sources including state revenue, federal funds, bond proceeds, local and service funds, program and general-purpose revenue, and other funds. Funding source, funding rules, budgetary constraints, and level of public and private involvement can differ greatly between programs.

Federal Funding for Rail Transportation

Federal transportation funds generally come from the federal Highway Trust Fund and are then subdivided into the Highway Account to fund highway related projects, and the Mass Transit Account to fund transit related projects. Revenues for the Highway Trust Fund primarily come from federal taxes on gasoline and diesel fuel.

Federal formula transportation funds are authorized to be spent up to the level that is identified in the current federal transportation reauthorization act. Funds are then appropriated, which identifies the amounts and purposes for which funds can be used. Once appropriated, budget authority allows funds to be spent. Generally, budget authority is not given at 100% of the funding level. Once both funds and budget authority are available, the funds can be obligated to specific projects. All funding sources have limitations on how they can be used, which are

[1] *Bipartisan Infrastructure Law Information from FRA | FRA (dot.gov); FHWA BIL site: Bipartisan Infrastructure Law - Fact Sheets | Federal Highway Administration (dot.gov)*

outlined in the federal transportation reauthorization act. Federal discretionary transportation funds are competitive and must be applied for, and contain limitations identified in their enabling legislation.

Several federally funded programs support intercity and long-distance passenger rail, freight rail, and commuter rail needs. Federal programs are listed and discussed in more detail in **Chapter 12 Detail of Programs to Implement the Plan**. Federal funding that may be used to support rail comes from the Federal Railroad Administration (FRA), Federal Highway Administration (FHWA), and Federal Transit Administration (FTA).

Funding from FRA is determined annually and is discretionary. Changing priorities from the executive and legislative branches of the federal government result in a mix of newer initiatives and recurring, long-term programs.

Funding from FHWA is allocated from the Highway Trust Fund to states and metropolitan planning organizations through formulas. This includes programs that address highway-rail crossings; the Congestion Mitigation and Air Quality Improvement Program (CMAQ) for improving air quality; the Carbon Reduction Program; and the Transportation Alternatives Program (TAP) that funds multimodal and alternative transportation projects.

Funding from FTA is provided from Mass Transit Account of the Highway Trust Fund and the federal general fund. Funds can be used to support planning and implementation of transit activities, including commuter rail.

Federal Funding Support for Amtrak

The National Passenger Railroad Corporation (Amtrak) operates the nation's intercity passenger rail service. Passenger rail service includes both long-distance and corridor-level service. Amtrak fully funds long-distance trains such as the Empire Builder service that operates in Wisconsin, connecting the Midwest to the West Coast. Amtrak contracts with several states to operate corridor services, including Wisconsin and Illinois for the Hiawatha service. A sizable portion of Amtrak's revenues are derived from ticket fares. In addition to revenues from its own operations, Amtrak receives operating and capital funding through the annual budget appropriations from Congress.

Other Federal Funding or Assistance

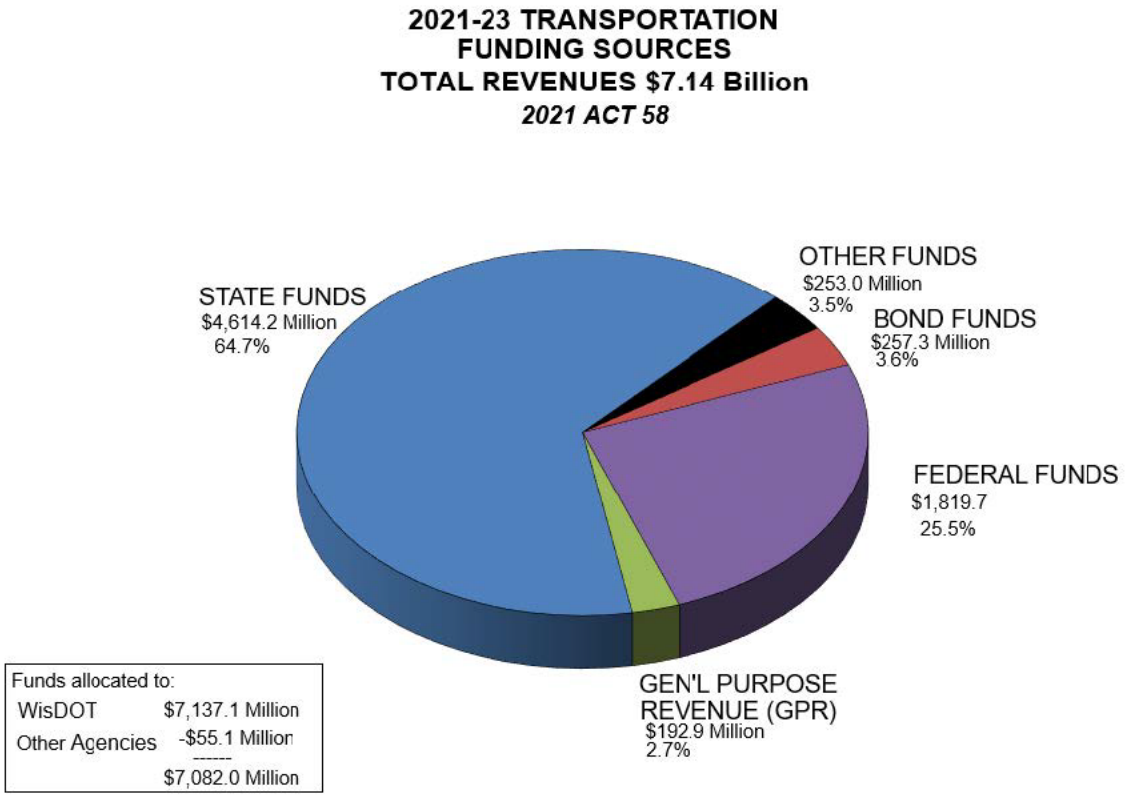
Federal funding and financing can also include economic development grants, direct loans, and beneficial tax status or credit assistance such as loan guarantees.

Private activity bonds are one example. Tax-exempt private activity bonds are used to facilitate private investment in eligible projects by granting the private entity tax-exempt status on the bonds. Providing private developers and operators with access to tax-exempt interest rates substantially lowers the cost of capital, thus enhancing investment prospects. WisDOT will monitor use of private activity bonds for potential future use.

State Funding for Rail

State funds largely come from state fuel taxes, driver's license and non-driver identification fees, and vehicle registration fees, and are allocated through the state's biennial budget process. State and federal transportation funds are appropriated to various transportation programs by the state legislature (**Figure 13-1**). Transportation programs are limited in their use by state and federal rules.

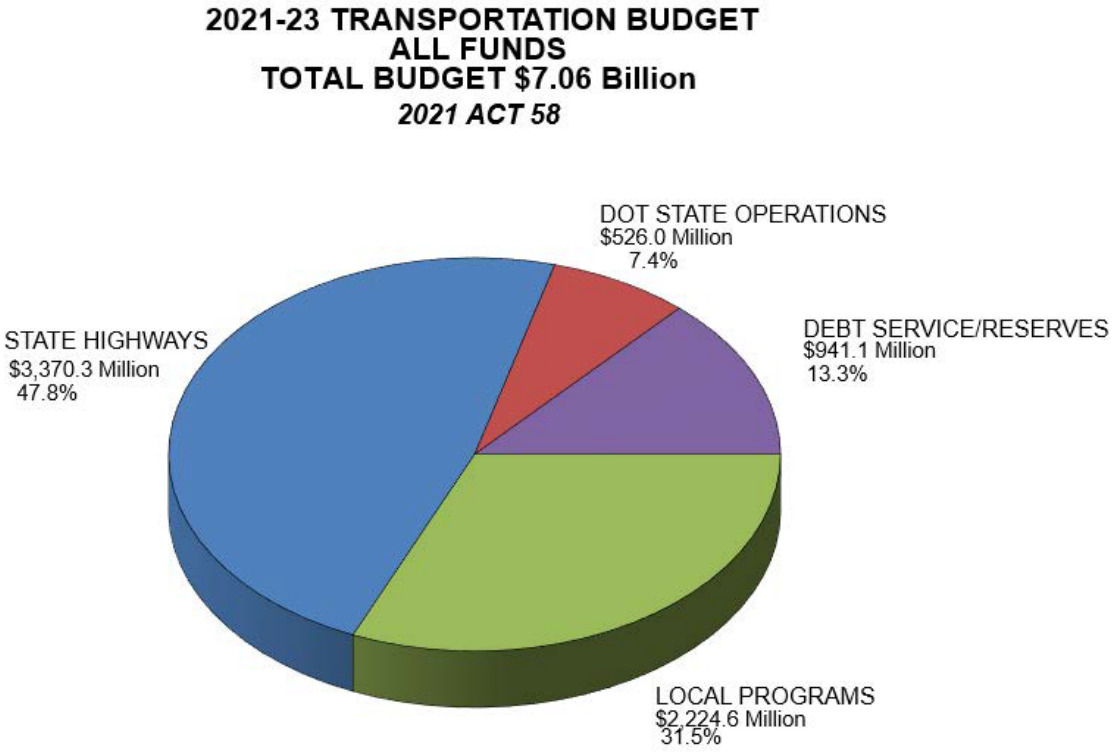
Figure 13-1: Wisconsin's State Transportation Budget Funding Sources[2]



[2] *2021-23 Biennial Budget Highlights 2021 Wisconsin Act 58. Wisconsin Department of Transportation - Bureau of Budget. 2021-23 Biennial Budget Highlights (wisconsindot.gov)*

Figure 13-2 illustrates WisDOT's expenditure authority in four categories - state highways, local programs, debt service and reserves, and WisDOT operations. Most rail funding programs are accounted for in the local programs' category, which accounted for 31.5% of expenditure authority in the 2021-2023 biennium. Rail bond payments are accounted for in the debt service/reserves section, 13.3% of the expenditure authority during the biennium. Between the 2017-2019 and the 2021-2023 biennium expenditures for local programs increased slightly as a proportion of total expenditures.

Figure 13-2: Wisconsin's State Transportation Budget Expenditures[3]



[3] *Ibid.*

Rail Related Expenditures

The State of Wisconsin is committed to the long-term investment in rail transportation through numerous rail improvement programs. WisDOT has been providing freight rail financial assistance since 1977. Early efforts focused on assisting community efforts to preserve freight rail service to communities that would otherwise have been negatively affected if service was abandoned.

In 1992, Wisconsin voters approved an amendment to the state constitution allowing the state to become directly involved in rail acquisition, rehabilitation, and development projects. Two programs operate under this authority, the Freight Rail Infrastructure Improvement Program (FRIIP) and the Freight Rail Preservation Program (FRPP). For a complete list and details of each program see **Chapter 12 Detail of Programs to Implement the Plan**.

The 2021-2023 biennial budget provided $20 million in general obligation (GO) bond authority for the FRPP, $25 million segregated funds (SEG) and an additional $10 million in GO bond authority for the Passenger Rail Route Development Program.[4] The 2019-2021 biennial budget authorized the use of FRIIP funds for a new intermodal facilities grant program. The budget requires grants under this program to be made from the FRPP after July 1, 2021.[5]

Rail investments also occur through WisDOT highway programs, particularly investments related to the highway-rail interface. The funding for many of these programs come from state appropriations.[6] For example, railroad crossing improvements are often made as part of highway projects occurring through the Majors Highway Development Program, Backbone Program, the Resurfacing, Restoration, and Rehabilitation (3R) program, and the Surface Transportation Block Grant (STBG) program. See **Chapter 14 Financial Plan Illustrative Project Listing Tables** for a list of railroad crossing improvement projects and railroad crossing repair projects.

WisDOT coordinates with other state agencies (e.g., Department of Natural Resources), local governments, and Rail Transit Commissions that provide funding for rail preservation activities, such as the preservation of rail corridors for interim trail use. See **Chapter 2 Introduction to Rails in Wisconsin** for more information about interim trail use and Rail Transit Commissions. To

---

[4] 2021-23 Biennial Budget Highlights 2021 Wisconsin Act 58. Wisconsin Department of Transportation - Bureau of Budget. 2021-23 Biennial Budget Highlights (wisconsindot.gov)

[5] 2019-21 Biennial Budget Highlights 2019 Wisconsin Act 9. Wisconsin Department of Transportation - Bureau of Budget.

[6] 2021 Wisconsin Act 58. (2021). <https://doa.wi.gov/budget/SBO/2021%20Wisconsin%20Act%2058.pdf>

learn more about DNR programs related to preserving rail corridors see the DNR webpage on state trails.[7]

The Office of the Commissioner of Railroads (OCR), an independent body, also has rail crossing improvement programs. The OCR oversees a variety of highway-rail crossing issues including:

- Replacement or enhancement of passive and active warning devices at highway-rail crossings
- Repair of rough highway-rail crossing surfaces
- Installation of highway-rail crossings at new locations
- Alteration of existing highway-rail crossings
- Closing or consolidating existing highway-rail crossings

The OCR oversees a federal and state funding program that fully funds approximately 20 signal installations per year. Funding is allocated under a signal maintenance program which funds 50% of the cost to maintain signal equipment at about 1,800 highway-rail crossings.[8]

Passenger Rail Operating Assistance

Wisconsin along with Illinois provide funding for the operations of the existing Hiawatha service between Chicago and Milwaukee. Operating assistance is a required component of regional passenger rail services and important to the overall successful operation of the intercity passenger rail network. Federal regulations require that corridor passenger rail services under 750 miles in length receive operating assistance from a state or local agency. The exact operating assistance costs to the state vary and are impacted by factors such as refinements to Amtrak's cost estimate methodology, annual ticket revenues, and national policy.

Wisconsin, Minnesota, and Amtrak are in the process of adding additional regional service between Chicago, Milwaukee, and the Twin Cities through the TCMC project.[9] The state also hosts the Empire Builder service, which is one of Amtrak's long-distance routes. The Empire Builder provides passenger rail service between Chicago and Seattle or Portland as part of Amtrak's national network and does not receive operating support from any state.

---

[7] *State Trails. Wisconsin DNR. <https://dnr.wisconsin.gov/topic/parks/trails>*
[8] *Ibid.*
[9] *See* **Chapter 14 Financial Plan Illustrative Project Listing Tables** *for anticipated TCMC operating and capital funds*

Section 209 of the Passenger Rail Investment and Improvement Act of 2008 (PRIIA) requires Amtrak to develop a consistent method for cost sharing to ensure consistency in the way states pay for corridor services. WisDOT works with Amtrak to follow the Section 209 cost share policy.

Rail Bonding

Wisconsin uses general obligation bonds to fund some rail programs, such as FRPP and the Passenger Rail Route Development Program. These bonds are repaid from the transportation fund or the state's general fund.

State Infrastructure Banks

State Infrastructure Banks (SIBs) are established under federal law, administered by states, and operate with revolving loan funds. Once they are capitalized with federal aid and state funds, a SIB can offer loans or other financial assistance to sponsor projects. WisDOT's SIB program was created in 1998 and is a revolving loan program for transportation infrastructure improvements that help preserve, promote, and encourage economic development and/or transportation efficiency, safety, and mobility. Rail projects are eligible.[10]

Assessing Rail Costs and Benefits

Justifications for public participation in railroad infrastructure improvements generally focus on the public benefits arising from reduced traffic congestion, economic development, reduced environmental emissions, increased safety, and other positive externalities. Benefit-cost analysis is a policy evaluation tool that has been used in a variety of public investment projects to determine whether the social benefits of a public investment project outweigh its social costs, and to rank projects according to their cost effectiveness. The tools necessary to identify externalities and quantify the benefits that may result from railroad infrastructure improvements include demand models that account for shipper responsiveness to changes in prices, quality of service, and economic activity, and supply models that can be used to model the impacts of infrastructure investments on capacity.

Unlike highway projects where public infrastructure is involved; the public funding of railroad projects often involves the commitment of public funds to the infrastructure of private entities. The use of cost-benefit analysis that encompasses global costs and benefits is a key to targeting

[10] *State Infrastructure Bank (SIB) Program. WisDOT website. <https://wisconsindot.gov/Pages/doing-bus/local-gov/astnce-pgms/aid/sib.aspx> Accessed 2/9/2022.*

projects. WisDOT uses two different methodologies for analyzing benefits and costs of projects. The benefit-cost analysis for passenger rail projects includes economic and environmental factors, while the analysis for freight rail projects includes transportation savings for the project sponsor.

Wisconsin's Long-Range Rail Investment Program

PRIIA requires states to develop a long-range rail investment program as part of its state rail plan development effort. The program must include a list of "any rail capital projects expected to be undertaken or supported in whole or in part by the State." See **Chapter 13 Financial Plan Overview** for Wisconsin's long-range rail investment program.

Future funding for Rail

As discussed throughout the rail plan, WisDOT has identified issues, needs, and recommended actions to implement during the plan horizon to 2050 to achieve the statewide vision for rail transportation. Implementation of these actions will require sufficient funding. Several federal funding programs support rail planning and investment, which will help Wisconsin continue to improve the state's intercity passenger rail network. In addition, there has been legislative support and approval of program increases to support freight rail preservation activities. A robust rail network that integrates with the state's overall transportation system will require ongoing funds. WisDOT will continue to monitor future transportation funding at the federal level and will strategically position the state to apply for federal competitive grants.

Sustained federal funding commitments are crucial to achieving planned improvements of the intercity passenger rail network. Likewise, the role the federal government plays in funding commuter rail is crucial to Wisconsin communities' ability to implement metropolitan commuter rail systems. The federal government will continue to play a role in funding safety programs such as rail-highway crossings and complex multi-jurisdictional freight projects.

Wisconsin has a long history of investing in rail initiatives by funding studies of future passenger rail routes, providing grants and loans for freight rail infrastructure improvements, providing state match on federal grants to improve passenger rail infrastructure; or preserving underutilized rail lines for future use. WisDOT will continue to identify funding needs, set priorities, and work with the legislature, the railroads and other stakeholders, including the FRA and FTA, to manage and build upon Wisconsin's quality rail network.

Capital Finance Plan

Chapter 14 Financial Plan Illustrative Project Listing Tables lists the planned capital projects and studies whose recommendations have not been programmed.

Chapter 14 Financial Plan Illustrative Project Listing Tables

Summary information of projects in the main freight, crossing, and passenger rail programs are provided in the project listing tables shown in this chapter. The project tables show capital projects that are funded and anticipated to be funded as well as unfunded projects and studies provided for illustrative purposes. Brief descriptions of freight, intercity passenger rail and commuter rail studies from MPO long-range transportation plans are also included for reference.

Funding information is provided by the state fiscal year (SFY) in which the project will receive funds for state funded programs. State fiscal years run from July 1 to June 30 each calendar year to reflect funding available in that year's state budget. Project listings are from WisDOT's State Transportation Improvement Program (STIP). The STIP meets the requirements of 23 CFR 450.21. It is a four-year prioritized listing of highway and transit projects for the state. The STIP includes both capital and non-capital projects that are federally funded or considered regionally significant in both urban and rural areas. The STIP incorporates the Transportation Improvement Programs (TIPs) prepared by the state's 14 metropolitan planning organizations (MPOs) by reference. The STIP is updated monthly to reflect the most current information about projects. Abbreviations used in the following tables are listed in the STIP.[1]

This chapter is organized in a way that the project listings can be updated regularly to reflect on-going funding program cycles. Private railroad companies were asked to voluntarily provide details of projects from their capital expenditure plans for informational purposes and chose not to provide information at this time.

The Wisconsin State Rail Plan 2050 project listing table amendment process involves a 30-day public comment period before adoption of changes. This chapter, along with the **Chapter 10 Rail Transportation Policies and Actions, Chapter 12 Detail of Programs to Implement the Plan** and **Chapter 13 Financial Plan Overview** comprise the WRP 2050 implementation and financial plan.

Publicly Funded Freight Rail Projects

Table 14-1: shows the planned near term and long-range freight rail projects funded by WisDOT's two main freight rail programs - the Freight Rail Preservation Program (FRPP) and Freight Rail Infrastructure Improvement Program (FRIIP) programs. Funded freight rail projects include FRPP and FRIIP funding, federal funding, and private funds from railroads. See **Chapter 12**

[1] *Wisconsin Department of Transportation Statewide Transportation Improvement Program (STIP) (wisconsindot.gov)*

Detail of Programs to Implement the Plan for details on the reoccurring FRPP and FRIIP programs. Grants are awarded every year, with the program funding amount decided every two-years as part of the state budget cycle.

Table 14-1: Publicly Funded and Anticipated Freight Projects, as of 2022

ID	Project Location	SFY	WisDOT Program and Funding Sources	Description	Estimated Total Cost
FR-1	Merrimac	2021	US DOT INFRA, FRPP, WSOR, WRRTC	Bridge rehabilitation phase 3	$13,975,000
FR-2	Crawford to Wauzeka	2021	FRPP, WSOR	10.6 miles of rail replacement (Continuous Welded Rail)	$5,069,782
FR-3	Reedsburg Subdivision	2021	FRPP, WSOR	Bridge rehabilitation	$773,566
FR-4	Prairie Subdivision	2021	FRPP, WSOR	Bridge replacements	$1,167,059
FR-5	Monroe Subdivision	2021	FRPP, WSOR	Bridge replacements	$2,612,688
FR-6	Green Bay to Crivitz	2013	FRPP, E&LS	Replace bridge U-330 and rehabilitate track	$3,000,000
FR-7	Madison	2022	FRPP; C of Madison	Replace bridge 259	$3,836,000
FR-8	Reedsburg subdivision	2022	FRPP, WSOR	Bridge rehabilitation	$776,720
FR-9	Prairie subdivision	2022	FRPP, WSOR	Bridge replacements	$3,744,255
FR-10	Waunakee to Devils Lake	2022	FRPP; WSOR	Rehabilitate track	$4,728,000
FR-11	Janesville	2022	USDOT RAISE; FRPP, WSOR, WRRTC; PRTC; ECWRC	Rehabilitate five bridges and 1.5 miles of track	$11,280,700
FR-12	Stanley	2022	FRIIP; Northern Elevator	Construct 6,900 feet of track for agriculture services terminal	$4,228,983
FR-13	Luxemburg	2022	FRIIP; Rio Creek Feed Mill	Construct overhead grain bins	$1,700,000
	Boscobel		Not yet programmed	Replace bridge B-298	$1,797,237
	Green Bay, FOX Luxemburg Sub		Not yet funded	Rehabilitate swing bridge	$6,875,000
	Green Bay, FOX Denmark Sub		Not yet funded	Rehabilitate swing bridge	$11,617,100
	Appleton, FOX Kimberly Sub		Not yet funded	Rehabilitate swing bridge	$2,913,900

ID	Project Location	SFY	WisDOT Program and Funding Sources	Description	Estimated Total Cost
	Devils Lake to Reedsburg		Not yet programmed	Rehabilitate 28 miles of track	$5,880,000
	Wauzeka to Blue River		Not yet programmed	15.15 miles of rail replacement (Continuous Welded Rail)	$9,105,128
	Blue River to Avoca		Not yet programmed	15.15 miles of rail replacement (Continuous Welded Rail)	$8,663,240
	Avoca to Spring Green		Not yet programmed	15.50 miles of rail replacement (Continuous Welded Rail)	$8,931,960
	Systemwide		Not yet programmed	Rehabilitate and replace 8 bridges	$10,182,000
	Systemwide		Not yet programmed	Rehabilitate and replace 11 bridges	$10,171,470
	Spring Green to Madison		Not yet programmed	Replace 36 miles of 90-lb jointed rail with 115-lb. Continuous Welded Rail.	$25,000,000
	Systemwide		Not yet programmed	Replace and rehabilitate bridges	TBD
	Green Bay to State Line		Not yet programmed	Replace and rehabilitate 16 bridges	TBD
	Systemwide		Ongoing	FRPP program refunded in each state budget cycle	TBD
	Systemwide		Ongoing	FRIIP program refunded in each state budget cycle	TBD

Highway-Rail Interface Projects

Highway-rail interface projects are projects involving the crossings of railroads and highways. There are several railroad crossing programs and highway programs that involve railroad crossings.

State Highway Rehabilitation Program

The State Highway Rehabilitation Program is designed to extend the life of existing highways and to enhance highway safety. These projects will improve public safety; improve signal reliability; and decrease maintenance and signal outages. While most projects are funded with 80 percent federal funds and 20 percent state/local funds, the funding split varies for some rail-highway interface projects. State Highway Rehabilitation includes projects funded through the State 3R program.

Surface Transportation Block Grant Program (STBG)

The Surface Transportation Block Grant program (STBG), classified by WisDOT into STP-Urban and STP-Rural, provides flexible funding that may be used by states and local governments 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. The STBG program is 80% federally funded and 20% state or locally funded. STBG projects improve public safety; improve signal reliability; and decrease maintenance and signal outages..

Safety Warning Devices

The FHWA Safety Warning Devices Section 130 program funds projects consisting mostly of warning devices, but also includes crossing reconstruction, approach roadway reconstruction, and roadway/railroad separation structures. Projects improve public safety by reducing interference between trains and automobiles; improve signal reliability; improve on-time performance; enhance operating safety; and decrease maintenance and signal outages.

Office of the Commissioner of Railroads - Safety Warning Devices

These projects are funded through the Office of the Commissioner of Railroads (OCR) and includes only warning devices. The Office of the Commissioner of Railroads - Warning Devices program funding consists of 65% federal and 35% percent state funds. The funding ratio can be adjusted by OCR based on state funds available. The projects improve public safety by reducing

interference between trains and automobiles; improve signal reliability; improve on-time performance; enhance operating safety; and decrease maintenance and signal outages. This improves communication and signal reliability for freight operations and enhance the quality of freight service, while reducing freight train delays and operational conflicts with passenger trains. These projects are listed in WisDOT's STIP if associated with state owned track or crossing a state trunk highway.

Major Highway Development (Majors) Program

Major Highway Development projects are generally the most complex and costly projects initiated by WisDOT. These projects are long-term solutions to the most serious deficiencies on highly traveled segments of the highway system.[2] Highway-rail interface projects are sometimes included as part of Majors projects. Major Highway project funds used for these projects improves public safety; reduces conflicts between trains, automobiles, bicycles, and pedestrians; improves signal reliability; and decreases maintenance and signal outages. Majors project funding sources include federal, state, and bond funds.

Railroad Crossing Repair

The Railroad Crossing Repair Program is a reimbursement program that aids railroads that repair railroad crossings of state highways. Crossing repair funds used for this project improve public safety and reduce road maintenance costs at at-grade crossings. Railroad Crossing Repair projects make improvements to existing at-grade crossings that increase personal safety and reduce wear and tear on vehicles. Projects are 85% state funded and matched with 15% railroad company funding.

Backbone

The Backbone System consists of 1,588 miles of freeways and expressways connecting major economic areas of the state. This includes Wisconsin's 875 miles of Interstate highways. Backbone projects can include highway-rail interface projects. Backbone projects improve public safety; reduce conflicts between trains, automobiles, bicycles, and pedestrians; improve signal reliability for freight operations; and decrease maintenance and signal outages. Backbone project funding sources include federal, state, and bond funds.

[2] *https://wisconsindot.gov/Pages/projects/6yr-hwy-impr/maj-hwy/default.aspx*

Table 14-2: Highway-Rail Interface Projects, as of 2022

ID	SFY	Project Title/Location	Project Limit/Location	WisDOT Program and Funding Sources	Project Concept/Description	Estimated Total Cost
1	2023	PESHTIGO-MARINETTE	CTH T, CNRR XING 181588V SIGNAL	BACKBONE	RR SIGNAL INTERCONNECT	$180,000
2	2023	C FOND DU LAC, WEST DIVISION STREET	CN RR SIGNAL 690112B MP 156.21	LOCAL BRIDGES	R/R OPS- SIGNAL ADJUSTMENTS	$80,000
3	2023	West Allis Cross-Town Connector	Bike and Pedestrian Trail	LOCAL ENHANCEMENTS	R.R./Bike/ped facility	$1,366
4	2023	CO DUNN, CTH B	UP RR XING 183913W	LOCAL-NON STP URBAN/RURAL	RR OPS/TEMPORARY SIGNALS	$151,500
5	2023	CO DUNN, CTH B	UP RR XING 183913W	LOCAL-NON STP URBAN/RURAL	RR OPS/CROSSING SURFACE	$246,440
6	2023	CO DUNN, CTH B	UP RR XING 183913W	LOCAL-NON STP URBAN/RURAL	RR OPS/CROSSING SURFACE	$246,440
7	2023	I-43 NORTH SOUTH FREEWAY	UNION PACIFIC RR BRIDGE B-40-921	MAJORS	RR XING BR REPLACEMENT UPRR 180101F	$2,020,000
8	2023	I-43 NORTH SOUTH FREEWAY	UNION PACIFIC RR BRIDGE B-40-921	MAJORS	RRXING BRRPL UPRR OVERSGHT 180101F	$505,000
9	2023	I-43 NORTH SOUTH FREEWAY	HIGHLAND ROAD TO STH 60	MAJORS	RR/CROSSING SURFACE/180 116V	$200,000
10	2023	I-43 NORTH SOUTH FREEWAY	RR CROSSING AT HIGHLAND ROAD	MAJORS	RR/NEW BRIDGE B-45-0109	$100,000
11	2023	75TH ST, C KENOSHA/V PLEASANT PRAIR	IH 94 TO 43RD AVE	MAJORS	RR/SURFACE 176 067U/UNION PACIFIC	$184,700
12	2023	STH 15-NEW LONDON	USH 45, FV XING SURFACE 693839C	MAJORS	CONST/MISC RR 693839C SURFACE	$151,500

ID	SFY	Project Title/Location	Project Limit/Location	WisDOT Program and Funding Sources	Project Concept/Description	Estimated Total Cost
13	2023	STH 15-NEW LONDON	USH 45, FV XING SIG/GATES 693839C	MAJORS	CONST/MISC RR SIG/GATES 693839C	$353,500
14	2023	T ROCK, STH 11	WSOR RR XING 917706J	RAILROAD CROSSING REPAIR	RR OPS/NEW CROSSING SURFACE/MIS	$111,100
15	2023	V MUSCODA, STH 80	WSOR RR XING 391867V SOUTH	RAILROAD CROSSING REPAIR	RR OPS/NEW CROSSING SURFACE/MISC	$167,660
16	2023	VILLAGE OF SPENCER, STH 98 WEST	RAIL-HWY CROSSING REPAIR	RAILROAD CROSSING REPAIR	XING REPAIR 689933J MILE POST 289.8	$196,950
17	2023	VILLAGE OF SPENCER, STH 98 EAST	RAIL-HWY CROSSING REPAIR	RAILROAD CROSSING REPAIR	XING REPAIR 689933J MILE POST 289.8	$166,650
18	2023	V BANGOR, STH 162	SOO LINE RR XING 390908U	RAILROAD CROSSING REPAIR	RR OPS/NEW CROSSING SURFACE/MISC	$101,000
19	2023	MENOMONIE - CONNORSVILLE	UNION PACIFIC RR XING 183906L	RAILROAD CROSSING REPAIR	R/R OPS/CROSSING SURFACE	$131,300
20	2023	T OF SHELBY, LOSEY BOULEVARD	BNSF RR XING 079827S	SAFETY - RAILROAD WARNING DEVICES	RR OP/REPL SIGNAL,BNGLW,CIRC'T/MISC	$353,500
21	2023	C LA CROSSE, SIMS PLACE	BNSF RR XING 917431D	SAFETY - RAILROAD WARNING DEVICES	RR OPS/REPL SIGNALS; ADD GATES/MISC	$303,000
22	2023	T DIAMOND BLUFF, LOWER RIVER ROAD	BNSF RR XING 080030K	SAFETY - RAILROAD WARNING DEVICES	R/R OPS/SAFETY RAIL WARNING DEVICES	$303,000
23	2023	BIRCHWOOD - EXELAND	WISCONSIN CENTRAL LTD XING 697338L	SAFETY - RAILROAD WARNING DEVICES	R/R OPS/SAFETY RAIL WARNING DEVICES	$353,500

ID	SFY	Project Title/Location	Project Limit/Location	WisDOT Program and Funding Sources	Project Concept/Description	Estimated Total Cost
24	2023	MILWAUKEE AIRPORT 2ND PLATFORM	RR CROSSING 393023R TO 1200FT SOUTH	SAFETY - RAILROAD, ELIMINATION OF HAZARDS	EX- RR/RR CROSSING IMPROVEMENT	$241,000
25	2023	MILWAUKEE AIRPORT 2ND PLATFORM	RR CROSSING 393023R TO 1200FT SOUTH	SAFETY - RAILROAD, ELIMINATION OF HAZARDS	EX- RR/RR CROSSING IMPROVEMENT	$100,000
26	2023	MUSKEGO YARDS CRISI GRANT	MUSKEGO YARD FREIGHT TRACKS	SAFETY - RAILROAD, ELIMINATION OF HAZARDS	EX-RR/SIGNAL DESIGN	$620,000
27	2023	TCMC INTERCITY PASSENGER RAIL GRANT	LA CROSSE - ST. PAUL	SAFETY - RAILROAD, ELIMINATION OF HAZARDS	EX- INFRASTURE IMP FOR 2ND RND TRIP	$931,000
28	2023	TCMC INTERCITY PASSENGER RAIL GRANT	LA CROSSE - ST. PAUL	SAFETY - RAILROAD, ELIMINATION OF HAZARDS	EX-INFRASTR IMP 2ND RND TRP WI ONLY	$4,258,012
29	2023	TCMC INTERCITY PASSENGER RAIL GRANT	LA CROSSE - ST. PAUL	SAFETY - RAILROAD, ELIMINATION OF HAZARDS	EX-INFRASTR IMP 2ND RND TRP MN ONLY	$16,018,234
30	2023	TCMC INTERCITY PASSENGER RAIL GRANT	LA CROSSE - ST. PAUL	SAFETY - RAILROAD, ELIMINATION OF HAZARDS	EX-INFRASTR IMP 2ND RND TRP WI ONLY	$3,492,463

ID	SFY	Project Title/Location	Project Limit/Location	WisDOT Program and Funding Sources	Project Concept/Description	Estimated Total Cost
31	2023	TCMC INTERCITY PASSENGER RAIL GRANT	LA CROSSE - ST. PAUL	SAFETY - RAILROAD, ELIMINATION OF HAZARDS	EX-INFRASTR IMP 2ND RND TRP MN ONLY	$16,786,625
32	2023	TCMC INTERCITY PASSENGER RAIL GRANT	LA CROSSE - ST. PAUL	SAFETY - RAILROAD, ELIMINATION OF HAZARDS	EX-INFRASTR IMP 2ND RND TRP MN ONLY	$16,786,625
33	2023	TCMC INTERCITY PASSENGER RAIL GRANT	LA CROSSE - ST. PAUL	SAFETY - RAILROAD, ELIMINATION OF HAZARDS	EX- INFRASTURE IMP 2ND RND TRP WI	$1,632,294
34	2023	TCMC INTERCITY PASSENGER RAIL GRANT	LA CROSSE - ST. PAUL	SAFETY - RAILROAD, ELIMINATION OF HAZARDS	EX-INFRASTR IMP 2ND RND TRP MN ONLY	$746,483
35	2023	T OF HERMAN, CTH WS	WSOR X-ING 387035W	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNAL & GATES	$232,300
36	2023	V PALMYRA, S THIRD ST	WSOR X-ING 391574S	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$224,557
37	2023	V PALMYRA, CTH H / MAIN ST	WSOR X-ING 391577M	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$227,445
38	2023	V PALMYRA, BURR OAK ST	WSOR X-ING 391580V	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$192,878

ID	SFY	Project Title/Location	Project Limit/Location	WisDOT Program and Funding Sources	Project Concept/Description	Estimated Total Cost
39	2023	T LA PRAIRIE, TOWN HALL RD	UP X-ING 387972P	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$224,557
40	2023	T WESTFORD, CTH C	WSOR X-ING 386937X	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$224,557
41	2023	T LISBON, LAKE FIVE RD	UP X-ING 179043R	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$262,600
42	2023	T LISBON, CENTER OAK RD	UP X-ING 179044X	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$262,600
43	2023	T MERTON, PARK DRIVE	UP X-ING 179048A	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$262,600
44	2023	C MANITOWOC, CUSTER ST	WCL X-ING 181166C & 181167J	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$555,500
45	2023	C PLYMOUTH, CTH O (SOUTH ST)	WSOR X-ING 180332N	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$242,400
46	2023	V OF SOLON SPRINGS, JACK PINE AVE	WCL RR X-ING 186095A	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$333,300
47	2023	T HIXON, BRIDGE RD	WCL X-ING 697252C	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$222,200

ID	SFY	Project Title/Location	Project Limit/Location	WisDOT Program and Funding Sources	Project Concept/Description	Estimated Total Cost
48	2023	C OWEN, WILLOW RD	WCL X-ING 697246Y	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$262,600
49	2023	C EAU CLAIRE, MELBY STREET	UNION PACIFIC RR X-ING 185889E	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR SIGNALS/GATES	$303,000
50	2023	ZOO IC, UPRR CROSSING NO 177 262X	UPRR OVER USH 45	SE FREEWAY-ZOO INTERCHANGE	RR/CROSSING IMPROVEMENT	$500,000
51	2023	ZOO IC, UPRR FORCEWORK AGREEMENT	UPRR OVER IH 41/USH 45	SE FREEWAY-ZOO INTERCHANGE	RR/CROSSING IMPROVEMENT	$3,014,921
52	2023	BRADLEY - RHINELANDER	FV&LS RR XING SURF 693750X MP213.57	STATE 3R	RAILROAD SURFACE/PVRPLA	$227,250
53	2023	C MELLEN, MAIN STREET	WISCONSIN CENTRAL LTD RR 699392L	STATE 3R	RR/UPGRADE RAIL CROSSING	$252,500
54	2023	C MELLEN, MAIN STREET	WISCONSIN CENTRAL LTD RR 699392L	STATE 3R	RR/INSTALL FLASHING LIGHTS & GATES	$353,500
55	2023	C LACROSSE, SOUTH AVENUE	GREEN BAY STREET TO WARD AVENUE	STATE 3R	RR/SURFACE/RECST	$101,000
56	2023	C LACROSSE, SOUTH AVENUE	GREEN BAY STREET TO WARD AVENUE	STATE 3R	RR/SIGNAL UPGRADES/RECST	$202,000
57	2023	EAST TROY - RACINE	THOMAS DRIVE TO HONEY CREEK ROAD	STATE 3R	RR/XING SURFACE/WI CNTRL 689874J	$252,500
58	2023	EAST TROY - RACINE	THOMAS DRIVE TO HONEY CREEK ROAD	STATE 3R	RR/XING SIGNALS/WI CNTRL 689874J	$353,500
59	2023	EAST TROY - RACINE	THOMAS DRIVE TO HONEY CREEK ROAD	STATE 3R	RR/XING SURFACE/RR MUSEUM 310167S	$424,200

ID	SFY	Project Title/Location	Project Limit/Location	WisDOT Program and Funding Sources	Project Concept/Description	Estimated Total Cost
60	2023	EAST TROY - RACINE	THOMAS DRIVE TO HONEY CREEK ROAD	STATE 3R	RR/XING SURFACE/RR MUSEUM 310167S	$505,000
61	2023	OCONOMOWOC - MAYVILLE	WSOR RR XING 387041A	STATE 3R	RR OPS/ CROSSING REPAIR/ RESURFACE	$126,250
62	2023	BERGEN - EMERALD GROVE	WISC & SOUTHERN RR XING 387963R	STATE 3R	RR OPS/ CROSSING REPAIR/ RESURFACE	$100,800
63	2023	KEWASKUM-WALDO	WSOR XING SIGNALS 387113B	STATE 3R	RR XING SIGNALS	$325,000
64	2023	SPRING GREEN - MADISON	WISC & SOUTHERN RR XING 391751U	STATE 3R	RR OPS/REPLACE CROSSING SURF/MISC	$414,100
65	2023	SPRING GREEN - MADISON	WISC & SOUTHERN RR XING 391751U	STATE 3R	RR OPS/REPLACE CROSSING SIGNAL/MISC	$303,000
66	2023	C JANESVILLE, CENTER AVENUE	UNION PACIFIC RR XING 177418U	STATE 3R	RR OPS/CROSSING SURFACE	$454,500
67	2023	C JANESVILLE, CENTER AVENUE	UNION PACIFIC RR XING 177418U	STATE 3R	RR OPS/PREEMPTION WORK (SIGNALS)	$252,500
68	2023	IH 39 - ARLINGTON	BULLEN ROAD TO US 51	STATE 3R	RR OPS/CROSSING SURFACE	$107,105
69	2023	PLAINFIELD - WISCONSIN RAPIDS	STH 173 TO STH 54	STATE 3R	RR CROSSING SWITCH/TRACK 392709Y	$15,150
70	2023	STH 91 & CLAIRVILLE RD XING SURFACE	WSOR RR 387462L	STATE 3R	RR CROSSING XING SURFACE	$200,000
71	2023	BABCOCK - NEKOOSA	STH 80 NB TO CRANBERRY BRIDGE	STATE 3R	RAIL CROSSING SIGNALS 392695T	$227,250
72	2023	TOMAH - NECEDAH	UNION PACIFIC, CROSSING 184072L	STATE 3R	RR/CROSSING SIGNALS/RSRF10	$303,000
73	2023	CORNELL - LADYSMITH	WCL RR XING 691260Y	STATE 3R	R/R OPS/CROSSING SURFACE	$126,139

ID	SFY	Project Title/Location	Project Limit/Location	WisDOT Program and Funding Sources	Project Concept/Description	Estimated Total Cost
74	2023	STH 64 - ECL	WCL RR CROSSING 699481D	STP RURAL	RECONSTRUCTION/PRESERVATION	$312,500
75	2023	C WEST ALLIS W BELOIT ROAD	UNION PACIFIC RR, 17727P, MP 86.00	STP URBAN OVER 200,000	CONST/RR CROSSIN SIGNAL	$252,500
76	2023	C WEST ALLIS W BELOIT ROAD	UNION PACIFIC RR, 177237P, MP 86.00	STP URBAN OVER 200,000	CONST/RR CROSSING SURFACE	$404,000
77	2023	C WEST ALLIS W BELOIT ROAD	UNION PACIFIC RR, 177237P, MP 86.00	STP URBAN OVER 200,000	CONST/RR CROSSING SURFACE	$404,000
78	2023	C MILWAUKEE, W HAMPTON AVENUE	WISC & SOUTHERN RR 387178U,387180V	STP URBAN OVER 200,000	RR/CROSSING SIGNALS	$757,500
79	2023	C MILWAUKEE W HAMPTON AVENUE	N 60TH STREET TO N TEUTONIA AVENUE	STP URBAN OVER 200,000	RR/X-ING SURFACE/WSOR 387178U	$404,000
80	2023	C MILWAUKEE W HAMPTON AVENUE	N 60TH STREET TO N TEUTONIA AVENUE	STP URBAN OVER 200,000	RR/X-ING SURFACE/WSOR 387178U	$404,000
81	2023	CTH Q - STH 113 (CTH M)	ONCEKN ROAD TO STH 113	STP URBAN OVER 200,000	RR OPS/CROSSING SURFACE	$202,000
82	2023	C OF MIDDLETON, PLEASANT VIEW ROAD	TIMBER WOLF TRAIL TO USH 14	STP URBAN OVER 200,000	R/R OPS/ CROSSING SURFACE	$408,000
83	2023	C OF MIDDLETON, PLEASANT VIEW ROAD	TIMBER WOLF TRAIL TO USH 14	STP URBAN OVER 200,000	R/R OPS/ SWITCH REPLACEMENT	$306,000
84	2023	C OF MIDDLETON, PLEASANT VIEW ROAD	TIMBER WOLF TRAIL TO USH 14	STP URBAN OVER 200,000	R/R OPS/ CROSSING SIGNALS	$459,000
85	2024	STH 15-NEW LONDON	USH 45, WCL XING SURFACE 693839C	MAJORS	CONST/MISC RR 693839C SURFACE	$0
86	2024	STH 15-NEW LONDON	USH 45, WCL XING SIG/GATES 693839C	MAJORS	CONST/MISC RR SIG/GATES 693839C	$0

ID	SFY	Project Title/Location	Project Limit/Location	WisDOT Program and Funding Sources	Project Concept/Description	Estimated Total Cost
87	2024	C MILWAUKEE, BRADLEY ROAD CROSSING	WISC & SOUTHERN RR(WSOR)XING386975G	SAFETY - RAILROAD WARNING DEVICES	RR/REPLACE WARNING DEVICE EQUIPMENT	$26,987
88	2024	C MILWAUKEE, 107TH ST CROSSING	WIS & SOUTHRN RR(WSOR) XING386977V	SAFETY - RAILROAD WARNING DEVICES	RR/REPLACE WARNING DEVICE EQUIP	$26,987
89	2024	V ROCKLAND, CTH J	SOO LINE RR XING 390900P	SAFETY - RAILROAD WARNING DEVICES	RR/LIGHTS,GATES,BUNGLOWCIRC'T/MISC	$328,250
90	2024	V BANGOR, 10TH AVENUE	SOO LINE RR XING 390903K	SAFETY - RAILROAD WARNING DEVICES	RR/LIGHTS,GATES,BUNGLOW,CIRC'T/MISC	$303,000
91	2024	V CROSS PLAINS, CTH KP	WSOR RR XING 391768X	SAFETY - RAILROAD WARNING DEVICES	RR OPS/REPLACE DETECTION EQUIP/MISC	$26,987
92	2024	V MCFARLAND, HOLSCHER ROAD	WSOR RR XING 911336M	SAFETY - RAILROAD WARNING DEVICES	RR OPS/REPLACE DETECTION EQUIP/MISC	$26,987
93	2024	DEWEY - STH 35	BNSF RR XING 086402V	SAFETY - RAILROAD WARNING DEVICES	R/R OPS/SAFETY RAIL WARNING DEVICES	$252,500
94	2024	FOXBORO - DEWEY	BNSF RR XING 061443D	SAFETY - RAILROAD WARNING DEVICES	R/R OPS/SAFETY RAIL WARNING DEVICES	$252,500
95	2024	MUSKEGO YARDS CRISI GRANT	MUSKEGO YARD FREIGHT TRACKS	SAFETY - RAILROAD, ELIMINATION OF HAZARDS	EX-RR/SIGNAL CONSTRUCTION	$11,780,000

ID	SFY	Project Title/Location	Project Limit/Location	WisDOT Program and Funding Sources	Project Concept/Description	Estimated Total Cost
96	2024	T OF FULTON, CTH M	WSOR X-ING 391644E	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$262,600
97	2024	T WESTFORD, CTH CC	UP X-ING 179164N	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$333,300
98	2024	C STOUGHTON, SOUTH STREET	WSOR X-ING 391675D	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$252,500
99	2024	T HUBBARD, CTH TW	WSOR X-ING 387045C	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$252,500
100	2024	T DARIEN, CTH F	WSOR X-ING 388185H	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR SIGNALS & GATES	$262,600
101	2024	T DARIEN, CTH K	WSOR RR X-ING 388232N	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS&GATES	$262,600
102	2024	C MILWAUKEE, GRANVILLE RD	WSOR RR X-ING 386976N	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$262,600
103	2024	V EAGLE, PARTRIDGE ST	WSOR RR X-ING 391559P	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS&GATES	$252,500
104	2024	C MILWAUKEE, N 124TH ST/BOUNDARY RD	WSOR RR X-ING 386979J	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$303,000

ID	SFY	Project Title/Location	Project Limit/Location	WisDOT Program and Funding Sources	Project Concept/Description	Estimated Total Cost
105	2024	T OF BYRON, CHURCH ROAD	WCL X-ING 692332D	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$434,300
106	2024	T OF LINCOLN, CTH V	UP X-ING, FRA 183972Y	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$333,300
107	2024	V DOWNING, CTH Q	WCL RR X-ING 693005W	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$333,300
108	2024	V WILSON	UP X-ING, FRA 183881T	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$333,300
109	2024	T BRIDGE CREEK, CTH AF	UP X-ING, FRA 183974M	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$303,000
110	2024	WATERTOWN - WAUPUN	WISC & SOUTHERN RR XING 387053U	STATE 3R	RR OPS/ CROSSING REPAIR/ RESURFACE	$60,600
111	2024	WATERTOWN - WAUPUN	WISC & SOUTHERN RR XING 387632D	STATE 3R	RR OPS/ CROSSING REPAIR/ RESURFACE	$106,100
112	2024	WATERTOWN - WAUPUN	WISC & SOUTHERN RR XING 387632D	STATE 3R	RR OPS/ FLASHING LIGHT SIGNALS	$217,200
113	2024	PRENTICE - BRADLEY	CTH YY TO TRACY ROAD	STATE 3R	RAIL CROSSING SURFACE 691-736A	$50,500
114	2024	PRENTICE - BRADLEY	MCCORD ROAD TO CTH L	STATE 3R	RR OPS/XING SURFACE 855242H	$151,500
115	2024	IH 43-TWO RIVERS	XING SURFACE WCL RR 181417U	STATE 3R	RR CROSSING	$150,000
116	2024	MADISON - LODI	WSOR RR X SURFACE 178068H/917705C	STATE 3R	RR OPS/XING RESURFACE/PVRPLA	$152,225

ID	SFY	Project Title/Location	Project Limit/Location	WisDOT Program and Funding Sources	Project Concept/Description	Estimated Total Cost
117	2024	MADISON - LODI	WSOR RR X SIGNALS 178068H/917705C	STATE 3R	RR OPS/SIGNALS/MISC	$304,475
118	2024	C JANESVILLE, CENTER AVENUE	UNION PACIFIC RR XING 177423R	STATE 3R	RR/ CROSSING SIGNALS/ PVRPLA	$404,000
119	2024	DEFOREST - PORTAGE	TOMLINSON ROAD TO ONTARIO STREET	STATE 3R	R/R OPS - REHAB GRADE CROSSING/RSRF	$413,595
120	2024	DEFOREST - PORTAGE	TOMLINSON ROAD TO ONTARIO STREET	STATE 3R	R/R OPS - REHAB GRADE CROSSING/RSRF	$86,166
121	2024	DEFOREST - PORTAGE	TOMLINSON ROAD TO ONTARIO STREET	STATE 3R	R/R OPS - CROSSING SIGNALS/RSRF30	$141,400
122	2024	TREMPEALEAU - ALMA	BNSF R/R X-ING 079923U	STATE 3R	RR OPS - SIGNALS	$303,000
123	2024	THORP - INGRAM	WCL RR XING 697265D	STATE 3R	RR OPS/CROSSING SURFACE REPLACEMENT	$126,250
124	2024	GILMAN - MEDFORD	WISCONSIN CENTRAL LTD 699488B	STATE 3R	RR OPS/SIGNAL UPGRADE & INSTALL	$292,900
125	2024	GILMAN - MEDFORD	WISCONSIN CENTRAL LTD 699488B	STATE 3R	RR OPS/CROSSING SURFACE REPLACEMENT	$90,900
126	2024	ELMWOOD - STH 64	WCL RR XING 693015C MP 396.24	STATE 3R	RR OPS/INSTALL SIGNALS AND GATES	$252,500
127	2024	ELMWOOD - STH 64	WCL RR XING 693015C MP 396.24	STATE 3R	RR OPS/INSTALL NEW CROSSING SURFACE	$75,750
128	2025	C SUPERIOR, E 2ND STREET	UNION PACIFIC RR XING 186159J	BACKBONE	RR OPS/SIGNAL INSTALLATION	$353,500
129	2025	STOUGHTON - MADISON	SPRING RD TO FIFTH ST	MAJORS	RR/391684C SURFACE/RECST	$328,250
130	2025	V BANGOR, 18TH AVENUE	SOO LINE RR XING 390906F	SAFETY - RAILROAD WARNING DEVICES	RR/LIGHTS,GATES,BUNGLOW,CIRC'T/MISC	$303,000

ID	SFY	Project Title/Location	Project Limit/Location	WisDOT Program and Funding Sources	Project Concept/Description	Estimated Total Cost
131	2025	T CLINTON, CTH J	UP X-ING 177962E	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$303,000
132	2025	T HUBBARD, N CEDAR RD	WSOR X-ING 387043N	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$272,700
133	2025	C MADISON, CTH AB/BUCKEYE RD	WSOR X-ING 177334Y	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$328,250
134	2025	T MERTON, KEESUS RD	UP X-ING 179046L	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$353,500
135	2025	V EAGLE, SHERMAN ST	WSOR RR X-ING 391558H	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS&GATES	$282,800
136	2025	V FOX POINT, BRADLEY RD	UP X-ING 180106P	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$353,500
137	2025	T MERTON, KILBOURNE RD	UP X-ING 179056S	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$353,500
139	2025	T OF METOMEN, CTH KK	WSOR RR X-ING 387582C	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$313,100
140	2025	T OF RIPON, DOUGLAS RD	WSOR RR X-ING 387580N	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$272,700

ID	SFY	Project Title/Location	Project Limit/Location	WisDOT Program and Funding Sources	Project Concept/Description	Estimated Total Cost
141	2025	T BENNETT, TOWN LINE RD	WCL RR X-ING 186106K	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$333,300
142	2025	V ROBERTS, DIVISION STREET	UP X-ING, FRA 183845X	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$353,500
143	2025	V ROBERTS, VINE STREET	UP X-ING, FRA 183844R	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$353,500
144	2025	V OLIVER, CTH W (CHICAGO AVE)	WCL RR X-ING 251873N	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$353,500
145	2025	V FAIRCHILD, CTH H (CENTER ST)	UP X-ING, FRA 183992K	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$383,800
146	2025	V FAIRCHILD, CTH YY	UP X-ING, FRA 183993S	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$353,500
147	2025	C INDEPENDENCE, CTH Q	WCL RR X-ING 281808P	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$414,100
148	2025	V TAYLOR, CTH P (BRIDGE ST)	WCL RR X-ING 281759V	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$505,000
149	2025	V ALMA CENTER, CTH F (CHURCH ST)	WCL RR X-ING 281722F	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$353,500
150	2025	WISCONSIN RAPIDS - PLOVER	26TH STREET NORTH TO CTH B	STATE 3R	BIRON WCL XING SIGNALS 281612V	$414,100

ID	SFY	Project Title/Location	Project Limit/Location	WisDOT Program and Funding Sources	Project Concept/Description	Estimated Total Cost
151	2025	WISCONSIN RAPIDS - PLOVER	26TH STREET NORTH TO CTH B	STATE 3R	PLOVER WCL XING SURFACE 693765M	$171,700
152	2025	I39 - COLUMBUS	STH 19 TO N MARSHALL V LIMIT	STATE 3R	RR/SIGNALS/PVRPLA	$252,500
153	2025	GENOA - LACROSSE	LACROSSE CO LINE TO SUNNYSIDE DR	STATE 3R	RR OPS/5163-07-72/RECST	$61,610
154	2025	GENOA - LACROSSE	LACROSSE CO LINE TO SUNNYSIDE DR	STATE 3R	RR OPS/5163-07-72/RECST	$50,500
155	2025	C BELOIT, STATE STREET	CANADIAN PACIFIC RR XING 388198J	STATE 3R	RR/CROSSING REPAIR/RESURFACE/MISC	$242,500
156	2025	C BELOIT, STATE STREET	CANADIAN PACIFIC RR XING 388198J	STATE 3R	RR/SIGNALS/ MISC	$378,750
157	2025	C BELOIT, SHIRLAND AVE	CANADIAN PACIFIC RR XING 388197C	STATE 3R	RR/SIGNALS/ MISC	$378,750
158	2025	BELOIT - EVANSVILLE	WSOR RR XING 392441D & 392442K	STATE 3R	RR OPS/ CROSSING REPAIR/ RESURFACE	$272,700
159	2025	BELOIT - EVANSVILLE	WSOR RR XING 392441D & 392442K	STATE 3R	RR OPS/ SIGNALS	$404,000
160	2025	BRANDON-RIPON	WSOR XING SIGNALS 387487G	STATE 3R	RR CROSSING SIGNALS	$325,000
161	2025	NECEDAH - COLOMA	SHERIDAN STREET TO EAST COUNTY LINE	STATE 3R	RR/UPGRADE CROSSING 392668W/RSRF	$108,325
162	2025	NECEDAH - COLOMA	CANADIAN NAT'L ASSOC. XING 392668W	STATE 3R	RR/SIGNAL REPLACE/RSRF	$404,000
163	2025	STH 15 - CTH JJ	FV RR XING 181837Y	STATE 3R	FV RR XING	$130,000
164	2025	MERRILL - TOMAHAWK	WILDERNESS DRIVE TO CTH S	STATE 3R	FVLS XING SIGNALS 392 928M MP128.3	$303,000

ID	SFY	Project Title/Location	Project Limit/Location	WisDOT Program and Funding Sources	Project Concept/Description	Estimated Total Cost
165	2025	MERRILL - TOMAHAWK	WILDERNESS DRIVE TO CTH S	STATE 3R	FVLS XING SURFACE 392 928M MP128.3	$177,760
166	2026	V HARRISON, BRIGHTON BEACH RD/FIRE	WCL X-ING 386659J	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$378,750
167	2026	BLACK RIVER FALLS, LEESON/BAUER RD	UP RR X-ING 184042U	SAFETY OCR - RAILROAD WARNING DEVICES	RR OPS/SAFETY/OCR/SIGNALS & GATES	$378,750
168	2026	LONE ROCK - STH 154	WISCONSIN RIVER TO USH 14	STATE 3R	RR/WSOR CROSSING SURFACE/RSRF	$126,250
169	2026	LONE ROCK - STH 154	WISCONSIN RIVER TO USH 14	STATE 3R	RR/WSOR CROSSING SIGNALS/RSRF	$303,000
170	2026	RUDOLPH - KNOWLTON	HOSTA RD CN RR XING SIGNALS MP71.82	STATE 3R	RAIL CROSSING SIGNALS/392768B	$303,000
171	2026	MENOMONIE - EAU CLAIRE	UNION PACIFIC RR XING 411776X	STATE 3R	RR OPS/CROSSING SURFACE UPGRADES	$75,750
172	2026	C ARCADIA, MAIN STREET	WCL RR XING 281828B	STATE 3R	RR OPS/SIGNALS	$387,684
173	2026	C ARCADIA, MAIN STREET	WCL RR XING 281828B	STATE 3R	RR OPS/SURFACE	$185,192
174	2026	ELK MOUND - BLOOMER	WCL RR XING 692959P	STATE 3R	R/R OPS - SIGNAL REPLACEMENT	$303,000
175	2026	ELK MOUND - BLOOMER	WCL RR XING 692959P	STATE 3R	R/R OPS - R/R XING SURFACE	$176,750
176	2026	OLIVER - SUPERIOR	BNSF RR XING 061457L	STATE 3R	RR OPS/CROSSING SURFACE REPLACEMENT	$252,500
177	2026	CTH A, RR SIGNAL UPGRADES	CANADIAN NATIONAL XING 699475A	STP RURAL	R/R OPS/SIGNAL UPGRADES	$250,000

ID	SFY	Project Title/Location	Project Limit/Location	WisDOT Program and Funding Sources	Project Concept/Description	Estimated Total Cost
178	2027	WALDO-KIEL	WSOR XING SURFACE 180329F	STATE 3R	RR IMPROVMENT	$300,000
179	2027	PLANK ROAD, CITY OF MENASHA	CNRR XING SURFACE 386656N MP 2.59	STATE 3R	CN RR XING	$191,900
180	2027	PLANK ROAD, CITY OF MENASHA	CNRR SIGNALS/GATES 386656N MP 2.59	STATE 3R	CN RR SIGNALS/GATES	$303,000
181	2027	MADISON - LODI	WISC & SOUTHERN RR XING 178076A	STATE 3R	RR/CROSSING REPAIR/RESURFACE/MISC	$161,300
182	2027	MADISON - LODI	WISC & SOUTHERN RR XING 178076A	STATE 3R	RR/FLASHING LIGHT SIGNALS/PVRPLA	$282,800
183	2027	MADISON - LODI	CTH P TO LODI CITY LIMITS	STATE 3R	RR/CROSSING SURFACE/RSRF	$147,712
184	2027	THORP - INGRAM	WCL RR XING 691313V	STATE 3R	RR OPS/CROSSING SIGNAL REPLACEMENT	$252,500
185	2027	THORP - INGRAM	WCL RR XING 691313V	STATE 3R	RR OPS/CROSSING SURFACE REPLACEMENT	$101,000
186	2027	MELLEN - USH 2	WCL RR X-ING 699395G	STATE 3R	RR OPS/CROSSING SURFACE	$75,750

Current Intercity Passenger Rail Projects

This section provides details and capital costs associated with two passenger rail projects occurring in the near-term planning horizon, improvements to the Hiawatha Service and the Twin Cities-Milwaukee-Chicago (TCMC) Intercity Passenger Rail Project. **Table 14-3:** illustrates current intercity passenger rail projects. For more information about these projects, see **Chapter 5 Intercity Passenger Rail – Corridor and Long-Distance**.

Table 14-3: Current Intercity Passenger Rail Projects

ID	Host Railroad	SFY	Project Location	Project Description	Estimated Total Cost	Funding Status
P1	Canadian Pacific	2022-2024	Milwaukee	Muskego Yard signalization and track/bridge improvements and freight train bypass of Milwaukee Intermodal Station	$54,600,000	CRISI – Grant awarded
P2	Canadian Pacific	2022-2024	Milwaukee	Milwaukee Airport Rail Station second platform with overhead access	$10,100,000	CRISI – Grant awarded
P3	Canadian Pacific	2022-2024	Milwaukee	Centralized train control (CTC) signalization between Milwaukee Intermodal Station and Cutoff	$5,400,000	CRISI - Selected for award
P4	Canadian Pacific	2022-2024	Systemwide	Acquisition of three cab-coach cars and six coach cars	$38,900,000	Federal State Partnership for State of Good Repair - Grant awarded
P5	Canadian Pacific	2021-2024	Existing Amtrak Empire Builder corridor	Add one daily round-trip on the existing Amtrak Empire Builder corridor (CP Rail) between the Twin Cities, La Crosse, Milwaukee, and Chicago. Costs include six capital projects in Wisconsin and Minnesota.	$53,000,000	$31.8 million – CRISI grant $5 million – Amtrak $6.2 million – Wisconsin $10 million – Minnesota

Existing Hiawatha Service Improvements

This project adds three additional daily roundtrips between Milwaukee and Chicago on the Hiawatha, bringing the total daily roundtrips from seven to 10. One additional train is needed to provide the additional service.

The Hiawatha expansion project includes a program of infrastructure projects needed to accommodate the additional trains while considering capacity for freight growth and continued service for all users. Three infrastructure projects have been identified in Wisconsin, and all have grant selections or awards to move them to final design and construction. However, additional projects are required and are still being identified.

Federal funding for Muskego Yard, the second MARS station platform, and CTC signaling through the MIS were provided through competitive discretionary grants from two federal grant programs: the Federal-State Partnership for State of Good Repair Program, and the Consolidated Rail Infrastructure and Safety Improvement (CRISI) program.

Twin Cities-Milwaukee-Chicago (TCMC) Intercity Passenger Rail Project[3]

The TCMC project adds one new state-supported intercity passenger rail round-trip daily between the Twin Cities, Milwaukee, and Chicago on the Amtrak Empire Builder corridor. The service will operate at conventional speeds of 79 miles per hour and stop at all existing stations on the Empire Builder route, plus the Milwaukee Airport Rail Station (MARS).

The planning phase of TCMC project development evaluated alternatives and anticipated costs for track and other infrastructure improvements required for a second round-trip. Environmental clearance and a service development plan have been completed. Final design is occurring in 2022 and construction will occur in 2023 and 2024. The TCMC project includes six railroad infrastructure improvement projects. The funding status is illustrated in **Table 14-4:**. Revenues and operating costs were forecasted and are illustrated in **Table 14-5:**, with federal grant funds received to offset cost of operations for the first three years of service. All the federal funds were awarded from discretionary competitive grant programs.

[3] *See* Chapter 5 Intercity Passenger Rail – Corridor and Long-distance *for more project details*

Table 14-4: Capital Projects to Implement TCMC Service FY 2021 – 2024

Project Description	Estimated Cost	Funding Status
Add one daily round-trip on the existing Amtrak Empire Builder corridor (CP Rail) between the Twin Cities, La Crosse, Milwaukee, and Chicago. Costs include six capital projects in Wisconsin and Minnesota.	$53 million (total project)	$31.8 million – CRISI grant $5 million – Amtrak $6.2 million – Wisconsin $10 million – Minnesota

Table 14-5: TCMC Revenue and Cost Forecast (in $ millions)

	2024	2025	2026	2027	2028	2029
Amtrak Operating Cost	12.29	12.30	12.32	12.33	12.35	12.36
Annual Revenue (inc. fares)	4.86	4.91	4.95	5.0	5.04	5.09
Federal Restoration and Enhancement Grant	5.62	4.20	2.79	0	0	0
Shared State Partner Support	1.81	3.20	4.58	7.34	7.30	7.27

Other Intercity Passenger Rail and Commuter Rail Studies and Projects Not Programmed

There are numerous local and regional efforts to extend passenger and commuter rail service throughout Wisconsin. Although many of these studies and projects have not advanced into programmed activities, they are included here as illustrative potential future projects within the planning horizon. This section summarizes the status of projects and studies discussed in more detail in **Chapter 4 Commuter Rail** and **Chapter 5 Intercity Passenger Rail – Corridor and Long-distance**.

Southern Wisconsin Passenger and Commuter Rail Studies[4]

Completion Date: Not programmed

[4] *SLATS Passenger Rail Study. 2021. Prepared by AECOM for the Stateline Area Transportation Study.* *http://gouda.beloitwi.gov/weblink/0/edoc/74275/SLATS%20Passenger%20Rail%20Study_FINAL%20REPORT_Feb%202021.pdf*

Cost: Not programmed
Primary sponsor: N/A

Several studies over the last fifteen years have been done to identify if commuter or regional rail connections with the Janesville and Madison urban areas or the Chicago based Metra service might be feasible. No alignments from these previous studies advanced for further study or implementation.

Reference to the study and its outcome are cited in both the Janesville MPO and SLATS long range transportation plans and **Chapter 4 Commuter Rail** of WRP 2050.

Eau Claire-Twin Cities Rail

Completion Date: Not programmed
Cost: Not programmed
Primary sponsor: N/A

Consideration of passenger train service in the corridor between Eau Claire and the Twin Cities is included in several long-range transportation plans. While no projects are programmed, there is active local government interest in this corridor.

Northern Lights Express

Completion Date: Not programmed
Cost: Not programmed
Primary sponsor: Minnesota Department of Transportation

The Northern Lights Express (NLX) is a proposed high speed passenger rail project that would provide intercity passenger rail service between Minneapolis and Duluth/Superior. If constructed, NLX will operate on approximately 152 miles of existing BNSF rail corridor. FRA has issued a Finding of No Significant Impact on the Tier 2 Environmental Assessment. MnDOT has completed preliminary engineering and is awaiting funding for construction and operation.[5] The next steps after construction and operational funds are secured are final design and construction, with service beginning three years after construction begins.

New Amtrak Hiawatha Intercity Passenger Rail Service to Green Bay-Fox Cities

Completion Date: Not programmed

[5] *https://www.dot.state.mn.us/nlx/*

Cost: Not programmed
Primary sponsor: N/A

The Green Bay area does not have intercity passenger rail service. Its closest connection to service is via Amtrak Thruway bus service to Milwaukee. Extending rail service from Milwaukee to these same or similar city pairings has been studied in several different passenger rail service initiatives.

New Amtrak Hiawatha Intercity Passenger Rail Service to Madison

Completion Date: Not programmed
Cost: Not programmed
Primary sponsor: N/A

Studies or projects to implement passenger rail service connecting Madison to Milwaukee, Chicago, and/or Minneapolis/St. Paul have been included in state and regional plans for over three decades.

Dubuque Metropolitan Area Transportation Study (DMATS)

Completion Date: Not programmed
Cost: Not programmed
Primary sponsor: N/A

DMATS has worked to establish an Amtrak passenger rail route between Dubuque and Chicago. A report published in 2007 identified one feasible route between Dubuque and Rockford, and four feasible routes between Rockford and Chicago. The report was updated in 2010, reducing the routes under consideration to two. In 2014, following unsuccessful negotiations with CN, Illinois announced a $233 million plan to extend Amtrak service to Rockford along lines owned by Metra and the Union Pacific Railroad. Improvements included upgrading tracks, capacity improvements, bridge improvements, and new stations. The plan included a future service extension to Dubuque with stops in Freeport and Galena. However, in 2015 Illinois placed the project on hold due to lack of funding. It has not advanced for implementation.

Southeastern Wisconsin Commuter Rail

Completion Date: Not programmed
Cost: Not programmed
Primary sponsor: N/A

SEWRPC's Vision 2050 Long-Range Transportation Plan includes major expansion of all types of transit service. If implemented, commuter rail service would increase from the current level of 10

hours a day (Metra only service) to 190 hours daily, mostly from four new commuter rail lines. Two of the commuter rail lines would start from downtown Milwaukee, with two spokes from one of those main lines. The fiscally constrained portion of Vision 2050 acknowledges that without additional revenue sources implementation of commuter rail recommendations cannot be achieved. State enabling legislation may be necessary to create a special purpose transit authority able to raise revenues. Therefore, commuter rail is not in the fiscally constrained portion of Vision 2050. Expanded commuter rail service remains in Vision 2050 to implement should fiscal conditions improve.

Chicago Area Commuter Rail Improvements - Improvements to Metra's UP North Line

Completion Date: Not programmed
Cost: Not programmed
Primary sponsor: Metra

The Metra UP North line ends at the Kenosha station. Planned improvements will improve the operating capacity and reliability of the line between Ogilvie Transportation Center and Kenosha through installation of additional crossovers and track improvements. A new outlying coach yard will allow for more efficient servicing of equipment and accommodate expansion of service.

Freight Rail Related Projects and Studies

North Central Wisconsin Intermodal Freight Facility Study

Start Date: October 2021
Estimated Completion Date: December 2022
Cost: $225,000
Primary sponsor: North Central Wisconsin Regional Planning Commission

This study began in fall 2021 and will collect and study freight data in north central and western Wisconsin, and the Twin Cities metropolitan region. This study is supported by funding from WisDOT in partnership with MnDOT, Union Pacific Railroad, and several shippers.

Northeast Wisconsin Intermodal Freight Facility Study

Start Date: September 2020
Completion Date: April 2022
Cost: $250,000
Primary sponsor: East Central Wisconsin Regional Planning Commission

This study began in late 2020 and covers northeast Wisconsin and the western Upper Peninsula of Michigan. This study is supported by funding from WisDOT and FHWA in partnership with New North, Bay-Lake RPC, Port of Green Bay, Canadian National Railway, and Watco.

Southeastern Wisconsin Truck-rail Intermodal Facility Feasibility Study

Completion Date: Not programmed
Cost: Not programmed
Primary sponsor: Not programmed

This study is included in the SEWRPC Vision 2050 to study the need and feasibility of an intermodal facility in southeastern Wisconsin. The closest intermodal facility to the region is in the Chicago metropolitan area. No study is programmed at this time.

Northeast Wisconsin Intermodal Freight Facility Study

Start Date: September 2020
Completion Date: April 2022
Cost: $250,000
Primary sponsor: East Central Wisconsin Regional Planning Commission

This study began in late 2020 and covers northeast Wisconsin and the western Upper Peninsula of Michigan. This study is supported by funding from WisDOT and FHWA in partnership with New North, Bay-Lake RPC, Port of Green Bay, Canadian National Railway, and Watco.

Southeastern Wisconsin Truck-rail Intermodal Facility Feasibility Study

Completion Date: Not programmed
Cost: Not programmed
Primary sponsor: Not programmed

This study is included in the SEWRPC Vision 2050 to study the need and feasibility of an intermodal facility in southeastern Wisconsin. The closest intermodal facility to the region is in the Chicago metropolitan area. No study is programmed at this time.

Chapter 15 Public Involvement

The WRP 2050 public involvement process generally followed the same plan development phases as WisDOT's other multimodal long-range transportation plans. Plan phases and major public involvement activities discussed in more detail in this chapter include:

- Plan Kick-off: Included public comment periods and adoption of NOI and PIP.
- Pre-draft Plan Phase: Focus on stakeholder information sharing and consultation with Native American Tribes.
- Draft Plan Phase: Designed to be the best opportunity for stakeholders and the general public to comment directly on the draft rail plan and SEE.
- Final Draft Plan Phase: The final chance for public review and comment before the WRP 2050 and SEE are adopted.
- Plan Adoption: WisDOT will adopt the final plan and SEE and post the final document on the plan website.

Plan Kickoff: Notice of Intent and Public Involvement Plan[1]

The Notice of Intent (NOI) was used to solicit feedback from the public about what generally will be included in the WRP 2050. It is typically the first public step in the long-range transportation planning process.

The NOI for the WRP 2050 is a statement of WisDOT's intent to develop its long-range rail transportation plan. It provided a short overview of the main rail related topics anticipated to be addressed in the plan: freight rail, rail crossings, commuter rail, intercity passenger rail, and an environmental review called the System Plan Environmental Evaluation (SEE) required by Wisconsin Administrative Code Trans 400. Public feedback was requested during a 30-day comment period for items to be included or addressed in the plan. No comments were received.

Obtaining comment on the draft Public Involvement Plan (PIP) was one of the first steps in updating the WRP 2050. The PIP provides the big picture of what strategies will be used to involve the public during the WRP 2050 development process. While the WRP 2050 planning process has taken longer than initially expected the sequence of events in the PIP have been

[1] *The adopted PIP and NOI are available on the WRP 2050 public involvement website Wisconsin Department of Transportation Wisconsin Rail Plan 2050 - Public involvement (wisconsindot.gov)*

followed. Full details of the adopted PIP and NOI are available on public involvement section of the WRP 2050 – http://www.wisconsinrailplan.gov.

Pre-draft Plan Phase Highlights

The pre-draft plan phase of the WRP 2050 public involvement involved the planning team scoping what issues to include or discuss in the plan when the scope of the plan is still being determined. This early outreach included the first meetings with stakeholders.

Tribal Consultation

WisDOT is committed to consulting with Native American Tribes as national governments. One avenue to do so is through an existing task force set up between WisDOT and representatives from Tribal governments.

The mission of the Inter-Tribal Task Force (ITTF) is to articulate and facilitate a clear direction in joint transportation systems between each of Wisconsin's 11 federally recognized Indian Tribes and the Wisconsin Department of Transportation.[2] The ITTF meets quarterly to discuss transportation related issues and opportunities.

The WRP 2050 team participated in WisDOT's ITTF meeting in January 2021. The WRP 2050 team presented the group with information on the plan development process, asked for input on what to cover in the plan, and asked members how they would like to be involved in the planning process. There was discussion about access to intercity passenger rail service and where freight rail tracks were located relative to tribal lands. Tribal representatives were offered the opportunity to participate in the Environmental Resource Agency Coordination meeting for the WRP 2050.

Environmental Resource Agency Coordination

WisDOT sought input from state, federal and Tribal environmental resource agencies in preparation for the development of the WRP 2050. WisDOT hosted an environmental resource agency (ERA) meeting in February 2021 as part of the qualitative environmental analysis of the plan. The goal of the meeting was to provide context for the trends and issues under which the WRP 2050 will be implemented. The ideas discussed during the meeting were used to draft a System-Plan Environmental Evaluation (SEE) [3] and to develop the plan's policies and actions.

---

[2] *Welcome to WisDOT Inter-Tribal Task Force : WisDOT Inter-Tribal Task Force (wisdottribaltaskforce.org)*

[3] *The SEE is the System-level Environmental Evaluation for state long-range transportation plans. The WRP 2050 SEE is in* ***Chapter 11 System-plan Environmental Evaluation***

The meeting satisfied various federal and state requirements for involving environment resource agencies early in the plan development process. Participation in the meeting included 31 representatives from 13 different Federal agencies, State agencies, and Tribes. Invitees were provided with a list of topics and questions to answer either in person at the meeting or by a submittal outside of the meeting event.

Below are highlights and major themes discussed during the small-group breakout sessions, organized by broader environmental topics SEE.

Air Quality

- Locomotive engines can have serious localized air quality impacts. Air quality and noise impacts from rail tend to disproportionately impact those in urban areas. However, rail is generally a more energy efficient mode for moving certain kinds of freight.
- Federal air quality standards could become more stringent during the life of the plan.
- Increased participation in passenger and commuter rail would have widespread environmental benefits, especially for air quality and emissions reductions, but also negative health and safety impacts for those living nearby.

Energy Efficiency

- The Wisconsin Department of Administration has a goal of 100% carbon-free electricity by 2050 and significant decarbonization of all other sectors. Passenger and commuter rail can play in important role to play in meeting this goal.

Climate Change

- Increased intensity of storms is causing an increased risk of flooding and erosion in certain areas of the state, which requires consideration of rail infrastructure resiliency such as soil stabilization practices and right-sizing of water crossings.
- Right-sizing culverts and bridges to prevent flow blockage might require re-examining the design storm used in project development to account for the greater likelihood of intense storms.

- Climate change has been impacting flora used in traditional Tribal arts, cuisine, and medicine. Categorical exclusions on previously disturbed corridors should not be considered automatic because of the changes. At least one Tribe is asking proposers of a project to prove a categorical exclusion in previous disturbed corridors is appropriate, otherwise Section 106 should apply.

Environmental Processes

- A holistic approach and early coordination with environmental agencies and local government is critical for minimizing impacts from rail. Getting in front of environmental impacts should be the first step, with mitigation coming after.

Wildlife / Threatened and Endangered Species

- Rail right-of-way provides an opportunity to preserve and enhance high quality habitat, especially for pollinators.

Aquatic Resources

- WDNR has started a stream mitigation program and has an increased focus on measuring stream quality, which will impact rail crossings over streams.
- There is more heightened interest in hydraulic connectivity and reconnecting floodplains to mitigate flooding. US Army Corps of Engineers is developing stream quality tools in Minnesota and Wisconsin to help monitor this.

Wetlands

- Rail lines tend to be in low-lying areas, so they naturally are adjacent to high quality wetlands and waterways.
- WDNR has wetland mitigation programs for projects that hit a threshold for impacts. WisDOT will administer wetland mitigation for WisDOT projects, and private rail projects are required to find mitigation when necessary.
- The adaptive capacity of wetlands can help provide infrastructure resiliency.

Communities and Cultural Resources

- Find opportunities for new pedestrian-only crossings and consider access to jobs and community resources for project prioritization.
- Rail abandonment and Rails-to-Trails conversions can have the negative effect of increasing access to sacred or culturally significant Tribal sites by the general public. Memorandums of Understandings with railroad owners and operators are often used to maintain access for Tribal members to isolated tribal parcels.
- Private rail abandonment via disinvestment in lines that are important are too expensive to maintain can negatively impact communities that rely on rails
- WDNR Remediation and Redevelopment program has a public database with known contaminated and closed sites, which could be used to identify hazmat sites during project construction.
- Even with increased passenger rail service, there is the issue of the last mile that WRP 2050 should consider.
- Utilize EPA mapping tools for contamination and socioeconomic issues like EnviroAtlas and EJScreen.

Historic Preservation

- Concern over historical and archaeological resources is growing.
- The State Historic Preservation Office has a 10-year plan that may include historic railroad bridges, depots, and crossings in historic areas.
- Historic buildings are important to local communities and adaptive reuse is important. The rail system itself is historic, and some rail depots have been re-used for Rails-to-Trails initiatives.
- It is important to acknowledge the location of burial sites, the location of previously disturbed sites, and that all projects proceed in a respectful manner to these resources.
- Archaeological sites tend to be close to water resources and rivers, but there are concentrations especially near Milwaukee and La Crosse.

Rail Crossing Safety

- ATVs and snowmobiles, especially on local and county roads, pose an increasing risk. Unlicensed drivers often operate these machines. It is important for WRP 2050 to consider these.
- There is concern over CAV and rail crossings, as railroads often do not share train detection information. WisDOT might consider how CAV will interact with rail crossings and account for unplanned train schedule changes.

Economic Growth and Development

- WisDOT should coordinate with WEDC regarding how green economy programs fit in with WisDOT environmental goals related to rail.
- The idling of paper mills, such as Verso in Stevens Point, heavily reduced the movement of timber in Wisconsin. Paper mills and other timber businesses are concerned about maintaining access to timber movements by rail.
- The indirect and cumulative impacts of passenger and commuter rail will be important for economic development
- New passenger stations would promote EPA efforts to reduce emissions and promote jobs
- Shifting heavy truck traffic to rail by, especially for grain and timber, can help to preserve local roads in rural areas that are stressed and damaged by heavy truck movement.

Congestion

- New passenger rail facilities would help urban communities reduce congestion.

Stakeholders that were invited to the ERA Coordination meeting are identified below. An asterisk indicates a stakeholder who attended the meeting or submitted comments separately:

- Forest County Potawatomi Community*
- Menominee Indian Tribe of Wisconsin*
- Bad River Band of Lake Superior Chippewa
- Ho-Chunk Nation
- Lac Courte Oreilles Band of Lake Superior Chippewa
- Lac du Flambeau Band of Lake Superior Chippewa
- Oneida Nation

- Red Cliff Band of Lake Superior Chippewa
- St. Croix Chippewa
- Sokaogon Chippewa (Mole Lake)
- Stockbridge-Munsee
- Pipeline and Hazardous Materials Safety Administration
- United States Environmental Protection Agency, Region 5*
- FHWA Wisconsin Division*
- Federal Transit Administration, Region 5*
- Federal Railroad Administration
- Federal Motor Carrier Safety Administration
- United States Bureau of the Interior-Bureau of Land Management*
- National Park Service
- United States Army Corps of Engineers
- United States Coast Guard
- Wisconsin State Historical Society*
- Wisconsin Department of Natural Resources*
- Office of the Commission of Railroads*
- Wisconsin Economic Development Corporation*
- Wisconsin Department of Agriculture, Trade and Consumer Protection*
- Wisconsin Department of Health Services, Bureau of Environmental and Occupational Health*
- Wisconsin Department of Transportation, Bureau of Technical Services*
- Wisconsin Department of Military Affairs, Division of Hazard Mitigation and Emergency Management
- Public Service Commission

Environmental Justice and Equity Outreach

Wisconsin Rail Plan 2050 Equity-Focused Webinar[4]

WisDOT's rail plan team held a WRP 2050 equity-focused webinar in February 2021. The audience heard members of WisDOT's rail passenger, freight, and crossings staff discuss ideas identified for discussion in the WRP 2050. There was time for 30 minutes of comments and questions from the audience. WisDOT used insights gained from the interaction to inform the development of policies and programs in the Plan. Passenger rail and crossing safety were of particular concern for attendees.

Southeast Wisconsin Regional Planning Commission Environmental Task Force Meeting

The Southeast Wisconsin Regional Planning Commission (SEWRPC) is the Metropolitan Planning Organization for seven counties in the southeast part of the state: Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha. The primary role of the Environmental Justice Task Force is to enhance the consideration and integration of environmental justice throughout the regional planning process.

The WRP 2050 team met with the Environmental Justice Task Force at their December 2020 meeting. Members were presented with information about the anticipated issues the plan would address, anticipated plan equity analysis, and the plan timeline. Highlights of the discussion included: crossing safety in urban settings; passenger rail (intercity and commuter rail), economic development by re-establishing service on inactive track or returning state owned track to private hands; use of the North 30th Street rail corridor; and WisDOT's pilot program to identify land uses near tracks that might indicate a need for a crossing for bicyclists and pedestrians.

Business and Industry Outreach

WisDOT Rail Conference[5]

WisDOT, in partnership with the Office of the Commissioner of Railroads, sponsors an annual conference. Conference presentations typically cover freight rail, passenger rail, and safety. The WRP 2050 team presented to the November 2020 conference. Attendees learned about what

[4] Wisconsin Department of Transportation Wisconsin Rail Plan 2050 (wisconsindot.gov); *the recording is available on YouTube. The sign language interpreters who were on screen during the live webinar are also shown on screen in the recording.*

[5] Wisconsin Freight Railroad Conference 2020 Presentation (wisconsindot.gov)

topics were expected to be covered in the plan, the timeline, and were asked for other suggested inclusions.

Freight Advisory Committee[6]

The Freight Advisory Committee (FAC) was formed to help inform WisDOT on issues that impact freight mobility and to provide a voice for the freight sector on the development of freight-related policies, processes, and projects. FAC members include representatives from sectors including industry, freight rail, agriculture, logistics, warehousing, economic development, and transportation.

The WRP 2050 team presented at the January 2021 FAC meeting. Members were informed of the plan's goals, freight rail related issues to be examined, and the planning process. An Industry focused survey tool was introduced. Topics addressed in the survey tool included:

- CAV technology or implementation milestones that matter to your business
- CREATE projects important to Wisconsin
- Improvements to truck and rail equipment/power equipment
- Rail crossing safety action plan inclusions
- Types of infrastructure improvements that WisDOT could do to improve rail service and operations
- Priority corridors for improving vertical clearance to allow for double stack container traffic
- Rail bridge operations and maintenance
- Rail bridge capacity improvements

Respondents suggested the WRP 2050 consider:

- Impacts of the sudden closing of the two Verso paper mills and the significant loss of demand for pulp wood
- Using the plan to have a conversation about what it means for freight movement in the state. For example, how WisDOT programs and policies mesh with what is currently happening in the state and what trends to anticipate in the future.

[6] *Wisconsin Department of Transportation Freight Advisory Committee (wisconsindot.gov)*

Metropolitan Planning Organization and Regional Planning Organization Outreach

Metropolitan Planning Organizations (MPOs) and Regional Planning Organizations (RPCs) are government organizations of mostly elected local officials that meet regularly to provide a forum for local decision-making surrounding issues of a regional nature. MPOs are designated by the federal government, are centered in urban areas over 50,000 in population and focus on transportation related issues. RPCs are created at the state level, are centered on rural areas, and focus on a variety of sewer and water issues impacting local growth. Addressing transportation issues are often part of their activities.

WisDOT meets regularly with representatives from the MPOs, RPCs, FHWA, FTA, and WisDOT regional planners. The WRP 2050 team presented to the January 2021 MPO/RPC Directors' Meeting. Participants were presented with an overview of anticipated plan contents, plan timeline, and the methodology under development for the equity analysis. Participants suggested ways to address statistical analysis for MPOs bordering other states.

Other Meetings and Presentations

The WRP 2050 also presented an overview of the anticipated topics in the plan and the timeline to the following:

- WisDOT Planning Chiefs (January 2021)
- West Central Wisconsin Rail Coalition (January 2021)

Draft Plan

Details from the draft plan outreach will be added to this section in the draft final WRP 2050 document, anticipated in Spring/Summer 2023.

Draft Final Plan Public Involvement and Public Hearing

Details from the draft final plan outreach will be added to this section in the final adopted WRP 2050 document.

Final Plan Adoption

WisDOT will adopt the final WRP 2050 after considering comments from the draft final plan public involvement comment period and public hearing. The adopted Wisconsin Rail Plan 2050 will be shared with the public on WisDOT's website.

Technical Appendix to Equity Context of Rail in Wisconsin

Environmental Justice Overview

Signed and adopted in 1994, Executive Order (EO) 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," directs federal agencies to take steps necessarry to address disproportionately high and adverse effects on the health or environment of racial and ethnic minority populations and low-income populations through its programs, policies, and activities.

EO 12898 defines environmental justice (EJ) minority groups as:

- **Black or African American:** a person having origins in any of the black racial groups in Africa
- **American Indian or Alaskan Native**: a person having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition
- **Asian American:** a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands
- **American Indian and Alaskan Native:** a person having origins in any of the original people of North America, South America (including Central America), and who maintains cultural identification through tribal affiliation or community recognition
- **Hispanic:** a person having origins in of Mexico, Puerto Rico, Cuba, Central America, South America, or other Spanish culture, regardless of race

To define EJ low-income populations, EO 12898 considers persons whose household income is at or below the US Department of Health and Human Services poverty guidelines.

As a recipient of federal funds, WisDOT is required to comply with EO 12898. Additionally, WisDOT is required by Title VI of the Civil Rights Act of 1964 to comply with nondiscrimination on the basis of race, color, or national origin in any program or activity that receives federal funding or financial assistance. It is WisDOT policy to incorporate environmental justice in all planning, programming, and project decisions. WisDOT's actions and decisions are guided by the three fundamental principles of EJ:[1]

[1] *Environmental Justice Strategy | US Department of Transportation*

- To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations
- To ensure the full and fair participation by all potentially affected communities in the transportation decision making process
- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations

WisDOT also works closely with the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) to implement EO 12898 and the policy directives of federal partner agencies. These include the United States DOT Order 5610.2(a) "Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," FHWA Order 6640.23a "FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," and the Federal Transit Administration's Environmental Justice Circular 4703.1.

Descriptive Survey of Equity Demographics Methodology

An Environmental Justice, Title VI, or broader equity study for a long-range plan like Wisconsin Rail Plan 2050 looks different than a project or corridor analysis. WisDOT's long-range plan equity studies flag areas of potential concern for closer examination at the project level. As such, this equity study, which takes the form of a descriptive survey of equity demographics and issues, relies largely on interpretation of mapped demographic data from the United States Census Bureau at the state and WisDOT Region levels, rather than project-level detailed review of local conditions. As such, this study intentionally avoids declaring disparate impact, disproportionate burden, or statements of what is or is not equitable. To do so appropriately requires project-level details about the areas affected by, and the magnitude of positive or negative impacts of, investments in rail infrastructure. Further, for a determination of equitable or inequitable outcomes to be meaningful and credible, the affected community must be engaged in an authentic, accessible, and thorough process wherein community voices are elevated and trusted. While community engagement is a critical component of Wisconsin Rail Plan 2050, the equity-related engagement intentionally occurred at a state-wide scale. Community-targeted engagement which more properly identifies inequitable outcomes occurs at the project-level.

The equity-focused discussion in **Chapter 8 Environmental Context** of the Wisconsin Rail Plan 2050 reflects the Plan's long-range nature and lack of project-level investment details. Thus, in this discussion, maps were created to facilitate initial qualitative discussions about the potential

impacts of the rail system on study populations: minorities, low-income residents, youth, seniors, people with disabilities, and zero-vehicle households. These qualitative descriptions are justified by reviewing the underlying data, while remaining at a high level.

Demographic Maps and Data

Maps were created for each of the study populations at the statewide level and for each of the five WisDOT Regions; these maps are presented in **Chapter 8 Environmental Context** and in this appendix. Mapped data are from the United States Census Bureau's 2015-2019 American Community Survey (ACS) 5-year estimates, which are subject to error. The estimates published as part of the Census Bureau's 2015-2019 ACS 5-year dataset are based on data collected over a 5-year (60-month) period. Unlike single-year estimates, the ACS' five-year estimates allow for information to be presented on small population subgroups and at smaller geographies.

The 2015-2019 ACS 5-year estimates were the most recent available from the Census Bureau at the time of this Plan that also address the demographic characteristics explored in the equity-focused discussion. Further, the most disaggregated (smallest level reported, most precise) data available were used; in this instance, that meant most data are reported at the census block group level and, where necessary, the census tract level (see People with Disabilities within Census Data Limitations below for additional details below about data availability and suppression). According to 2015-2019 ACS 5-year estimates, in Wisconsin the average census block group was home to 1,290 residents, while the average census tract had 4,887 residents.

Data presented on statewide maps were organized into one of five classes based on the overall distribution of their values. A common data organization (classification) technique known as the Jenks natural breaks method was used to organize each data point (representing a single block group or tract) into one of five clusters of similar values such that there is minimal difference within the cluster. Each cluster of data were assigned a color shade on the map. This classification method is used to highlight differences and enable better visual identification of patterns before delving deeper into the specifics of each block group or tract.

Data were presented in the same manner of classification for each of the five WisDOT Regions and the state; as a result, each of the Region maps on a particular topic can be thought of as a "zoomed in" version of the statewide map for that same topic. The smaller scale of the Region maps is better suited for review of study populations' proximity to rail infrastructure. Meanwhile, the statewide maps are intended to provide broad understanding of the spatial distribution of study populations throughout the state.

To understand demographic characteristics of Wisconsin's population in relation to the rail network, Census data were overlaid with existing rail and rail-related infrastructure in the state, including active freight and passenger rail lines, rail/truck and port/truck intermodal facilities, passenger rail stations, and Amtrak Thruway bus stops. The sources of these infrastructure data are:

- WisDOT for active rail lines and intermodal facilities.
- United States Department of Homeland Security's Homeland Infrastructure Foundation-Level Data (HIFLD) and online Amtrak schedules for Amtrak passenger rail stations and Thruway bus stops; and
- Regional Transportation Authority's (RTA's) Regional Transportation Authority Mapping and Statistics (RTAMS) database for Metra stations.

Additionally, data on the location of native lands in Wisconsin were used and made available through the Wisconsin Department of Natural Resources (DNR).

Census Data Limitations

Data from the Census Bureau's ACS are the most widely available, reliable, and timely data available for use in the Wisconsin Rail Plan 2050. Even so, ACS and other Census data have limitations that are important to recognize. Unlike the Decennial Census survey, which is conducted every ten years and is intended to be a complete (100%) count of the nation's population at a point in time, the ACS is based on a subset of the population and relies on data collected from a sample over the course of one or five years, which are then extrapolated to create estimates. The Census Bureau sends requests to complete the ACS to a random sample of addresses within the geographic area for which they are creating an estimate, and any one address has about a 1 in 40 change of receiving an ACS survey to complete. Importantly, sample surveys like the ACS have a degree of uncertainty and are subject to error.

Again, the demographic data presented in this chapter are from the ACS and are estimates. As such, care should be taken not to place too much emphasis on the absolute values reported for a single block group or tract. Instead, ACS data are better suited for characterizing population, rather than counting population, and for examining broader patterns based on many data points (e.g., block groups or tracts).

Group Quarters Populations

Some of the demographic characteristics explored in this chapter exclude people living in group quarters. The Census Bureau defines group quarters as "a place where people live or stay in a group living arrangement that is owned or managed by an entity or organization providing housing and/or services for the residents." Group quarters can be institutional and non-institutional. Institutional group quarters include adult and juvenile correctional facilities, nursing facilities, and other facilities such as psychiatric hospitals and in-patient hospice facilities. Non-institutional group quarters include college/university student housing, military quarters, group homes, or shelters.

The ACS excludes people living in group quarters from its estimates of poverty. In this chapter, low-income individuals are defined as those living in poverty. Additionally, the ACS excludes people living in institutionalized group quarters from its estimates of people with disabilities. The other population-based demographic characteristics reviewed in this chapter – based on race and ethnicity and age – are reflective of the estimated total population.

People with Disabilities

The Census Bureau reports information on people with disabilities down to the census tract level of geography. This differs from the other characteristics explored in this report (e.g., age, race/ethnicity, etc.), which the Census Bureau publishes data on at the census block group level, a lower (smaller) level of geography that enables greater precision. Multiple census block groups are nested within a single census tract. On average, there are about four census block groups for every one census tract in Wisconsin. According to 2015-2019 ACS 5-year estimates, in Wisconsin the average census tract has about 3.8 times as many people (4,887) than the average census block group (1,290 people).

The Census Bureau considers data reliability based on sample size and margin of error, disclosure and privacy rules and restrictions, and the nature of the topics covered when deciding what level of geography (i.e., tract, block group, etc.) data can be published for. One or more of these reasons explains why data regarding people with disabilities are available only down to the census tract level, rather than the block group level, throughout Wisconsin in the 2015-2019 ACS 5-year estimates.

Population Density

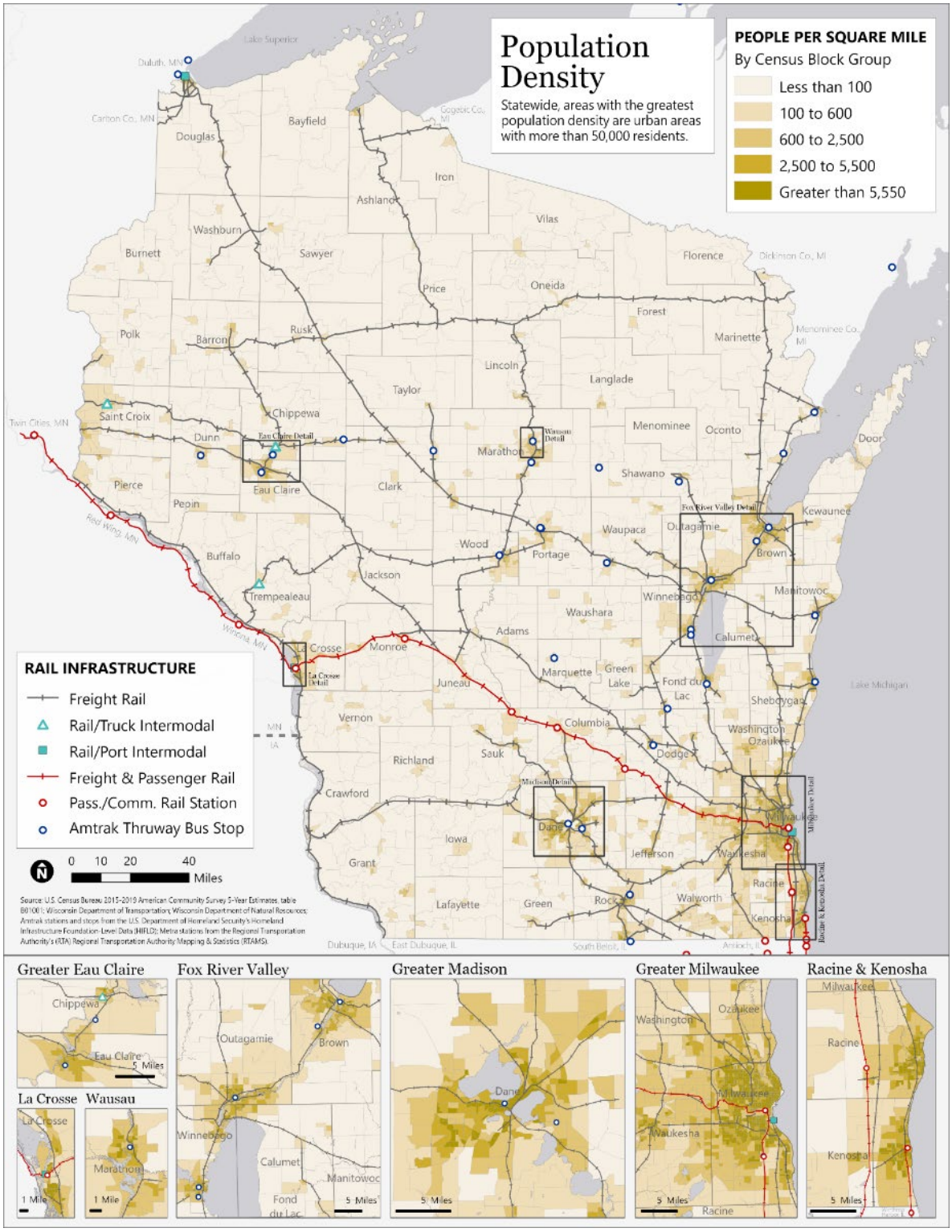
Figure A-1 displays Census Bureau data on population subgroups as a percent of total population or total occupied housing units within census block groups or census tracts. Percentages are useful ways of quickly reviewing patterns and the relative composition of

residents or households across space. However, percentages can be misleading without an understanding of approximately how many people live in a specific area.

Census units (e.g., block groups) can vary greatly in size, as they are defined based on population size (among other factors). Consider for example two block groups – one in the heart of Green Bay and another in rural Grant County; both could have approximately 1,300 residents, but the block group in Green Bay may be 0.2 square miles large, while the one in Grant County may be 20 or more square miles large. This highlights the importance of understanding population density when considering mapped Census data at large scales, as in this chapter.

Data points in the map legends are accurate to one decimal point. The upper end of each data range is non-inclusive. While not shown explicitly on the maps in order to keep them simple, for example, a data range such as 10 to 60 is technically 10.0 to 59.9.

Figure A-1: Population Density- Statewide



Racial and Ethnic Minorities

The United States DOT (USDOT) Environmental Justice Orders, as well as FTA's Environmental Justice and Title VI Circulars (4703.1 and 4702.1B, respectively) define "minority" as an individual who self-identifies as one of the following racial or ethnic categories:

- **Black or African American:** a person having origins in any of the black racial groups of Africa;
- **Hispanic or Latino:** a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race;
- **Asian American:** a person having origins in any of the original peoples of East Asia, Southeast Asia, or South Asia;
- **American Indian and Alaskan Native:** a person having origins in any of the original people of North America, South America (including Central America), and who maintains cultural identification through tribal affiliation or community recognition; or
- **Native Hawaiian and Other Pacific Islander:** people having origins in any of the original peoples of Hawaii, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or other Pacific Islands

These definitions correspond to the racial and ethnic categories used by the United States Census Bureau in addition to two additional non-white categories. Respondents that select more than one racial category are categorized by the Census Bureau as "Two or More Races." Respondents may also select "Some Other Race" and write in a response if they feel that none of the other racial categories sufficiently describes their background. For the purposes of this investigation, respondents in the Two or More Races and Some Other Race categories were also considered part of the minority population. **Table A-1** illustrates Wisconsin population group counts by WisDOT Region. **Table A-2** illustrates Wisconsin population group percents by WisDOT Region.

Table A-1: Population Counts by Race and Ethnicity by WisDOT Region

Population Group	State	Region				
		North Central	Northeast	Northwest	Southeast	Southwest
Total Population	5,790,716	590,627	1,090,263	692,270	2,042,423	1,375,133
White	4,705,599	533,172	950,189	635,792	1,404,930	1,181,516
Minority	1,085,117	57,455	140,074	56,478	637,493	193,617
Black or African American	364,060	4,379	18,223	6,231	291,666	43,561
American Indian or Alaska Native	46,936	12,218	11,976	10,618	7,197	4,927
Asian	160,706	12,819	31,250	9,532	64,479	42,626
Native Hawaiian or other Pacific Islander	2,107	279	260	541	680	347
Other Race	6,068	594	892	246	3,236	1,100
Two or More Races	110,848	9,606	19,161	11,370	42,631	28,080
Hispanic or Latino (of any race)	394,392	17,560	58,312	17,940	227,604	72,976

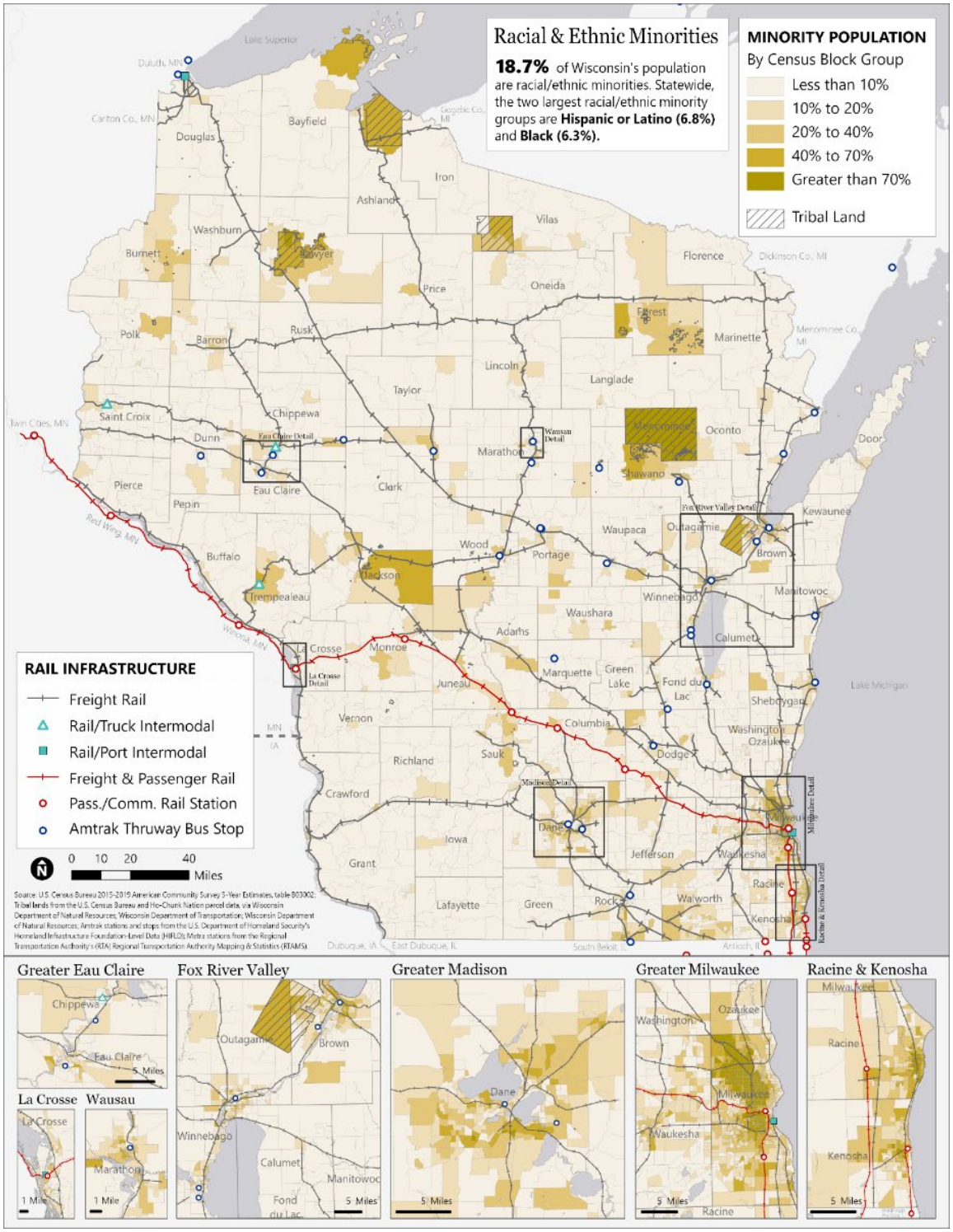
Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates, table B03002

Table A-2: Population Percentages by Race and Ethnicity by WisDOT Region

Population Group	State	Region				
		North Central	Northeast	Northwest	Southeast	Southwest
White	81.3%	90.3%	87.2%	91.8%	68.8%	85.9%
Minority	18.7%	9.7%	12.8%	8.2%	31.2%	14.1%
Black or African American	6.3%	0.7%	1.7%	0.9%	14.3%	3.2%
American Indian or Alaska Native	0.8%	2.1%	1.1%	1.5%	0.4%	0.4%
Asian	2.8%	2.2%	2.9%	1.4%	3.2%	3.1%
Native Hawaiian or other Pacific Islander	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%
Other Race	0.1%	0.1%	0.1%	0.0%	0.2%	0.1%
Two or More Races	1.9%	1.6%	1.8%	1.6%	2.1%	2.0%
Hispanic or Latino (of any race)	6.8%	3.0%	5.3%	2.6%	11.1%	5.3%

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates, table B03002

Figure A-2: Racial and Ethnic Minority Population



Low-Income Population

The USDOT Environmental Justice Order, as well as FTA's Environmental Justice and Title VI Circulars (4703.1 and 4702.1B, respectively) define "low-income" as "a person whose median household income is at or below the United States Department of Health and Human Services (HHS) poverty guidelines." The HHS poverty guidelines are based on household size and the number of related children less than eighteen years of age. The guidelines are updated annually and are summarized separately for the 48 contiguous states, Alaska, and Hawaii. The 2019 HHS poverty guidelines for the 48 contiguous states and the District of Columbia are shown in **Table A-3.**

Table A-3: Department of Health & Human Services Poverty Guidelines for 2019

Persons in Family/Household	Poverty Guideline ($) *
1	$12,490
2	$16,910
3	$21,330
4	$25,750
5	$30,170
6	$34,590
7	$39,010
8	$43,430

**For families/households with more than 8 persons, add $4,420 for each additional person.*

**For families/households with more than 8 persons, add $4,420 for each additional person.*

Source: Department of Health & Human Services Poverty Guidelines, available at https://www.census.gov/data/tables/2020/demo/income-poverty/p60-270.html

FTA's Environmental Justice and Title VI Circulars also allows for low-income populations to be defined using other established measures that are at least as inclusive as those developed by HHS. Poverty guidelines from HHS are less suitable for statistical analysis including mapping; rather, they are used for administrative purposes. The 2019 Census Bureau poverty thresholds are a more sophisticated measure of poverty that consider not only family/household size, but also

the number of related children present, and, for one- and two-person family units, whether someone is elderly or not. The Census Bureau's poverty thresholds are used in the Wisconsin Rail Plan 2050 for statistical purposes and enable a finer-grained and more accurate understanding of people experiencing poverty compared to HHS poverty guidelines. The Census Bureau 2019 poverty thresholds by family size and presence of related children under 18 years is shown in **Table A-4**.

Table A-4: U.S. Census Bureau Poverty Thresholds (in Dollars) for 2019

Size of family unit	Weighted average thresholds	Related children under 18 years								
		None	One	Two	Three	Four	Five	Six	Seven	Eight or more
One person (unrelated individual)	13,011									
Underage 65	13,300	13,300								
Aged 65 and older	12,261	12,261								
Two People	16,521									
Householder under age 65	17,196	17,120	17,622							
Householder aged 65 and older	15,468	15,453	17,555							
Three people	20,335	19,998	20,578	20,598						
Four people	26,172	26,370	26,801	25,926	26,017					
Five people	31,021	31,800	32,263	31,275	30,510	30,044				
Six people	35,129	36,576	36,721	35,965	35,239	34,161	33,522			
Seven people	40,016	42,085	42,348	41,442	40,811	39,635	38,262	36,757		
Eight people	44,461	47,069	47,485	46,630	45,881	44,818	43,470	42,066	41,709	
Nine people or more	52,875	56,621	56,895	56,139	55,503	54,460	53,025	51,727	51,406	49,426

Source: U.S. Census Bureau Poverty Thresholds, available at https://www.census.gov/data/tables/2020/demo/income-poverty/p60-270.html

Furthermore, the Census Bureau's annual poverty thresholds can be analyzed to consider varying levels of poverty to reflect those experiencing more significant financial hardship. The poverty thresholds shown in **Table A-4** represent the standard (100%) poverty thresholds for different family compositions. In this report, the 100% poverty thresholds shown in **Table A-4** were used

to define poverty – and thus low-income status – as reported in the **2015-2019 ACS Estimates** table.

Lastly, estimates of people experiencing poverty from the ACS exclude people living in group quarters. The Census Bureau's definition of group quarters includes institutional quarters such as correctional facilities, nursing homes, and psychiatric hospitals, as well as non-institutional quarters, such as college dormitories, military barracks, group homes, missions, and shelters. Information regarding several groups is represented in the following tables: Low Income (**Table A-5**); Youth (**Table A-6**); Seniors (**Table A-7**); and zero-vehicle households (**Table A-9**) and figures: Low Income (**Figure A-3**); Youth (**Figure A-4**); Seniors (**Figure A-5**); and zero-vehicle households (**Figure A-7**).

Statewide Patterns

Low-Income Population

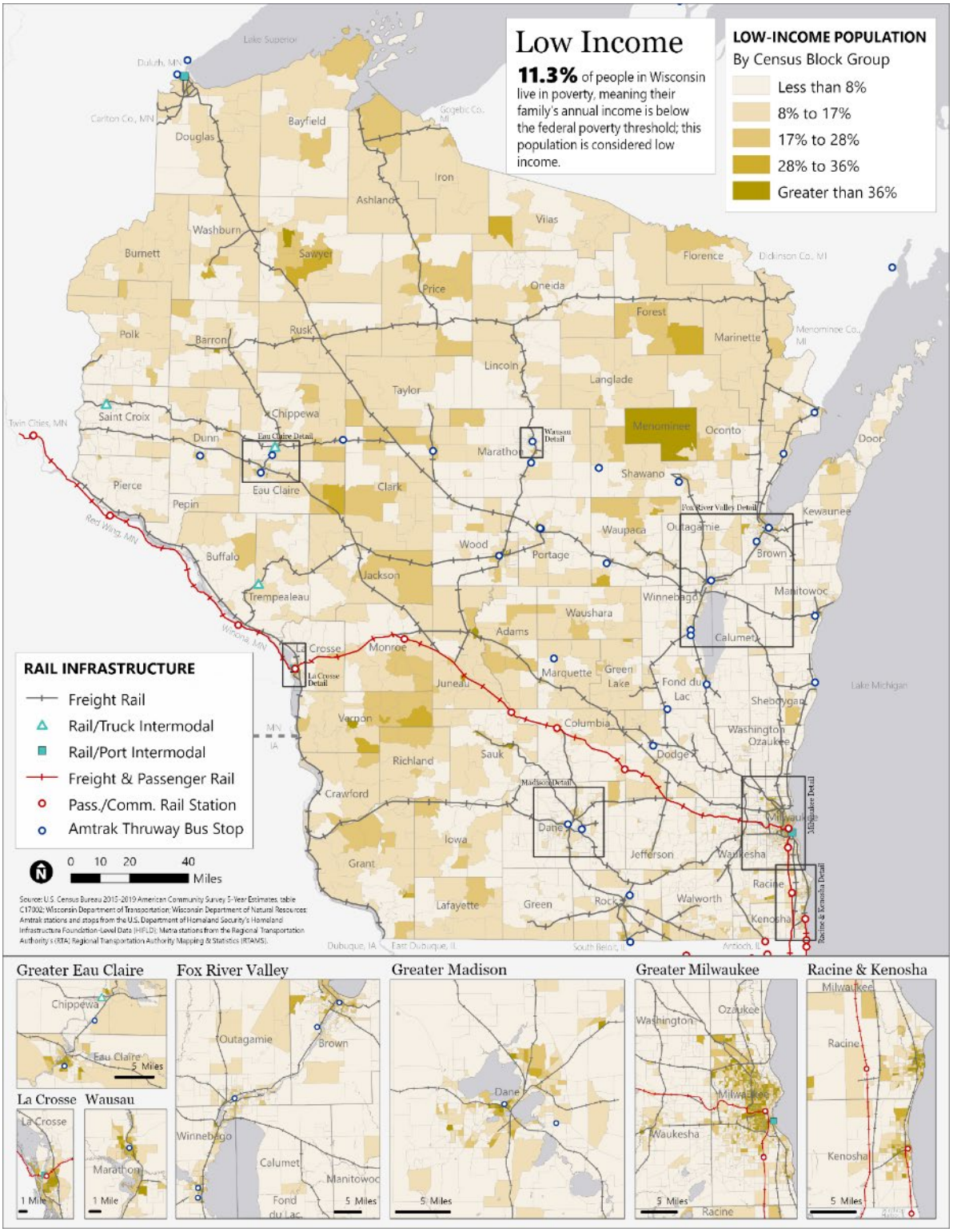
Table A-5: Low Income Population by WisDOT Region

Low Income Population by WisDOT Region						
Population Group	**Statewide**	**North Central**	**Northeast**	**Northwest**	**Southeast**	**Southwest**
Total population	5,790,716	590,627	1,090,263	692,270	2,042,423	1,375,133
Population for whom poverty status is determined*	5,642,353	576,363	1,061,901	670,436	1,999,805	1,333,848
Population in poverty	639,160	62,348	96,760	71,828	260,689	147,535
Percent of population in poverty	11.3%	10.8%	9.1%	10.7%	13.0%	11.1%

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates

**Census Bureau Poverty Thresholds are not applied to the population living in group quarters, such as correctional facilities, nursing homes, psychiatric hospitals, college dormitories, military barracks, group homes, missions, or shelters.*

Figure A-3: Low-Income Population (Statewide)



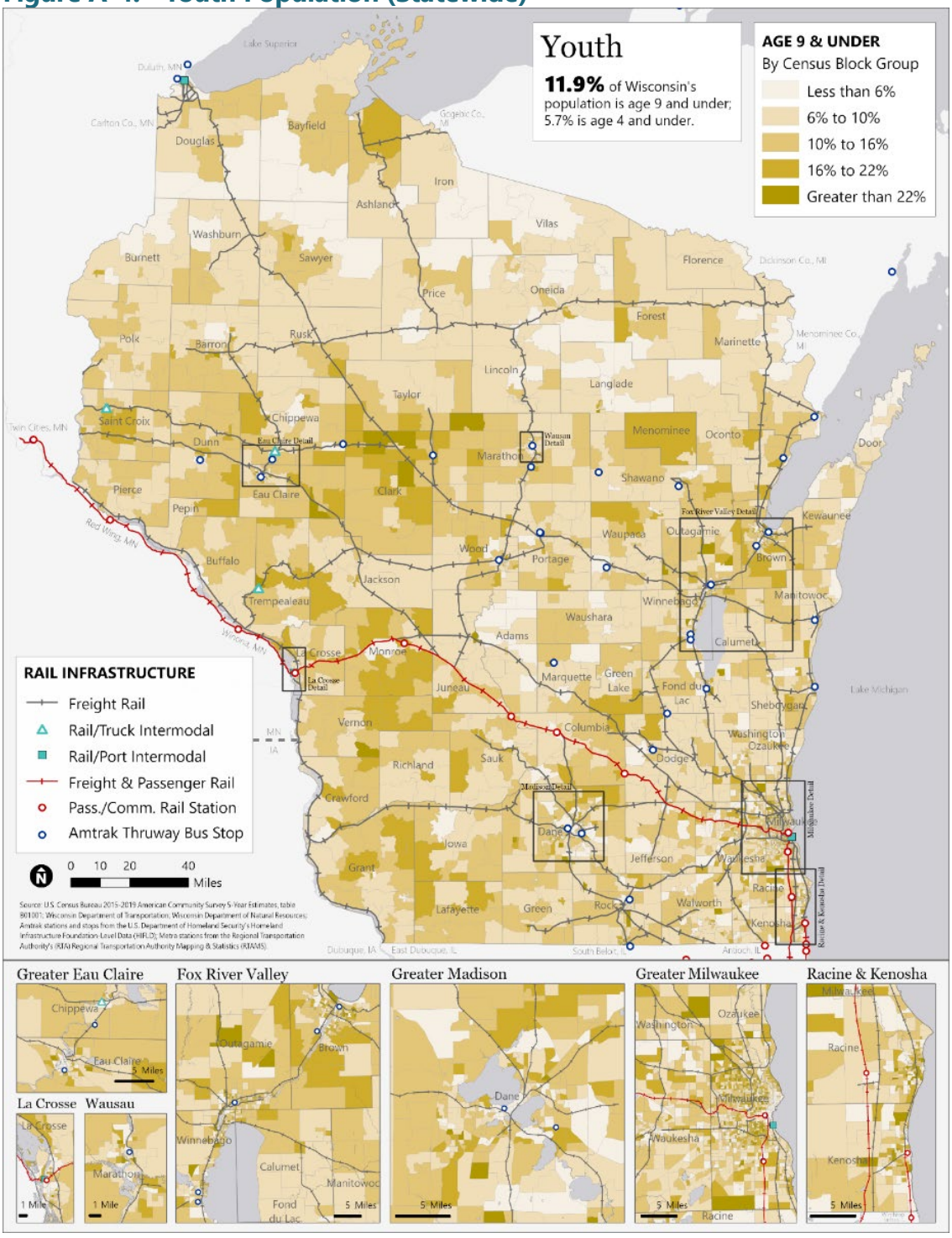
Youth Population

Table A-6: Youth Population by WisDOT Region

Youth Population by WisDOT Region						
Population Group	**Statewide**	**North Central**	**Northeast**	**Northwest**	**Southeast**	**Southwest**
Total population	5,790,716	590,627	1,090,263	692,270	2,042,423	1,375,133
Youth: Age 9 and under	687,312	62,535	131,650	80,698	253,590	158,839
Percent youth	11.9%	10.6%	12.1%	11.7%	12.4%	11.6%

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates, table B01001

Figure A-4: Youth Population (Statewide)



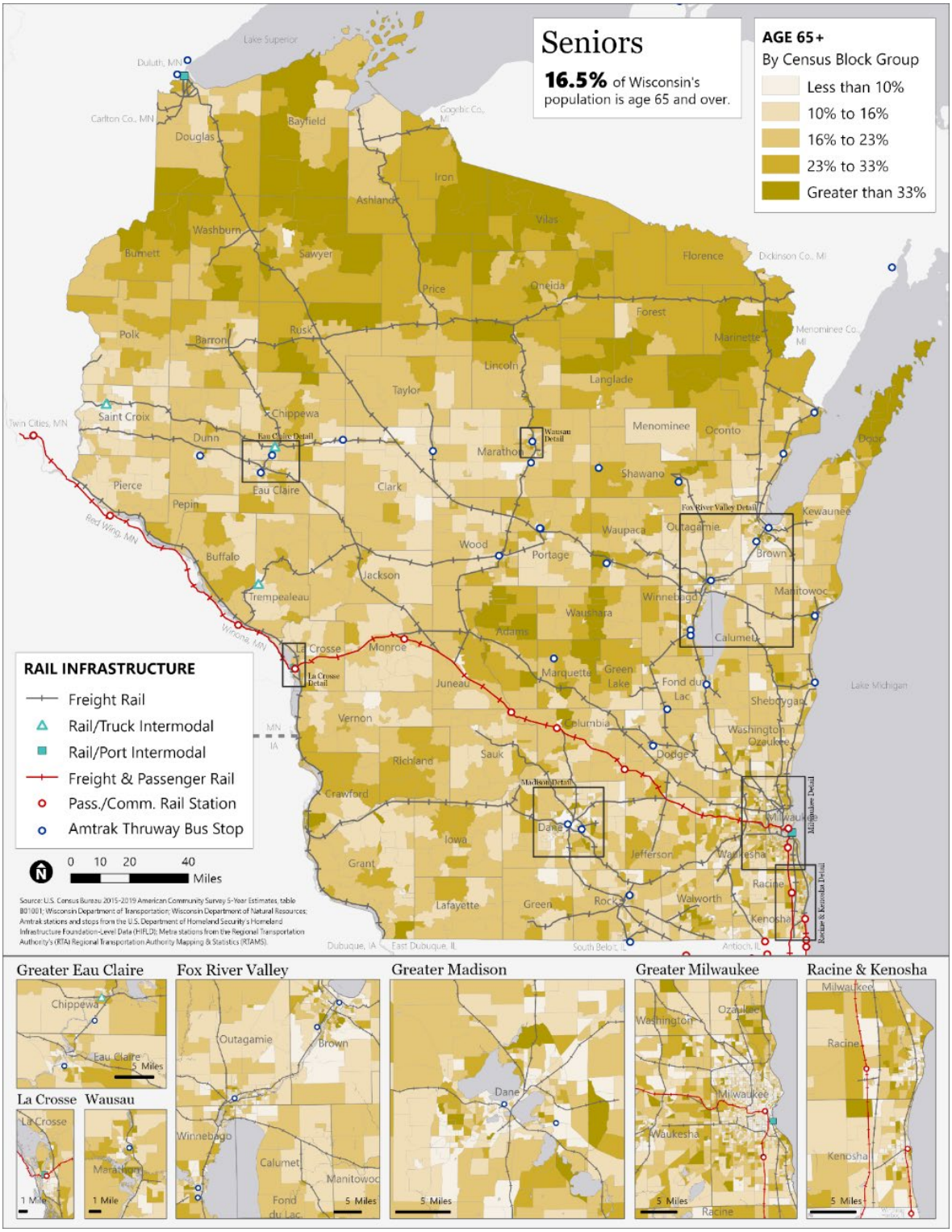
Senior Population

Table A-7: Senior Population by WisDOT Region

Senior Population by WisDOT Region						
Population Group	**Statewide**	**North Central**	**Northeast**	**Northwest**	**Southeast**	**Southwest**
Total population	5,790,716	590,627	1,090,263	692,270	2,042,423	1,375,133
Seniors Aged 65 and older	953,571	122,230	181,405	123,622	311,143	215,171
Percent seniors	16.5%	20.7%	16.6%	17.9%	15.2%	15.6%

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates, table B01001

Figure A-5: Senior Population (Statewide)



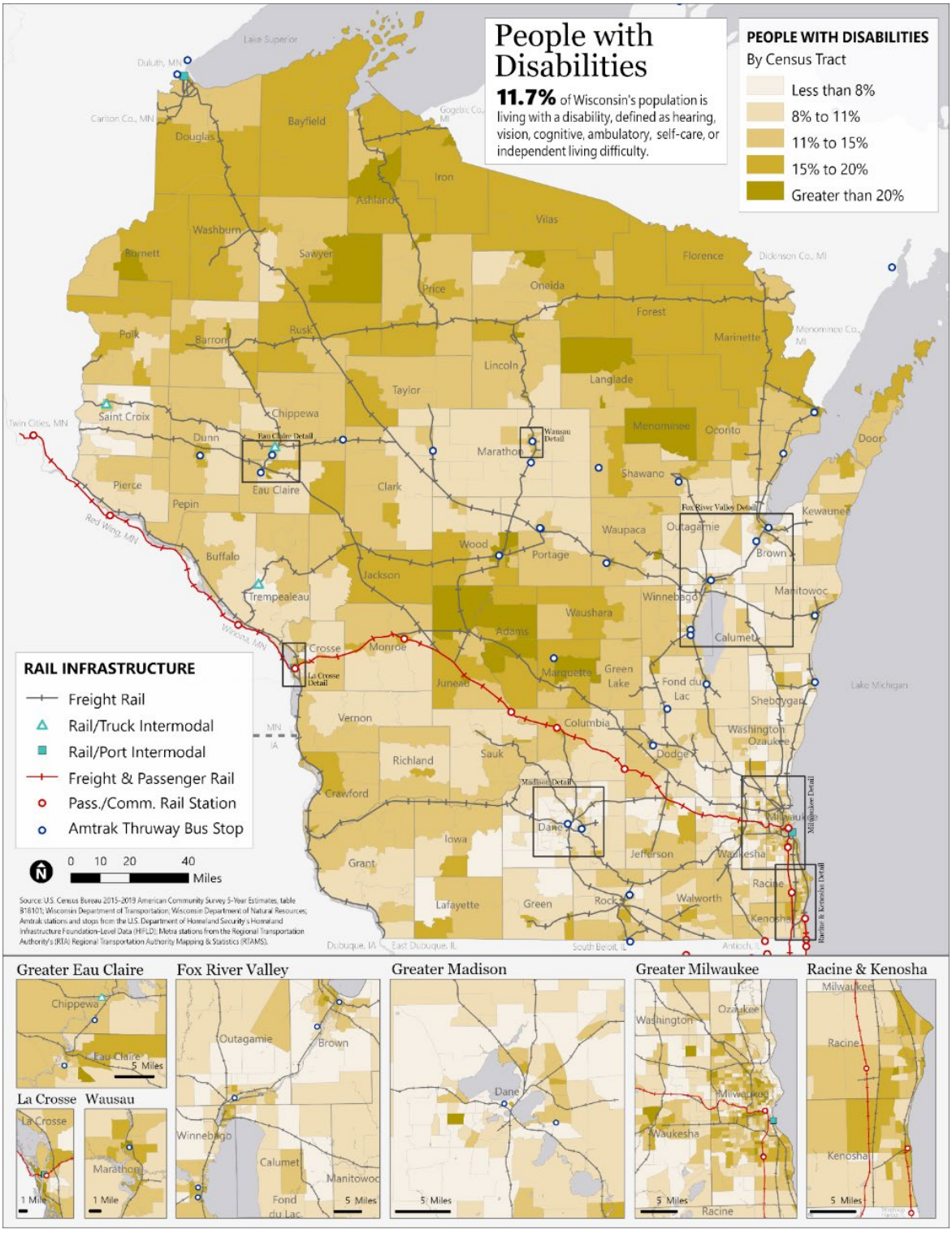
People with Disabilities

Table A-8: People with Disabilities by WisDOT Region

People with Disabilities by WisDOT Region						
Population Group	**Statewide**	**North Central**	**Northeast**	**Northwest**	**Southeast**	**Southwest**
Total population	5,790,716	590,627	1,090,263	692,270	2,042,423	1,375,133
Population with one or more disabilities	671,635	81,254	121,760	87,449	235,364	145,808
Percent population with a disability	11.7%	14.0%	11.3%	12.8%	11.6%	10.7%

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates, table B01001

Figure A-6: People with Disabilities (Statewide)



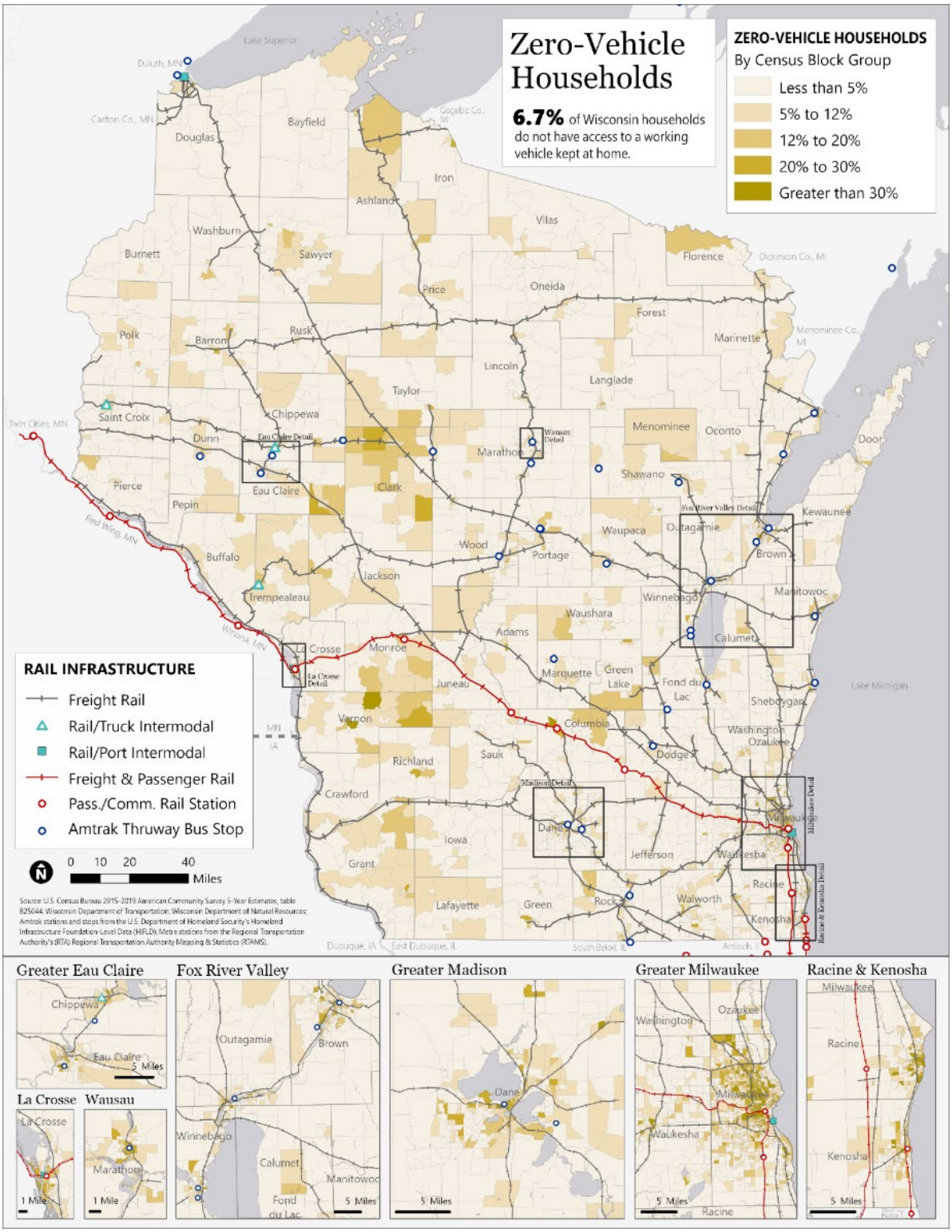
Zero-Vehicle Households

Table A-9: Zero-Vehicle Households by WisDOT Region

Zero-Vehicle Households by WisDOT Region						
Population Group	**Statewide**	**North Central**	**Northeast**	**Northwest**	**Southeast**	**Southwest**
Households	2,358,156	253,934	449,204	282,370	813,051	559,597
Zero-vehicle households	157,168	12,703	23,318	14,564	71,946	34,637
Percent zero-vehicle households	6.7%	5.0%	5.2%	5.2%	8.8%	6.2%

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates, table B18101

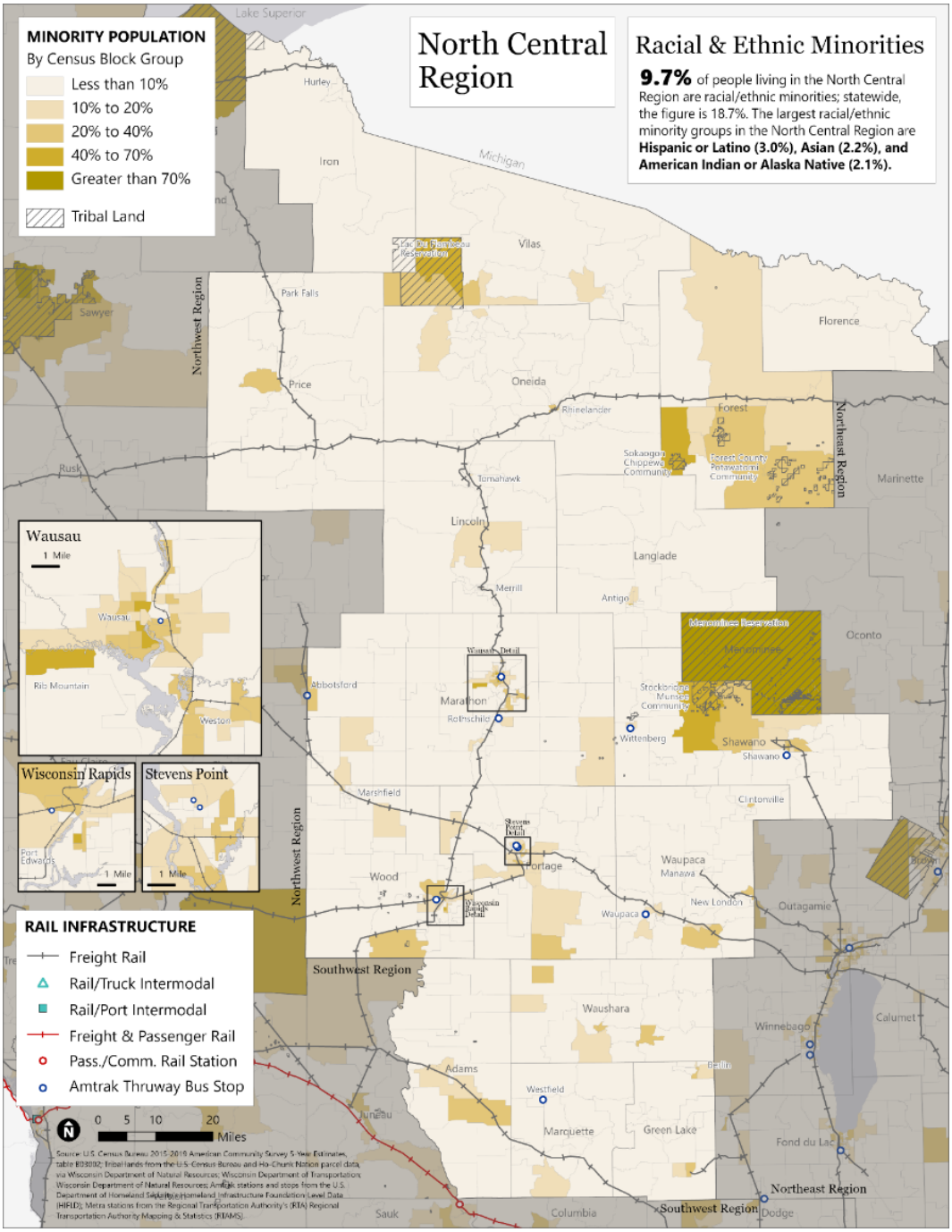
Figure A-7: Zero-Vehicle Households (Statewide)



North Central Region

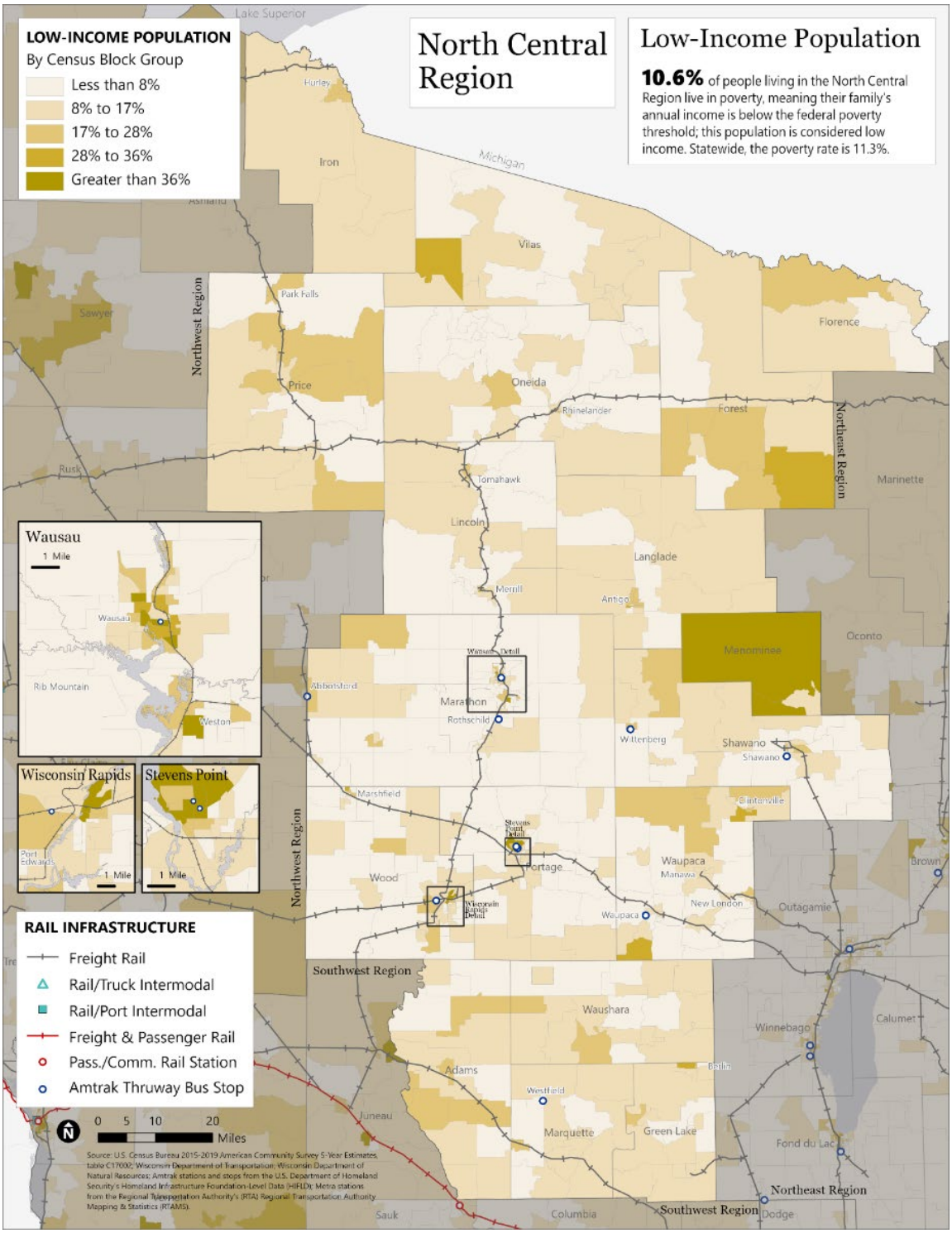
Racial and Ethnic Minorities

Figure A-8: Racial and Ethnic Minority Population – North Central Region



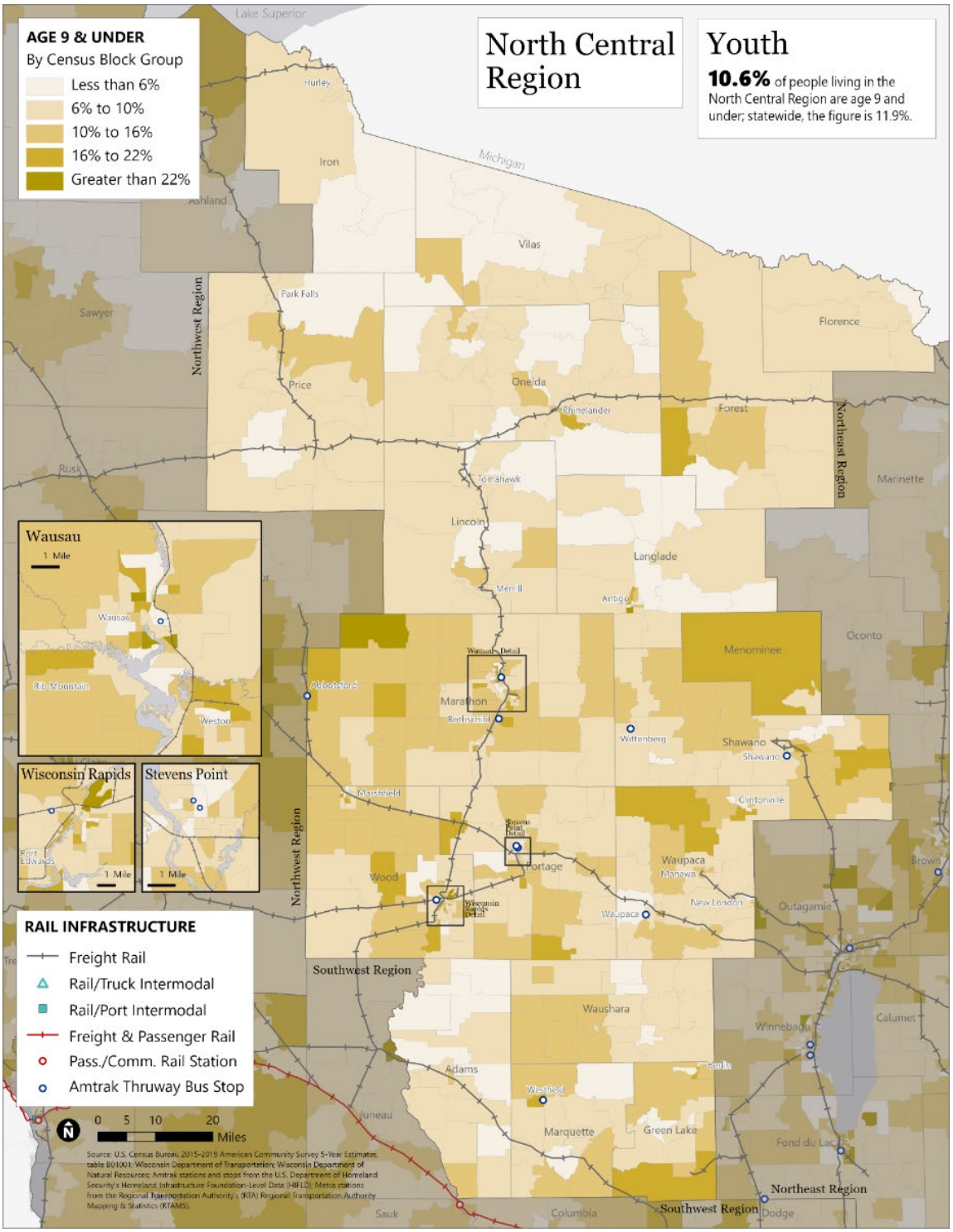
Low Income Population

Figure A-9: Low Income Population – North Central Region



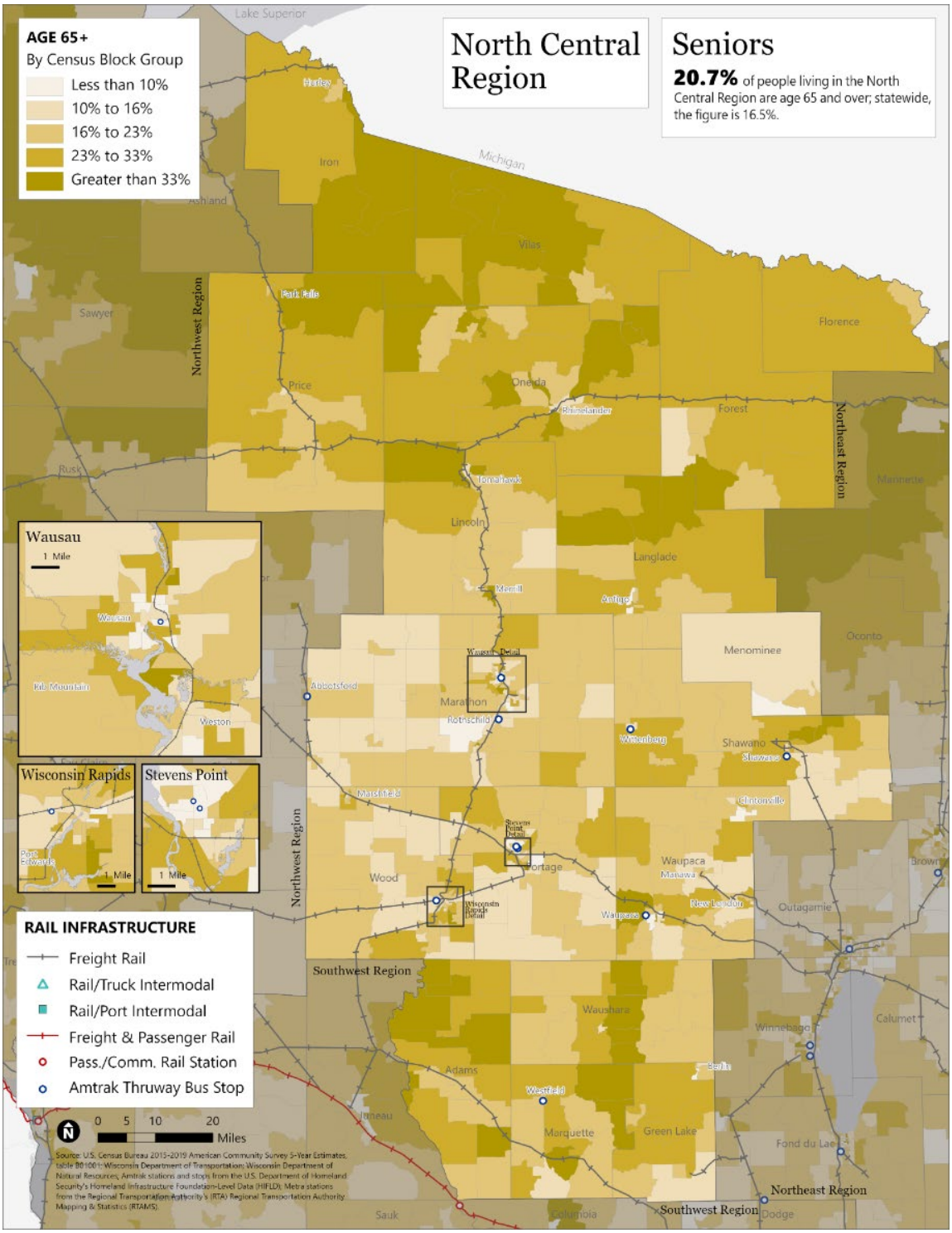
Youth Population

Figure A-10: Youth – North Central Region



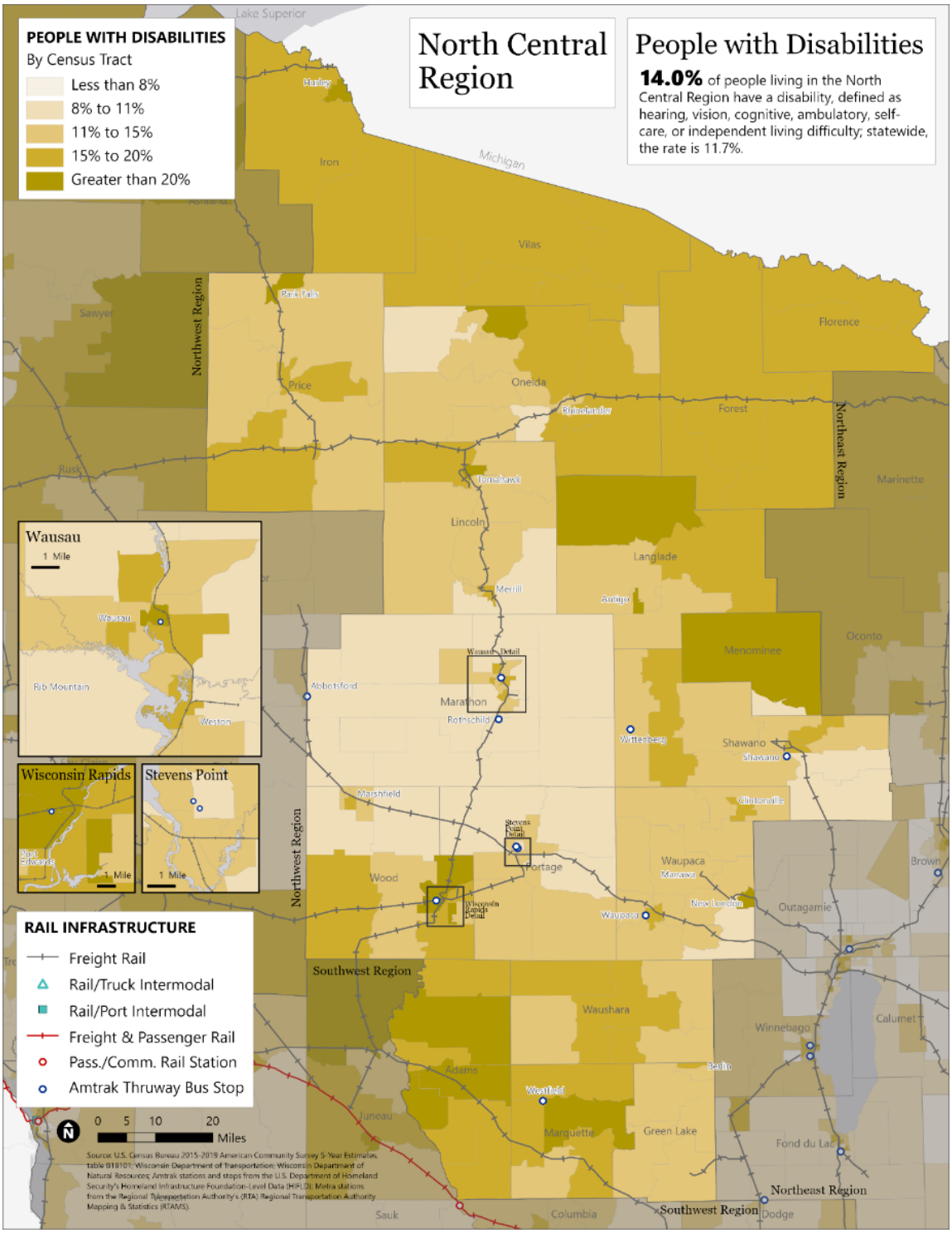
Senior Population

Figure A-11: Seniors – North Central Region



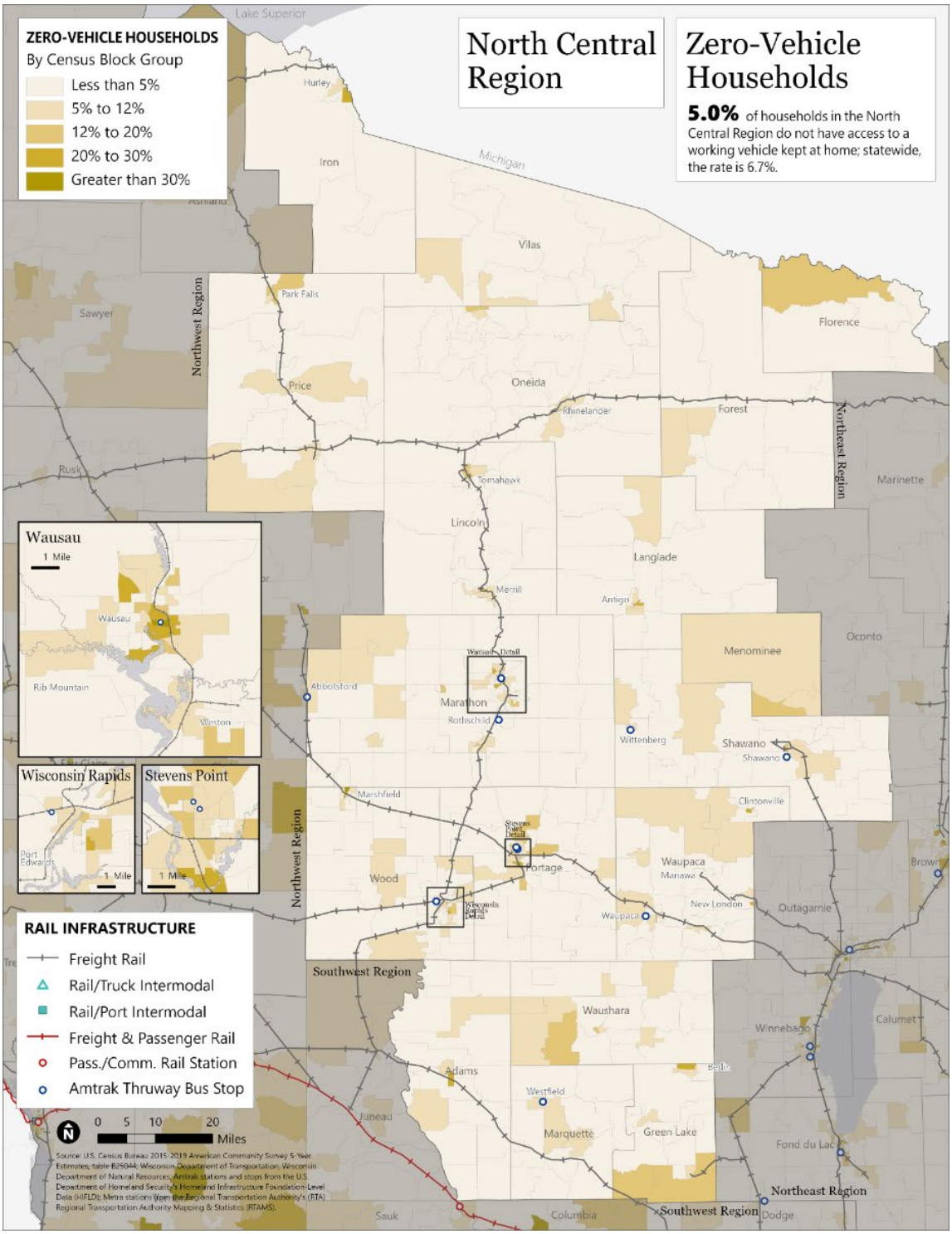
People with Disabilities

Figure A-12: People with Disabilities – North Central Region



Zero-Vehicle Households

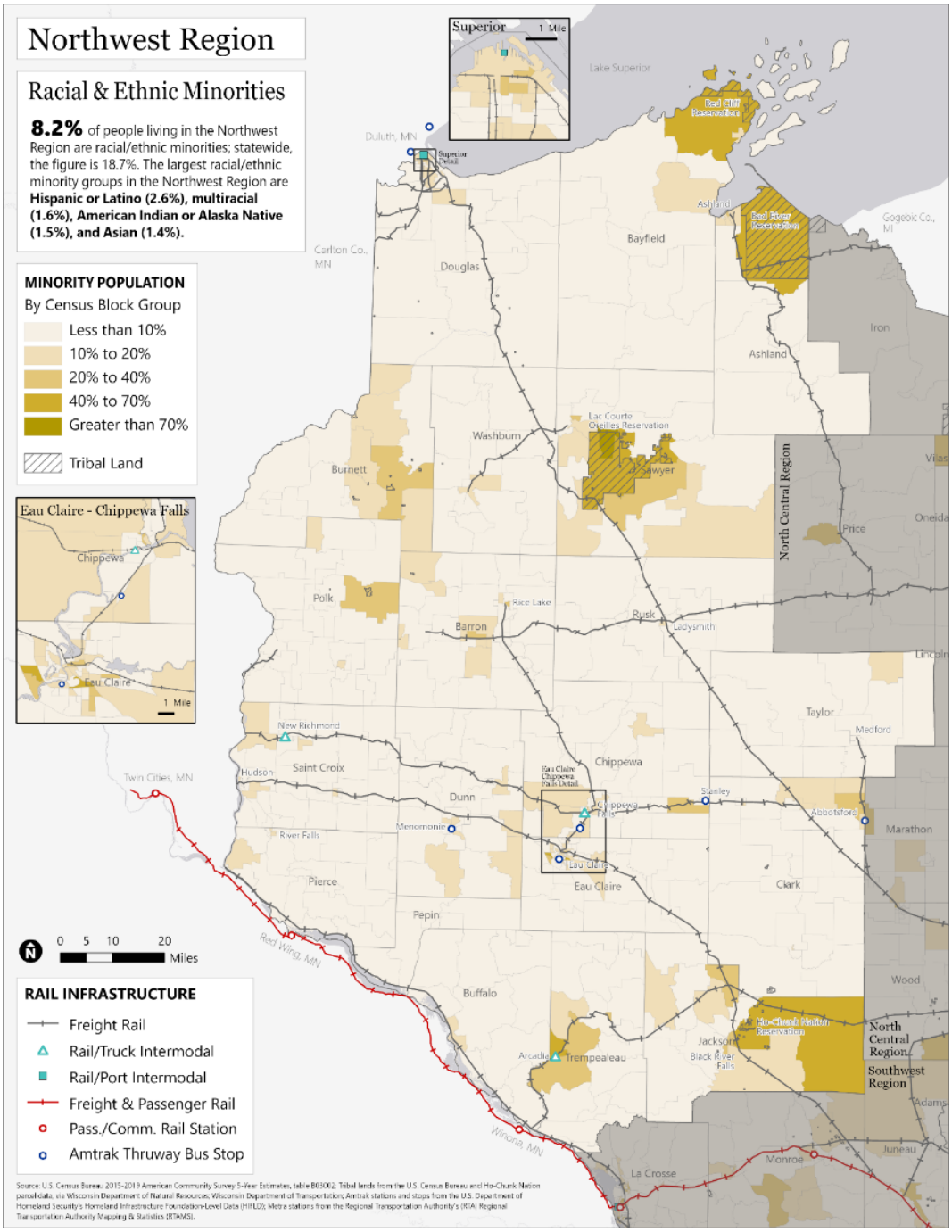
Figure A-13: Zero-Vehicle Households – North Central Region



Northwest Region

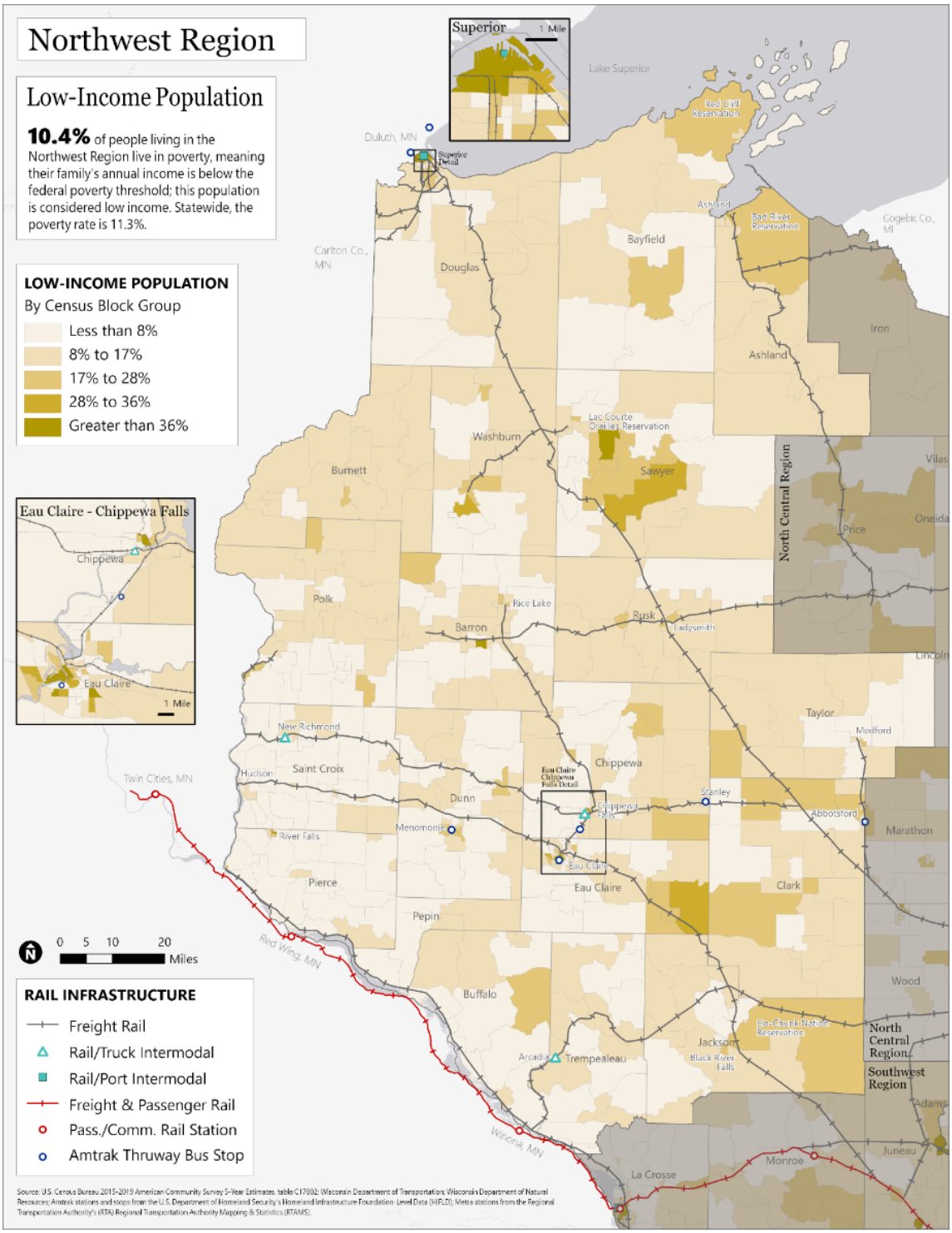
Racial and Ethnic Minority Population

Figure A-14: Racial and Ethnic Minority Population – Northwest Region



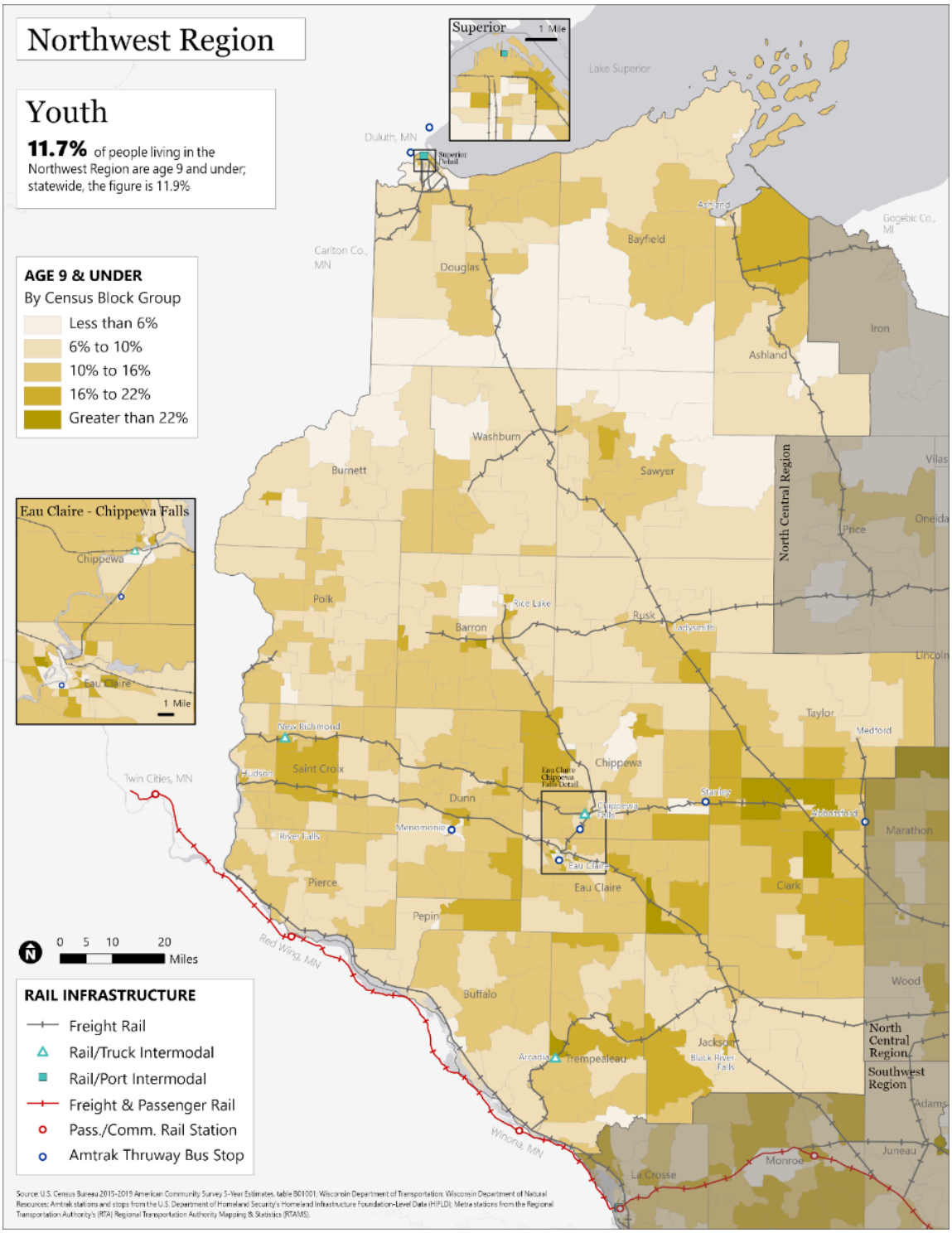
Low Income Population

Figure A-15: Low Income Population – Northwest Region



Youth Population

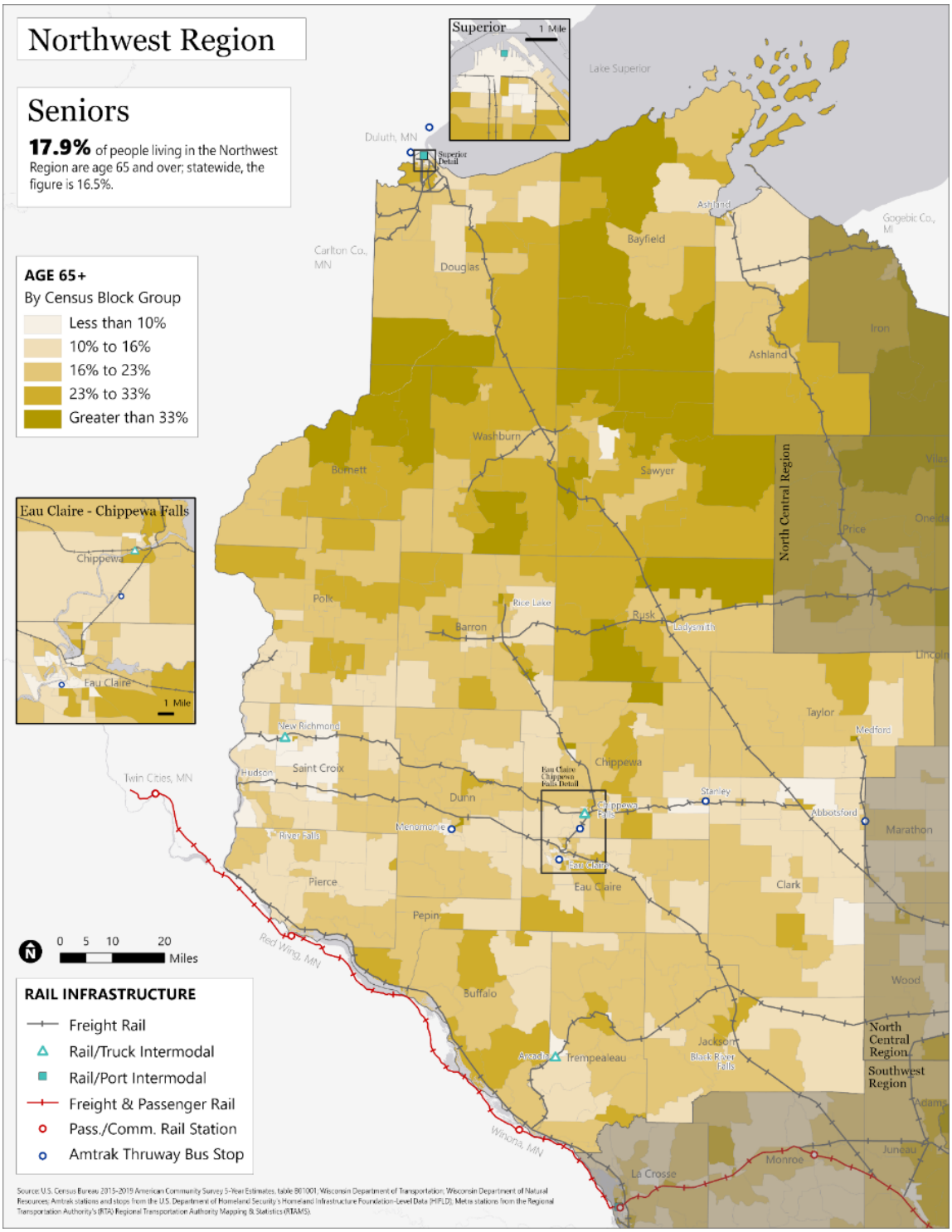
Figure A-16: Youth – Northwest Region



Source: U.S. Census Bureau 2015-2019 American Community Survey 5-Year Estimates, table B01001; Wisconsin Department of Transportation; Wisconsin Department of Natural Resources; Amtrak stations and stops from the U.S. Department of Homeland Security's Homeland Infrastructure Foundation-Level Data (HIFLD); Metra stations from the Regional Transportation Authority's (RTA) Regional Transportation Authority Mapping & Statistics (RTAMS).

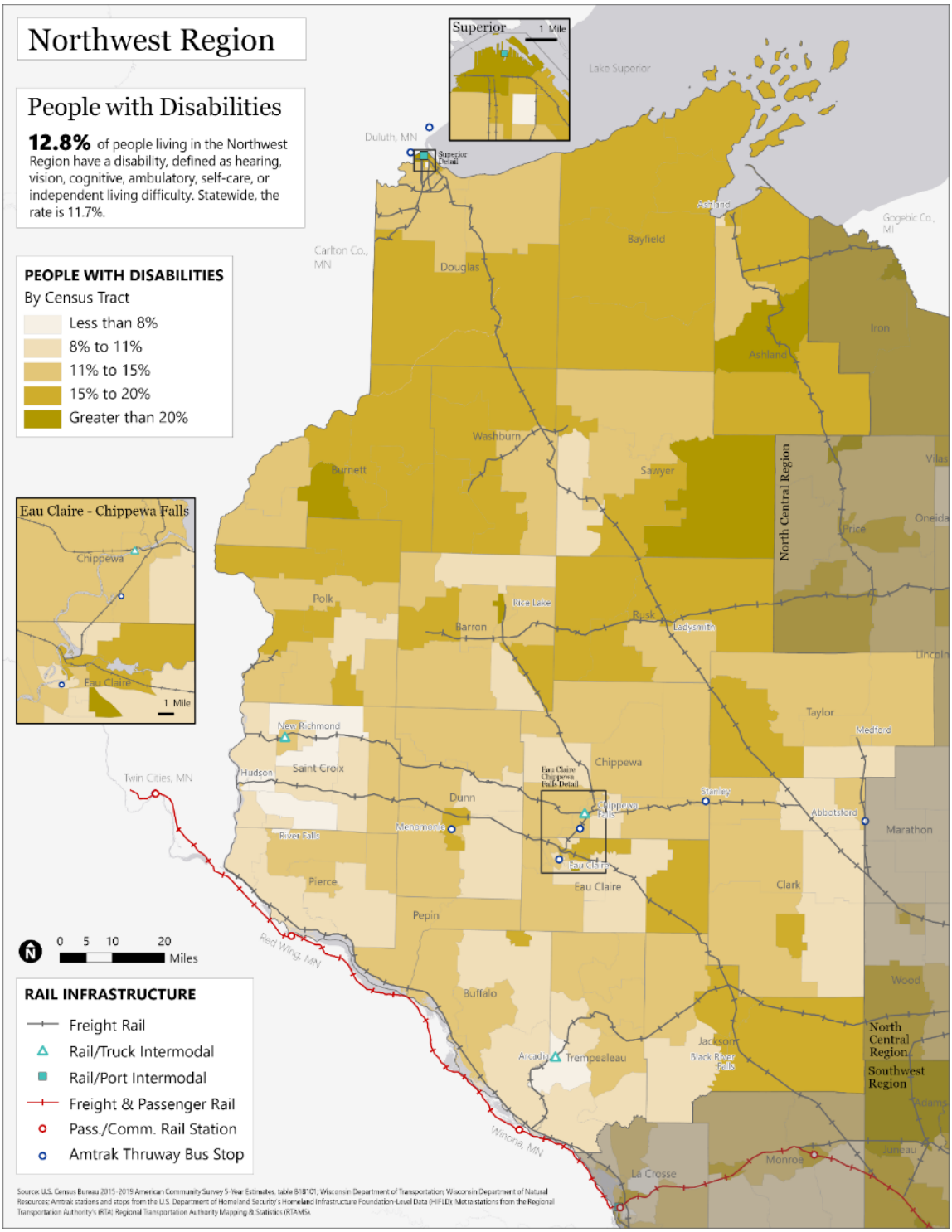
Senior Population

Figure A-17: Seniors – Northwest Region



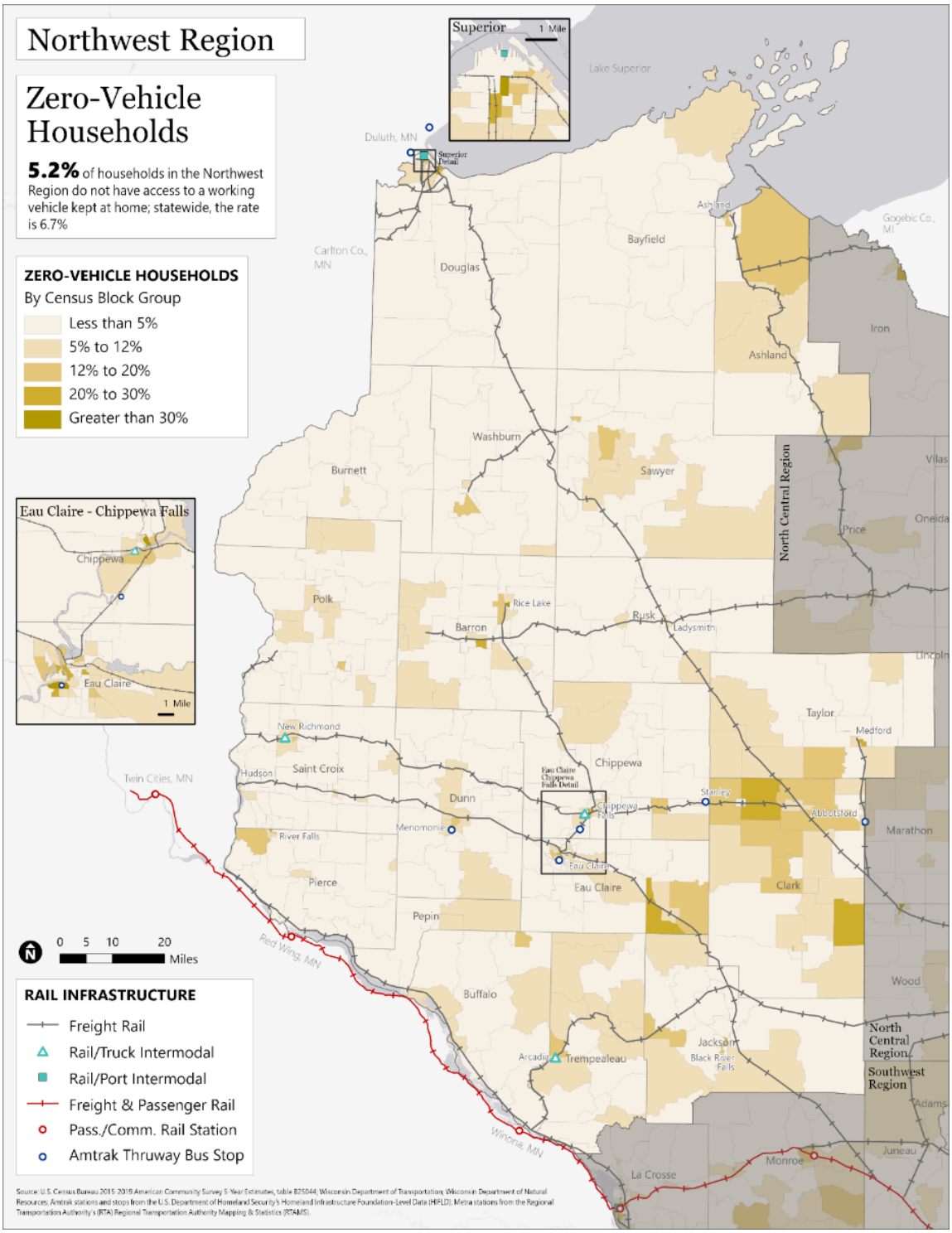
People with Disabilities

Figure A-18: People with Disabilities – Northwest Region



Zero-Vehicle Households

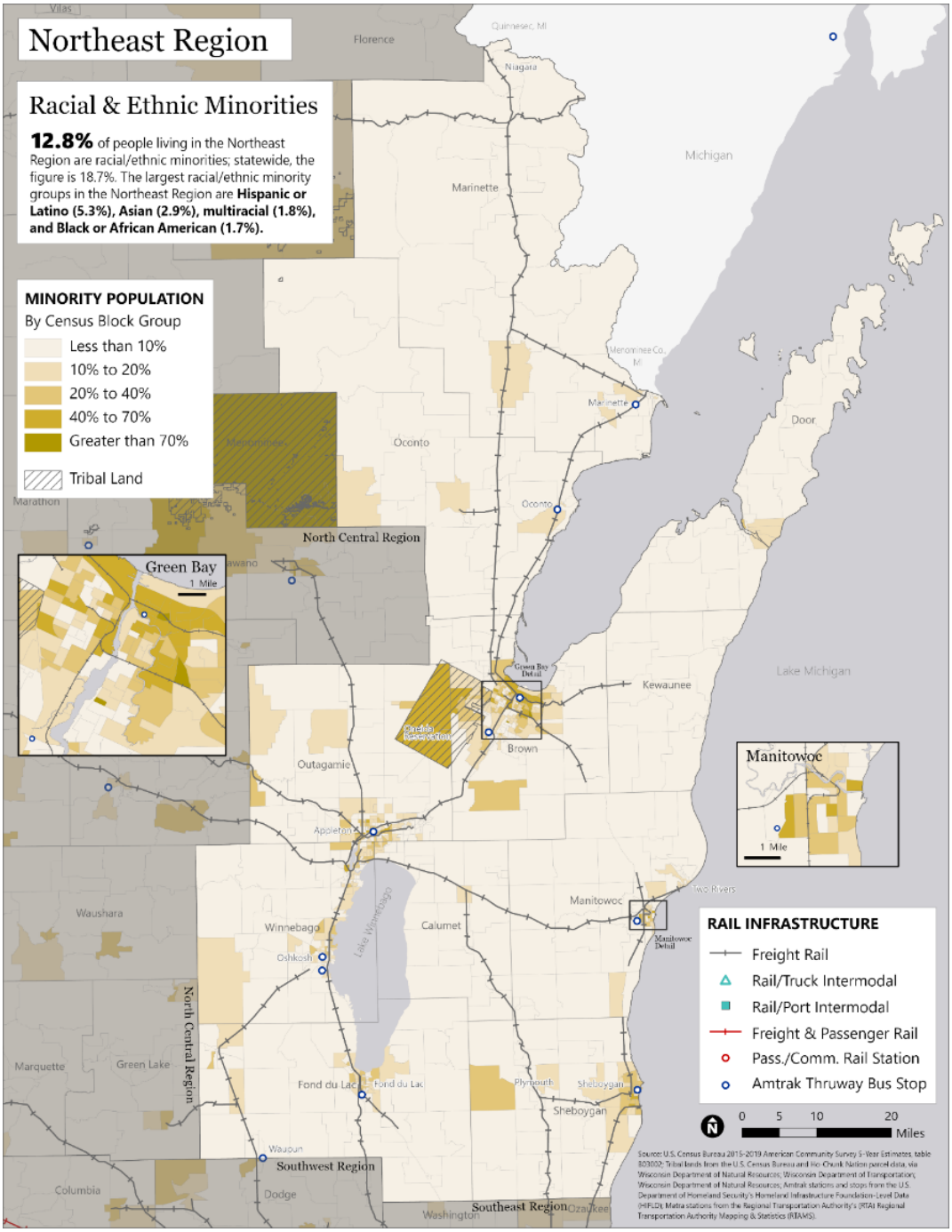
Figure A-19: Zero-Vehicle Households – Northwest Region



Northeast Region

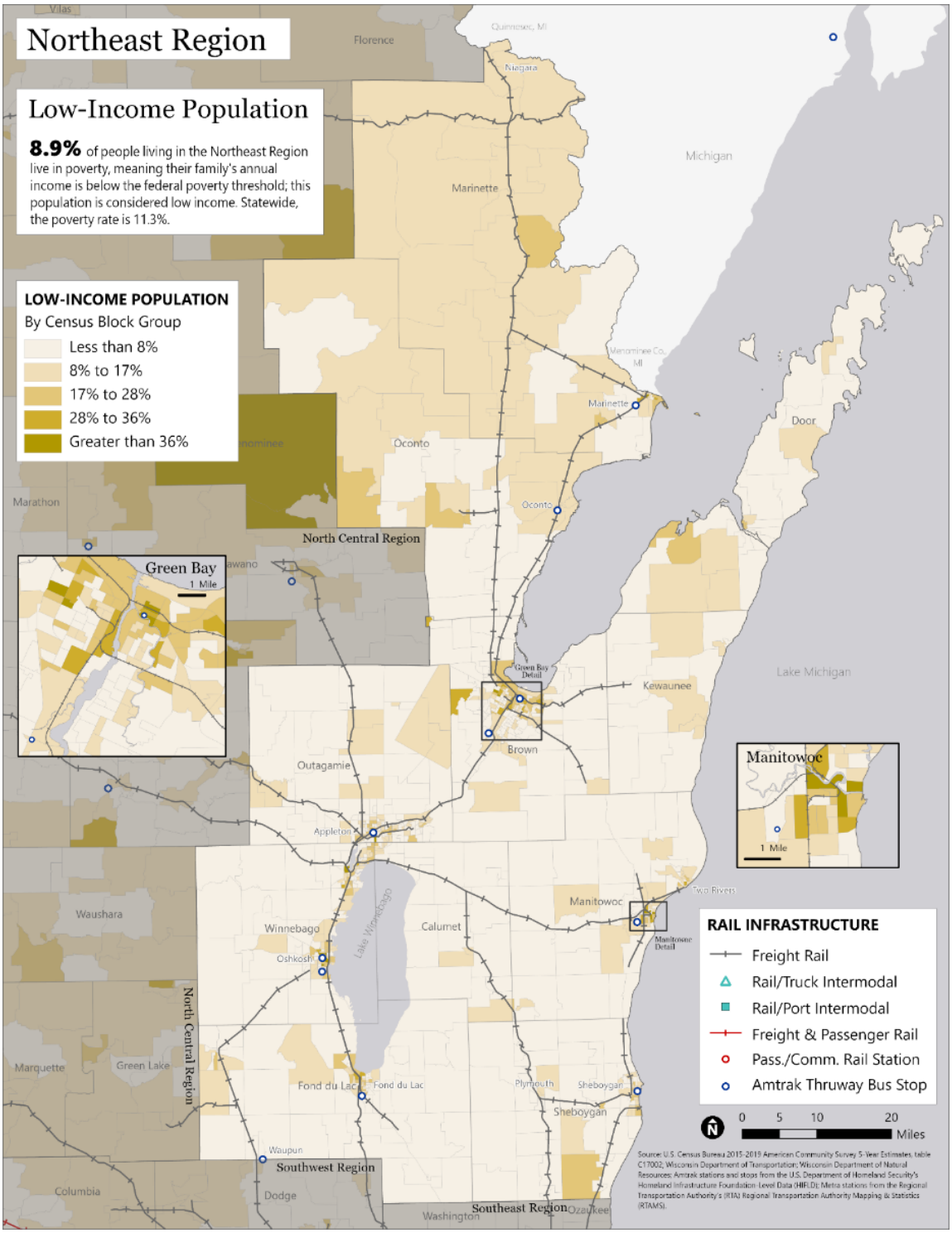
Racial and Ethnic Minority Population

Figure A-20: Racial and Ethnic Minority Population – Northeast Region



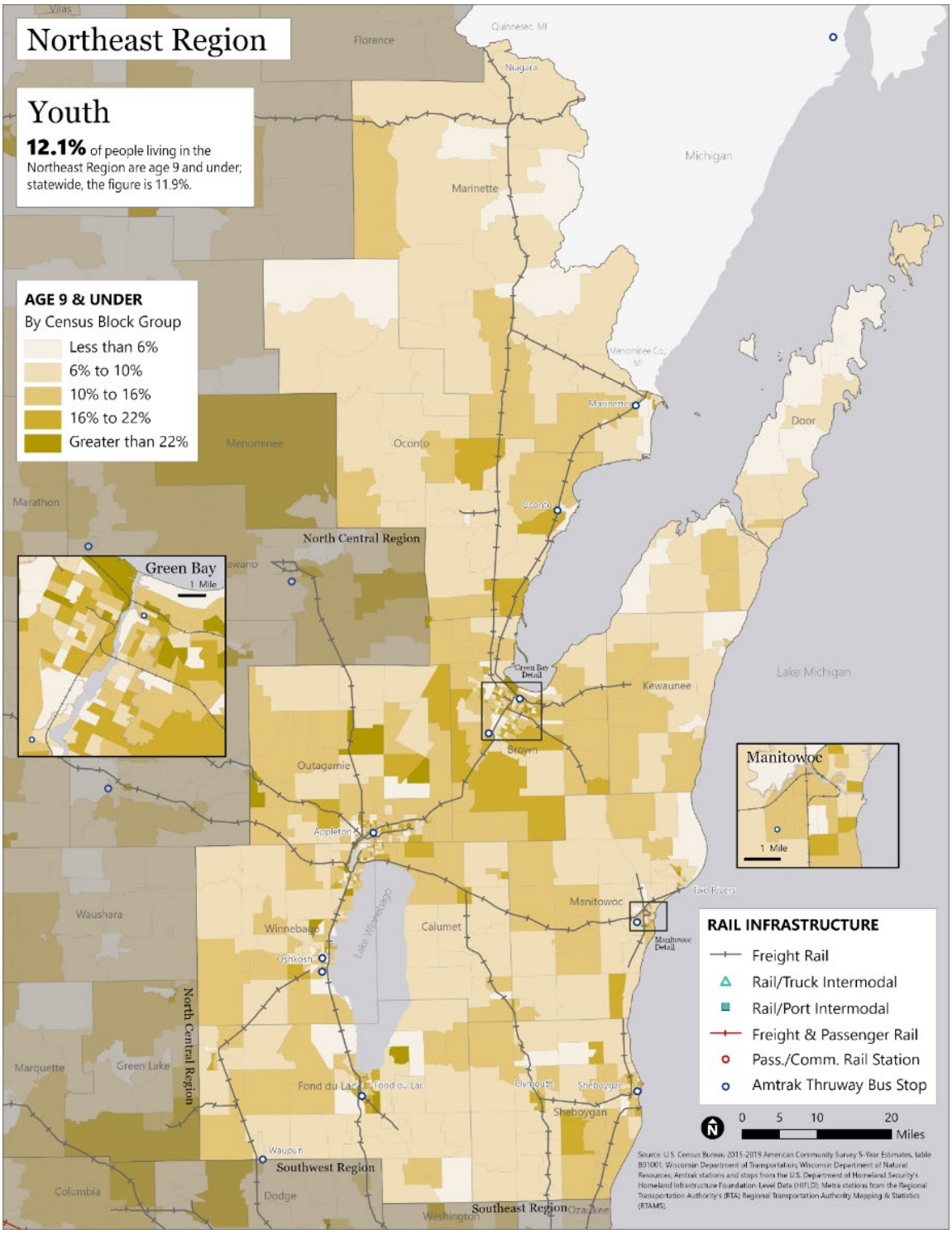
Low Income Population

Figure A-21: Low Income Population – Northeast Region



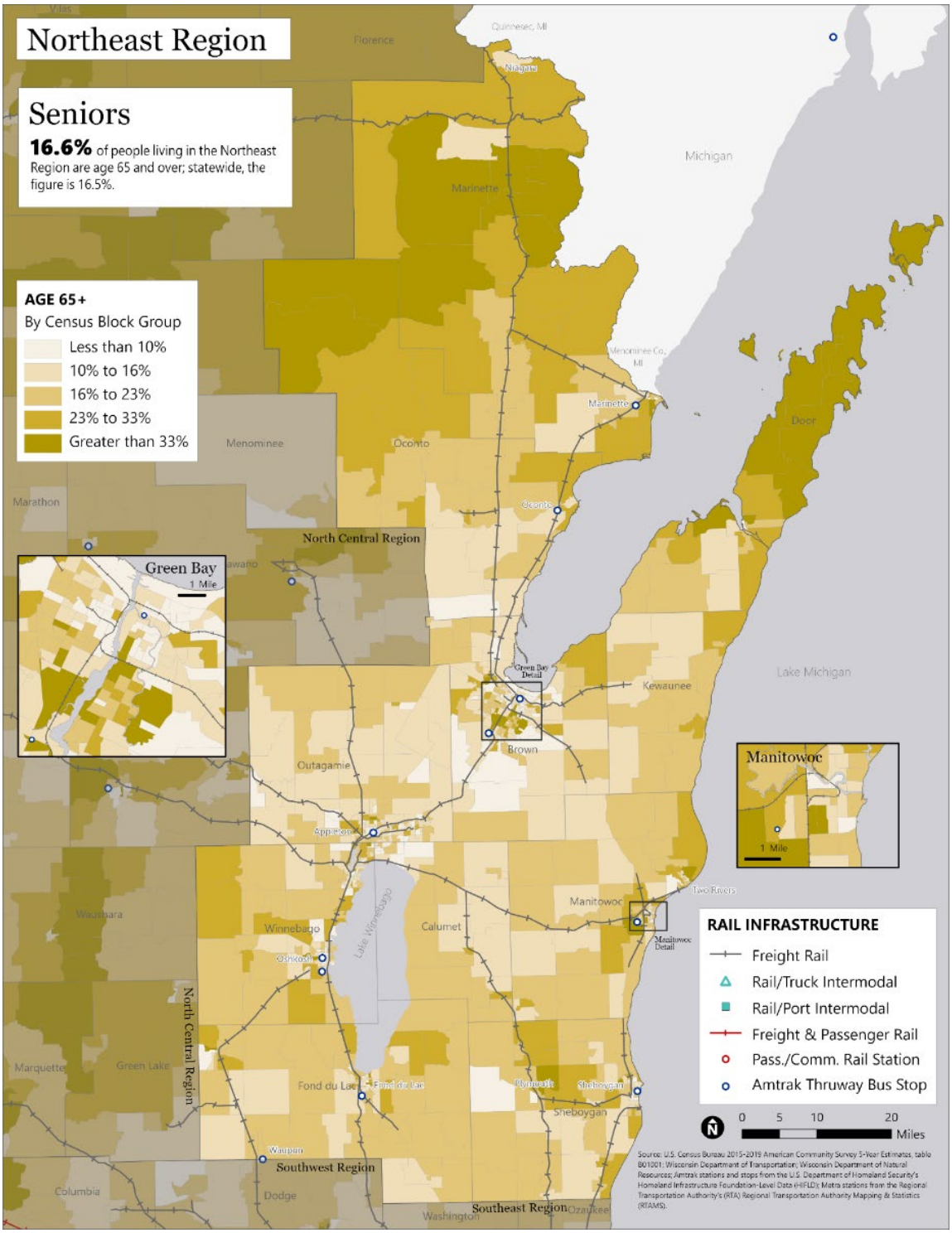
Youth Population

Figure A-22: Youth – Northeast Region



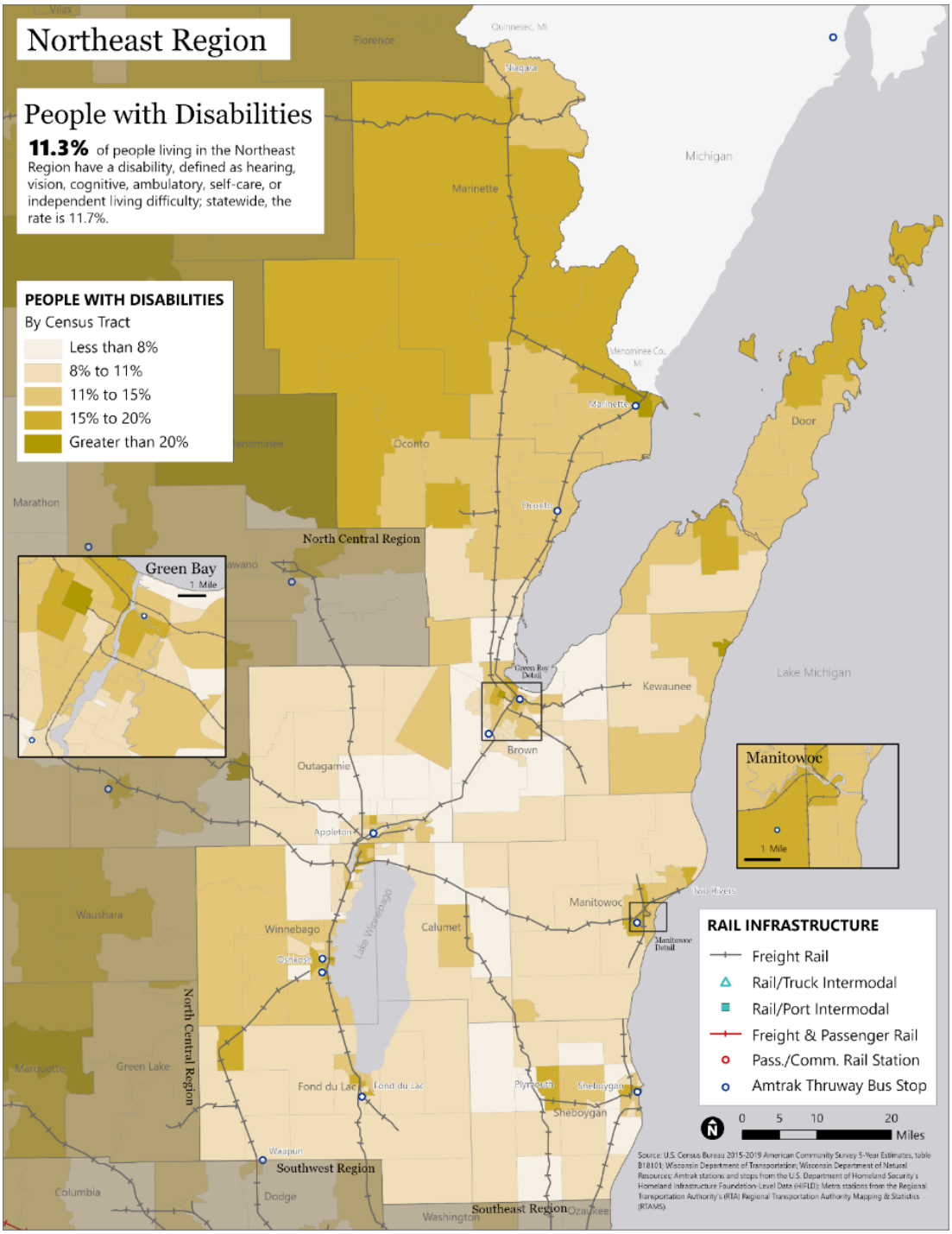
Senior Population

Figure A-23: Seniors – Northeast Region



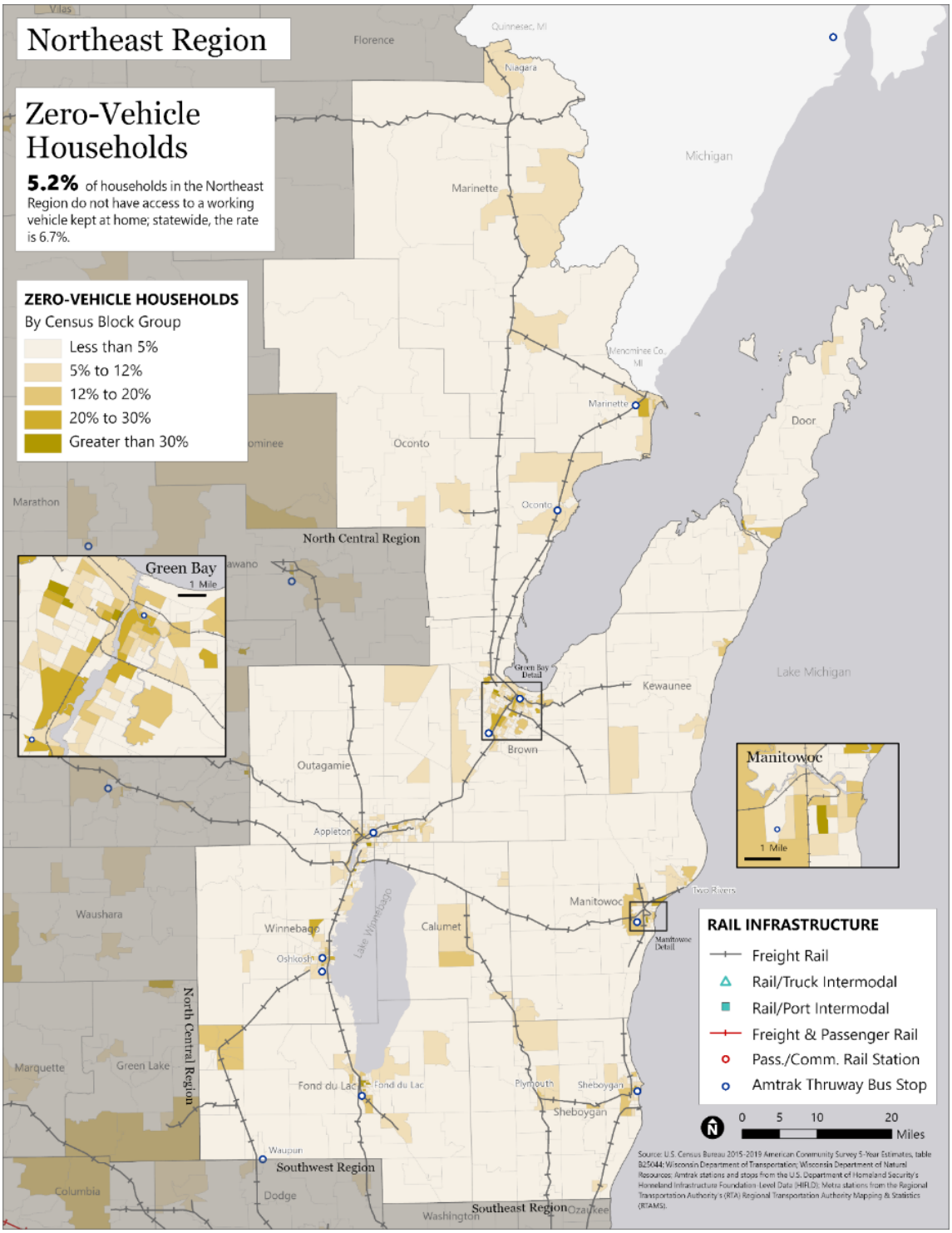
People with Disabilities

Figure A-24: People with Disabilities – Northeast Region



Zero-Vehicle Households

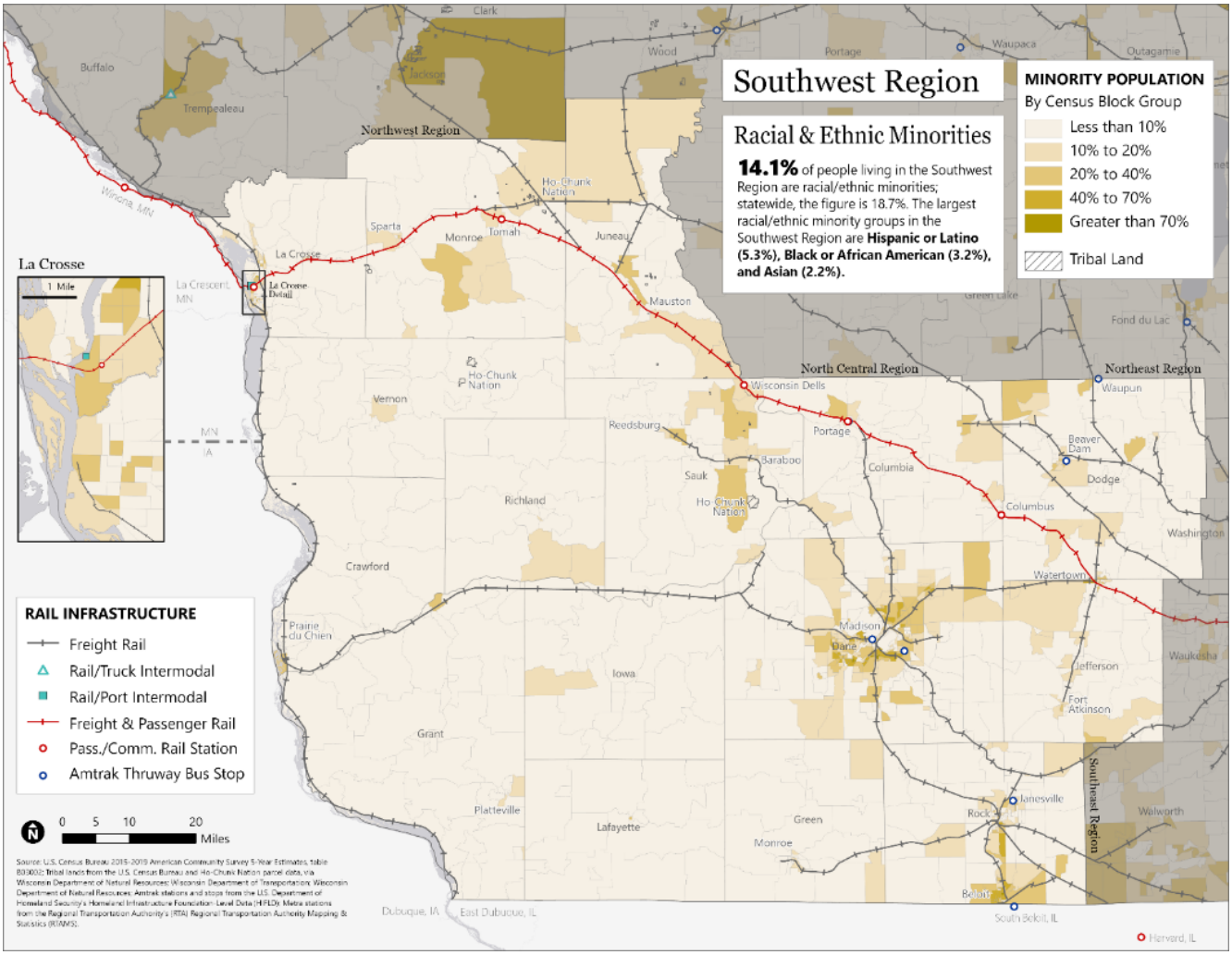
Figure A-25: Zero-Vehicle Households – Northeast Region



Southwest Region

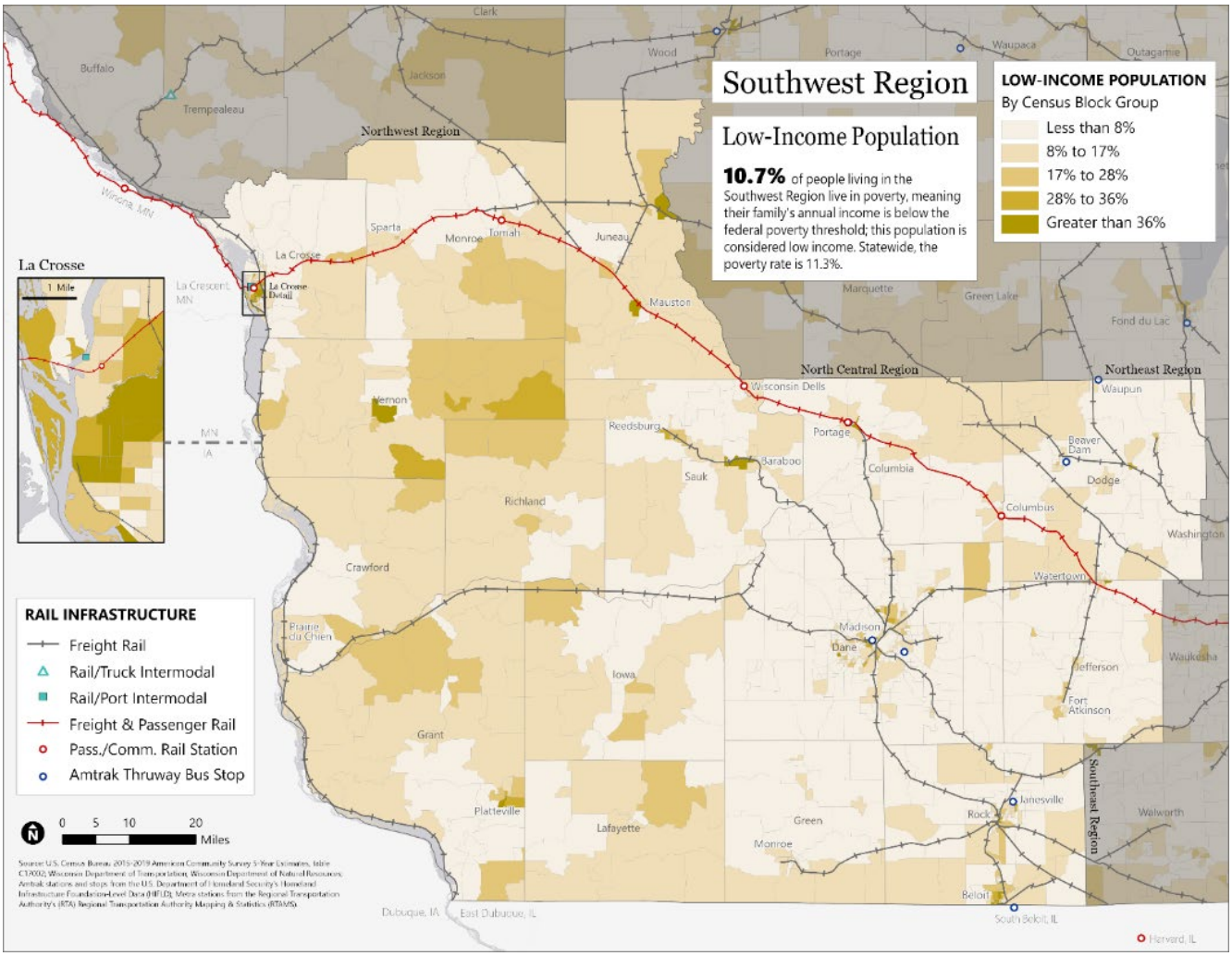
Racial and Ethnic Minority Population

Figure A-26: Racial & Ethnic Minority Population – Southwest Region



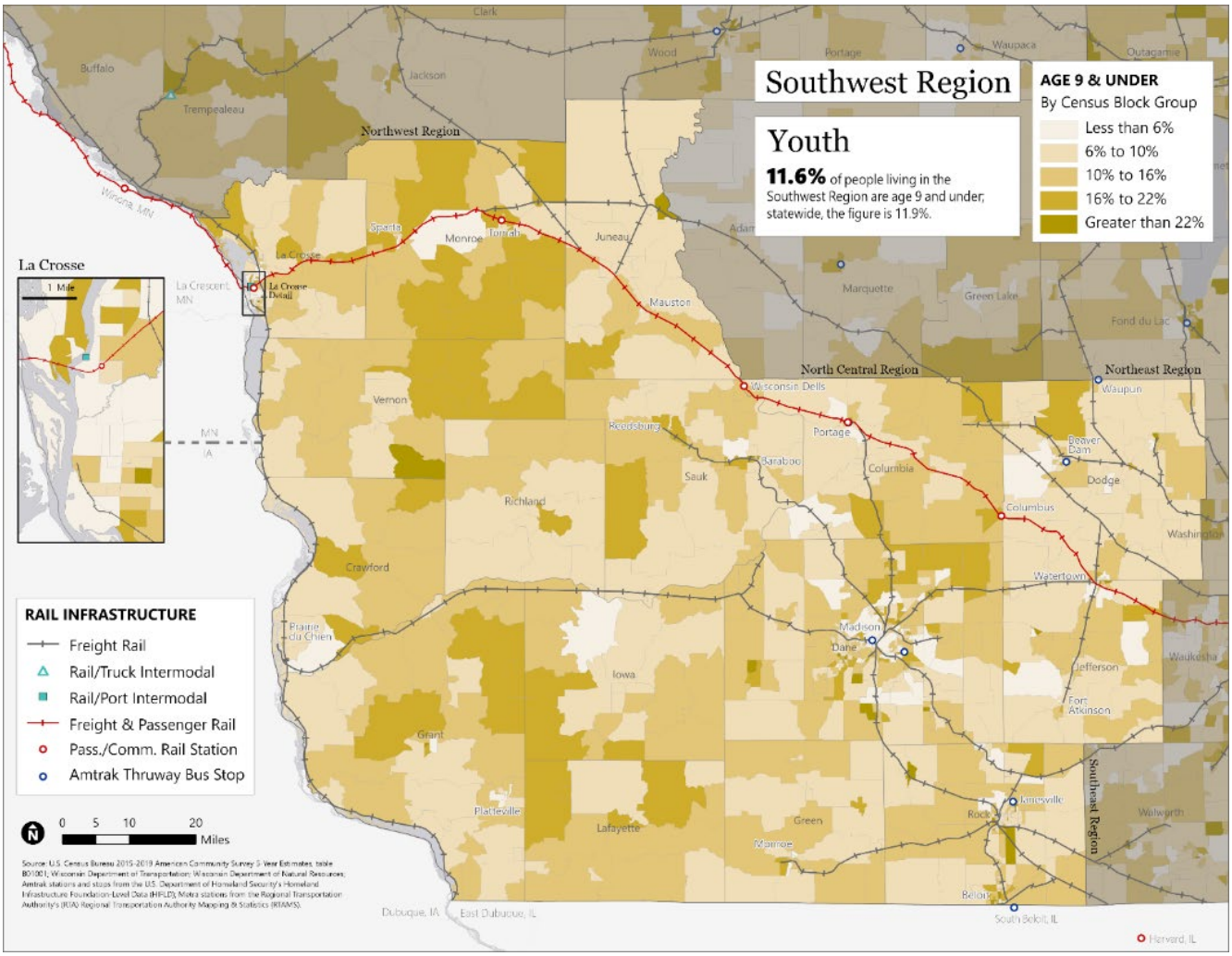
Low Income Population

Figure A-27: Low Income Population – Southwest Region



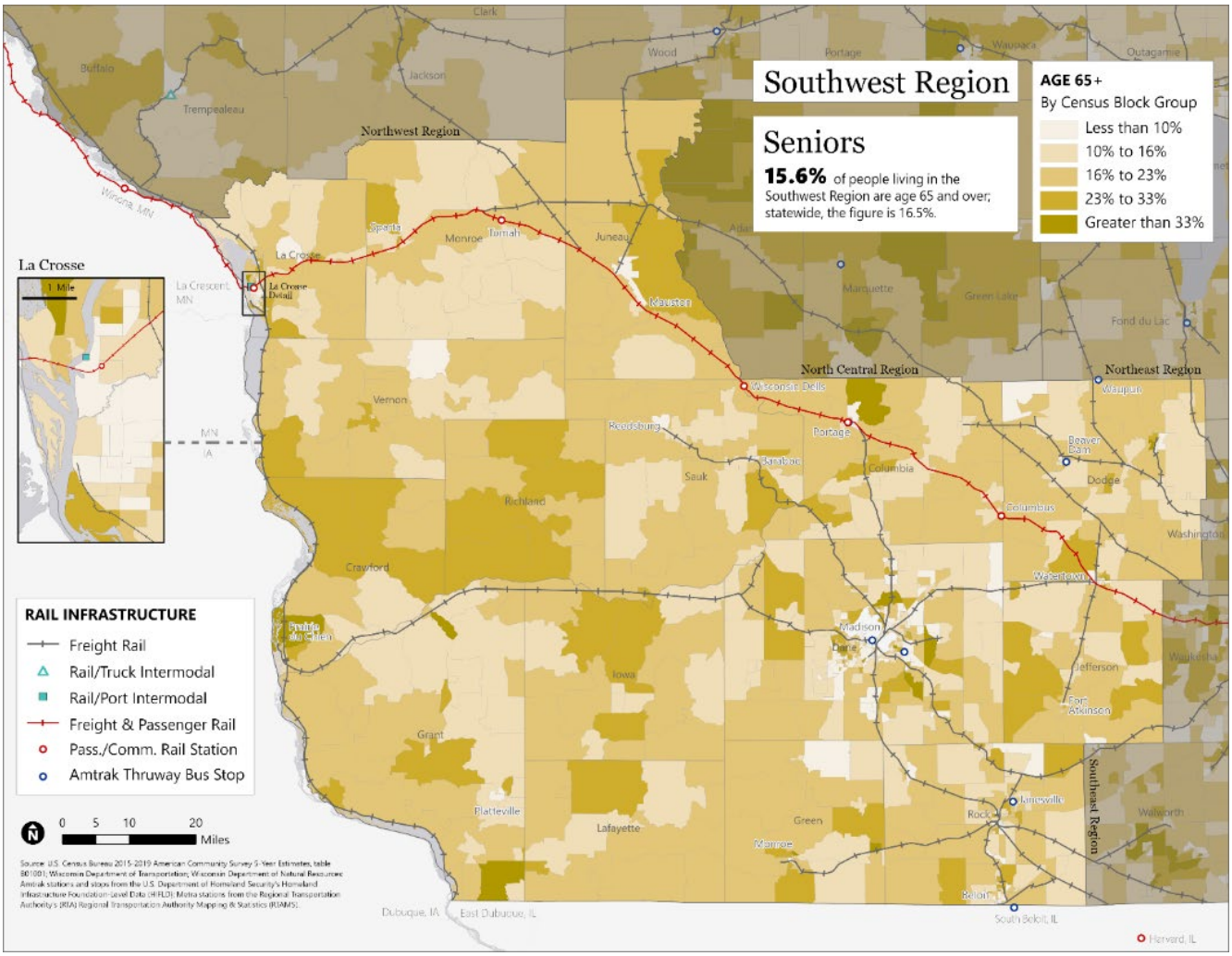
Youth Population

Figure A-28: Youth – Southwest Region



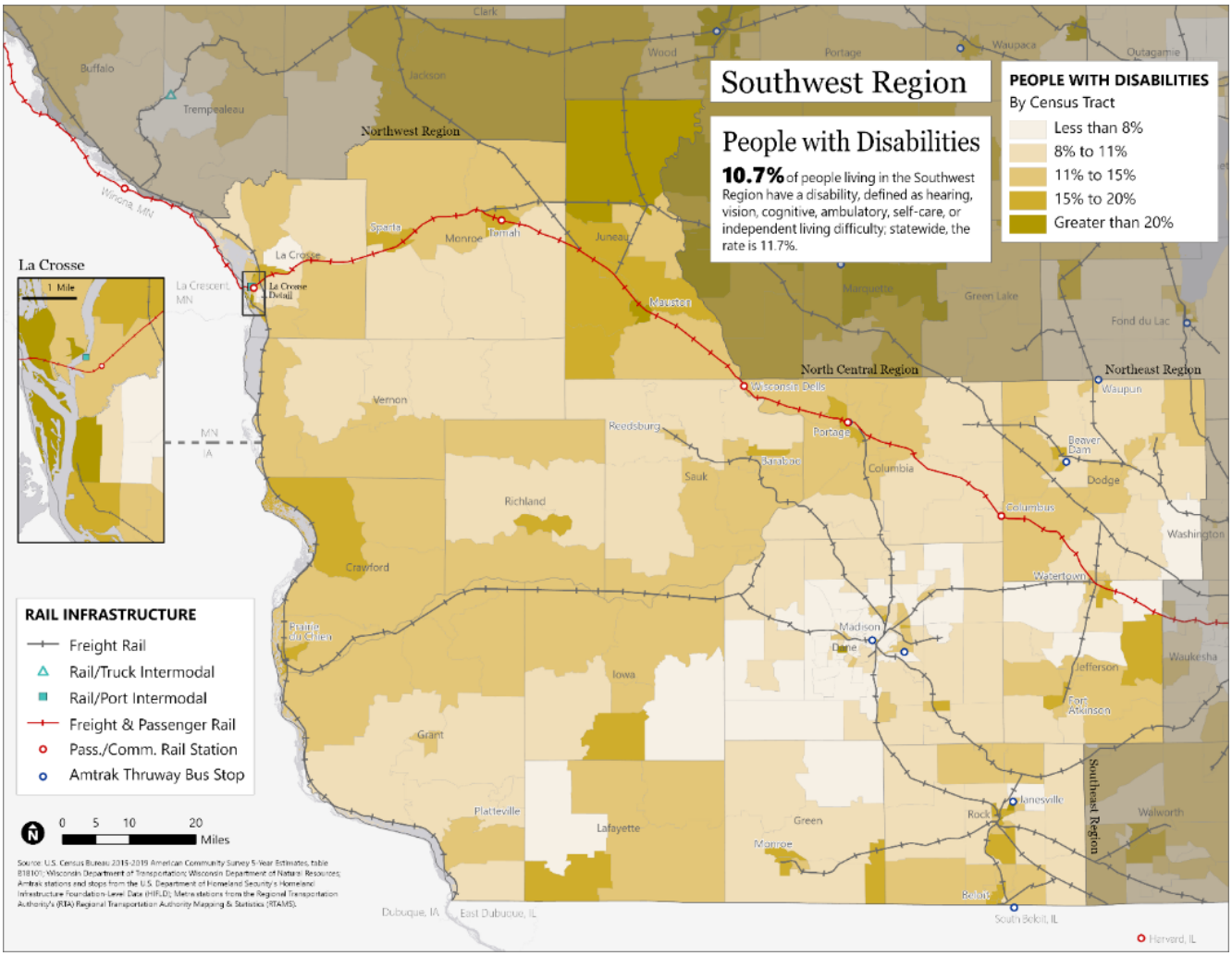
Senior Population

Figure A-29: Seniors – Southwest Region



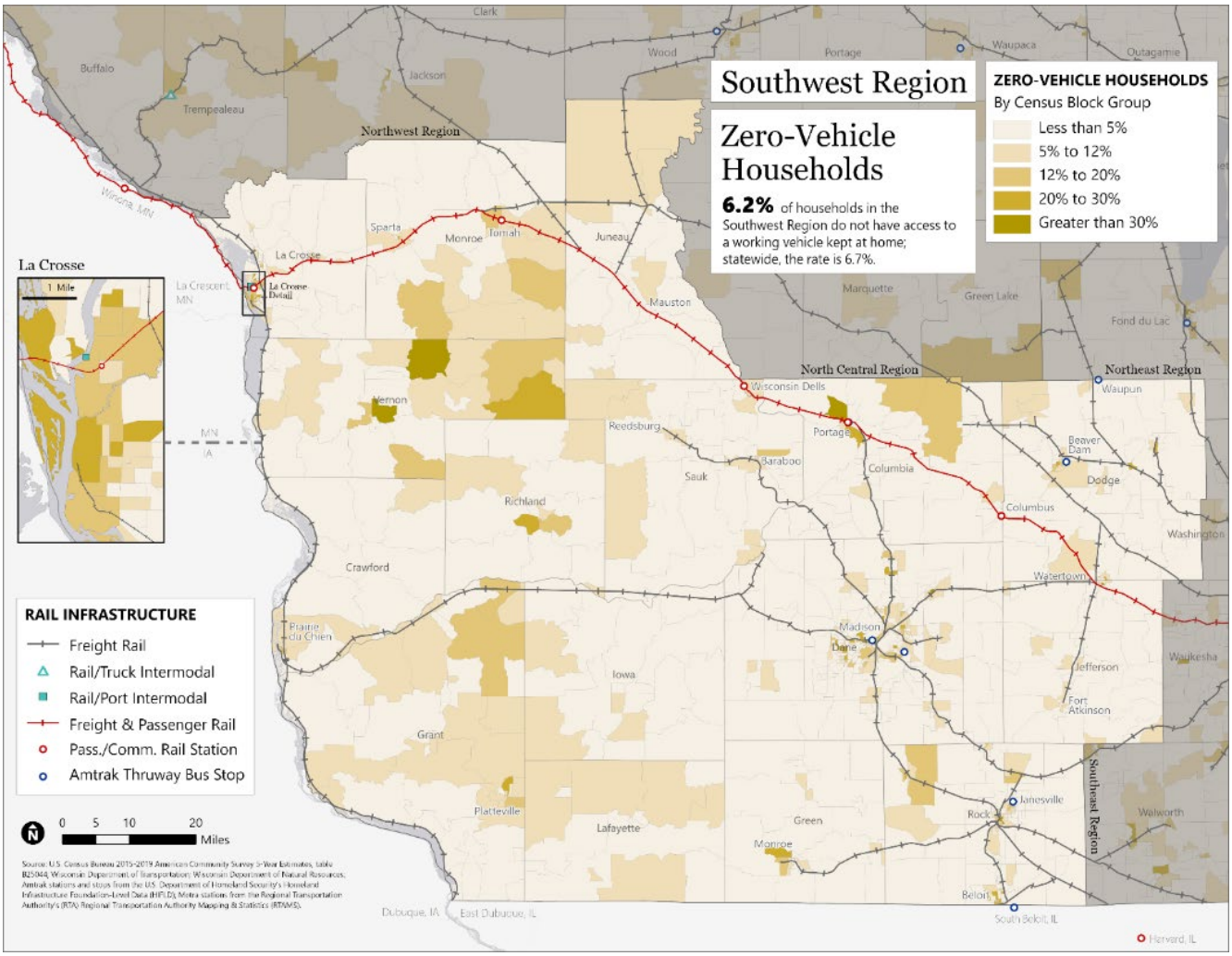
People with Disabilities

Figure A-30: People with Disabilities – Southwest Region



Zero-Vehicle Households

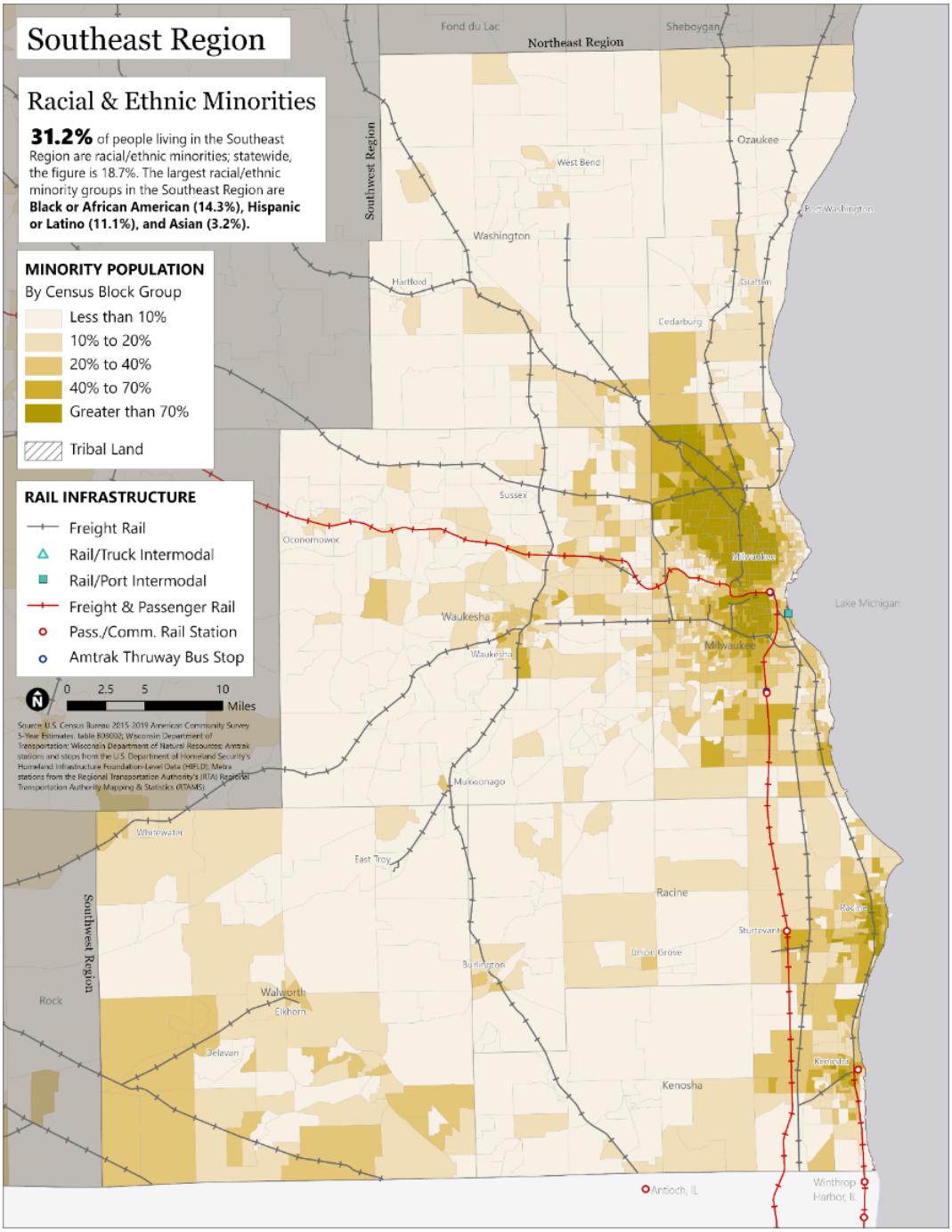
Figure A-31: Zero-Vehicle Households – Southwest Region



Southeast Region

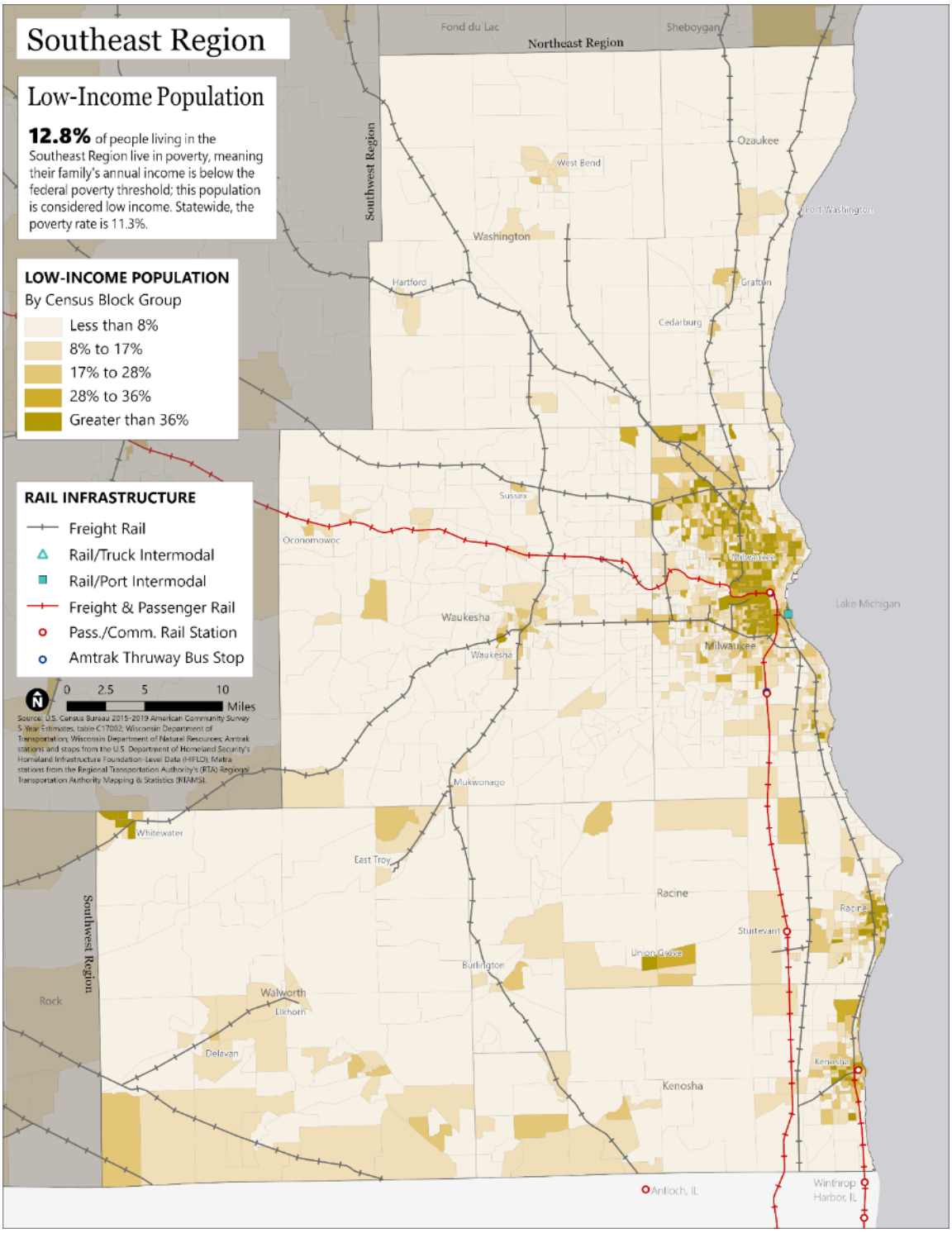
Racial and Ethnic Minority Population

Figure A-32: Racial & Ethnic Minority Population – Southeast Region



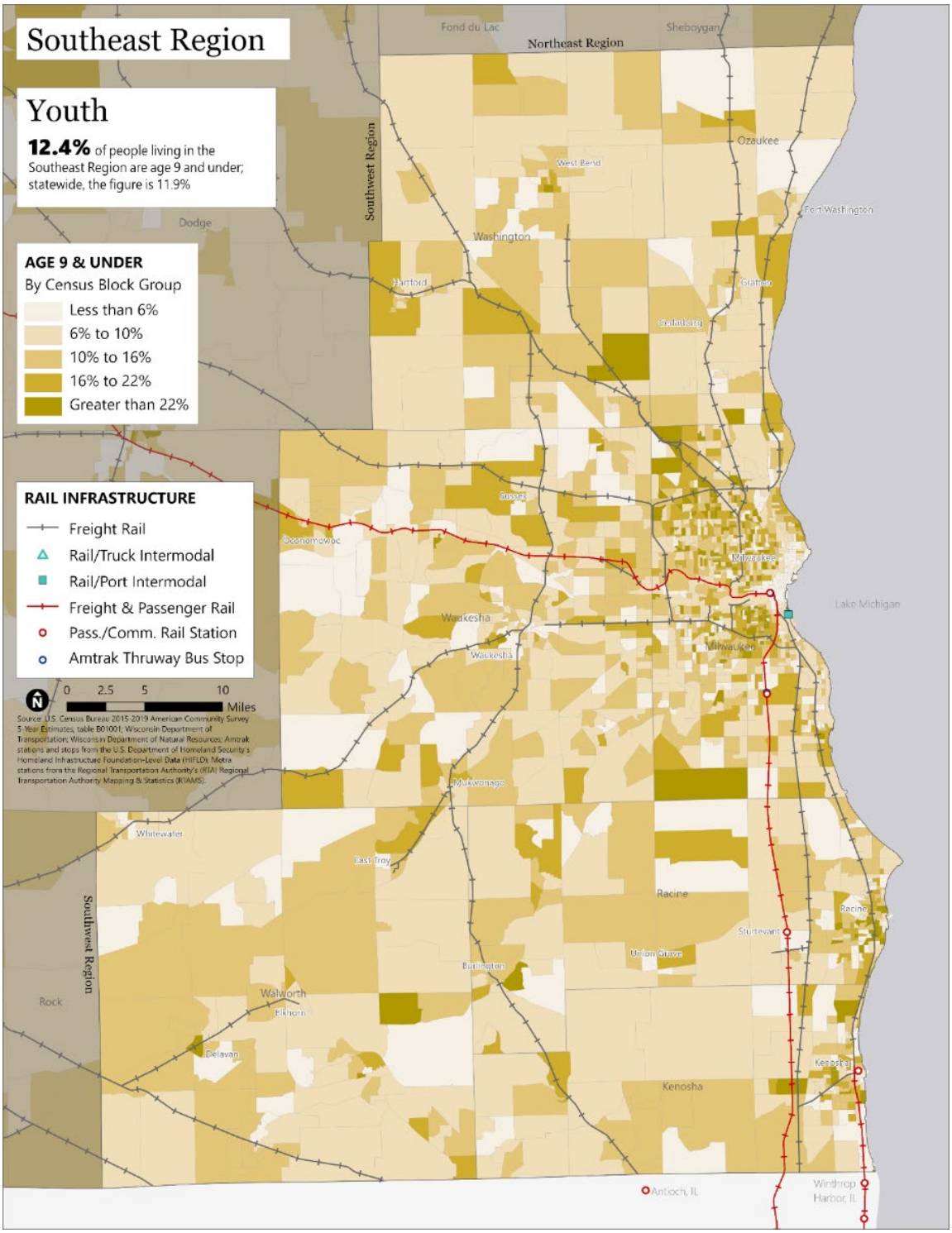
Low Income Population

Figure A-33: Low Income Population – Southeast Region



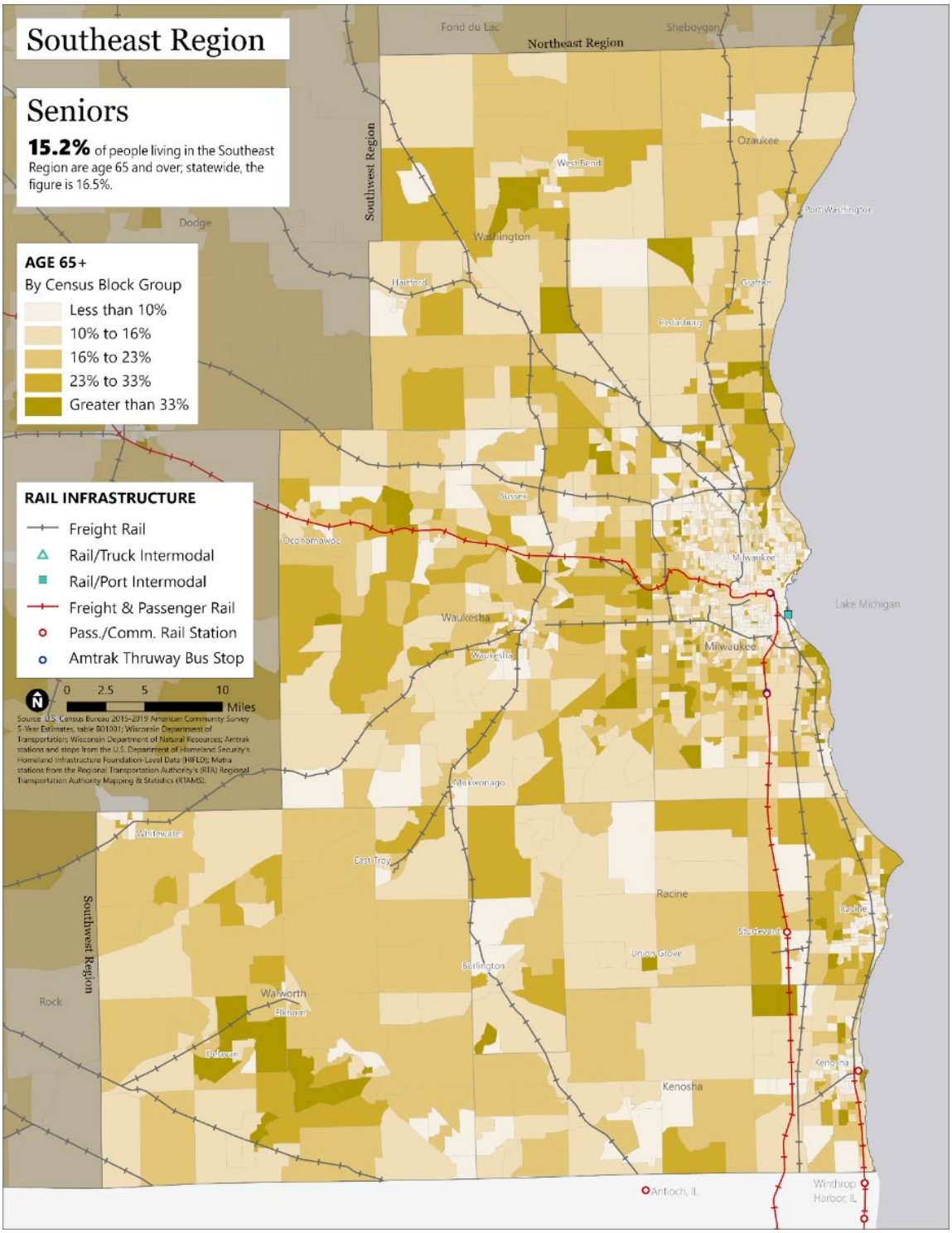
Youth Population

Figure A-34: Youth – Southeast Region



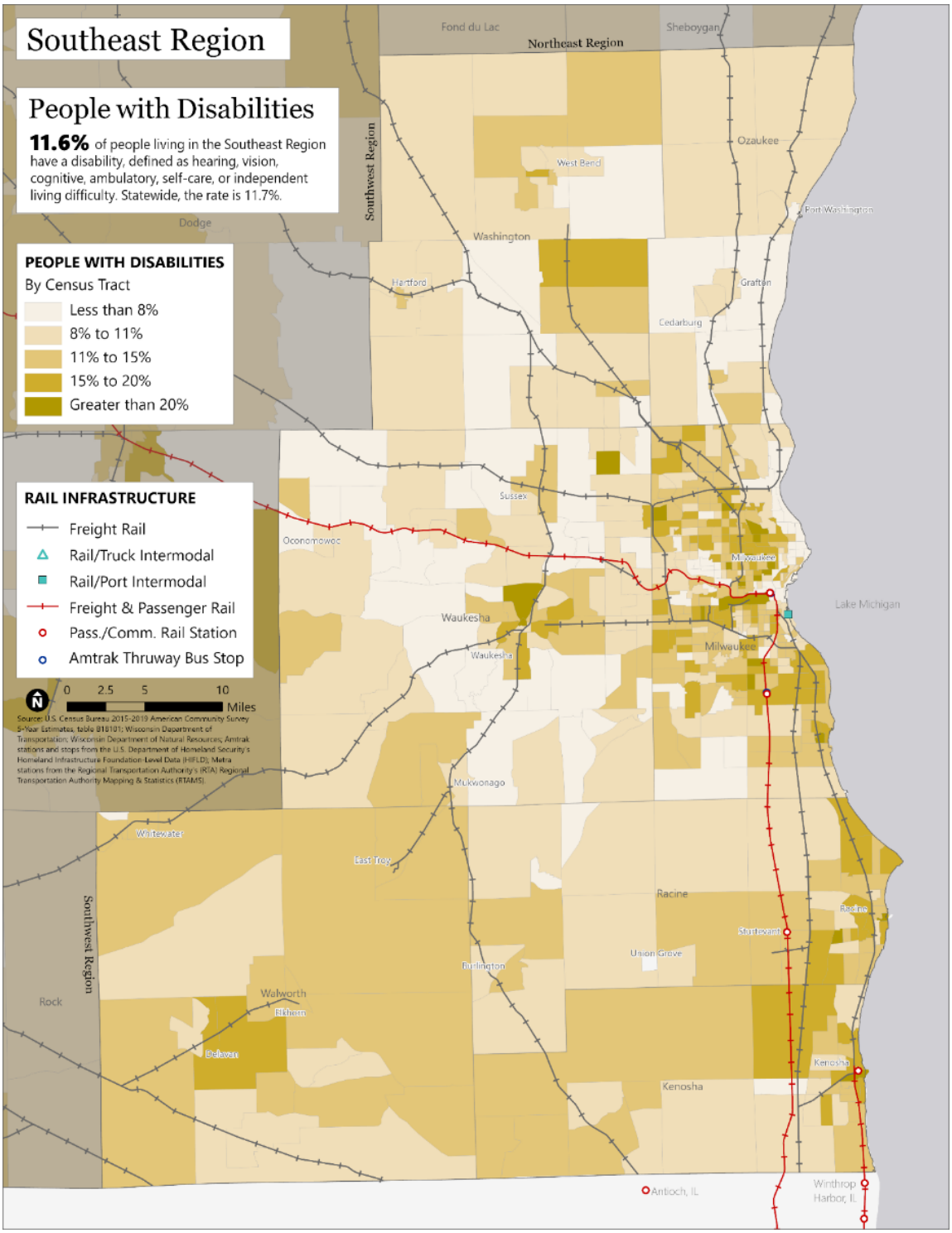
Senior Population

Figure A-35: Seniors – Southeast Region



People with Disabilities

Figure A-36: People with Disabilities – Southeast Region



Zero-Vehicle Households

Figure A-37: Zero-Vehicle Households – Southeast Region

