

CHAPTER 2: Profile of Wisconsin's Transportation System

This chapter provides an overview of Wisconsin's existing transportation network, which includes airports, highways, bridges (state and locally owned), transit, fixed-guideway transit, freight rail, intercity passenger services (including passenger rail and intercity bus), ports and harbors, ferries, and bicycle and pedestrian accommodations.

The sections in this chapter provide a comprehensive inventory of each mode, listing statistics about system use and condition, and assessing key challenges facing different parts of the transportation system.

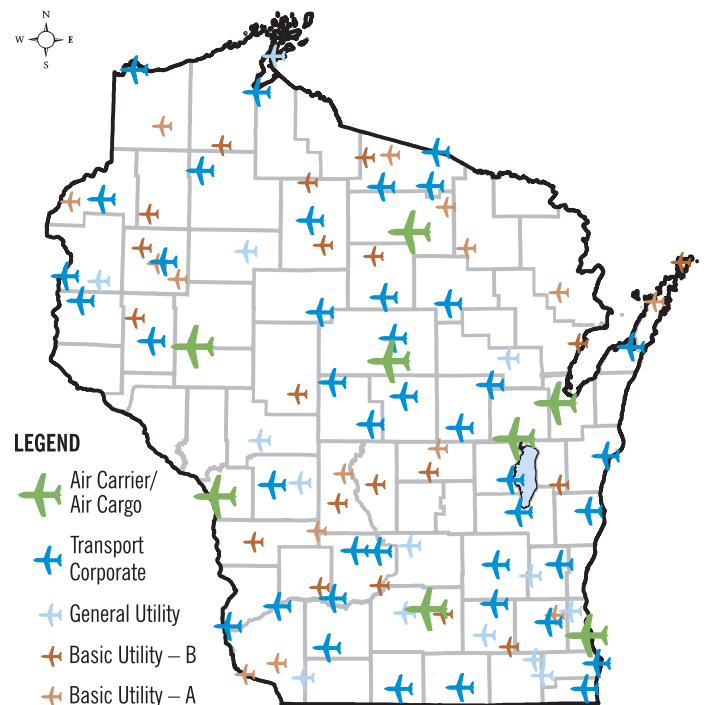
Airports

Wisconsin's public-use airport system includes five types of airport facilities.

- » Air Carrier/Cargo facilities accommodate virtually all aircraft, including commercial jets and military transports
- » Transport Corporate airports serve corporate jets, small passenger jets and cargo jet aircraft used for regional service
- » General Utility airports serve small, general aviation aircraft typically used for business and charter flying and for personal reasons
- » Basic Utility-A and Basic Utility-B airports serve small aircraft used for business and charter flying, as well as for activities such as recreational and sport flying, training, and crop dusting. Basic Utility-B airports can accommodate heavier planes than those served by Basic Utility-A airports

System facts

- » 134 public-use airports in Wisconsin
- » 98 airports in the State Airport System Plan that qualify for state funds (Map 2-1)



▲ Map 2-1: State Airport System Plan airports by airport classification

- » 83 airports listed in the National Plan of Integrated Airport Systems that qualify for federal funds
- » Eight airports classified as “Air Carrier/Air Cargo”
- » One airport provides seasonal passenger service
- » Some airports have intermodal connections
 - Milwaukee (transit, and intercity bus and passenger rail)
 - Madison (transit)
 - La Crosse (transit)
 - Eau Claire (transit)
- » 2007 statistics
 - 11.5 million air passengers
 - 116 million enplaned pounds of air cargo
- » 2030 forecasts
 - 22.9 million passengers (108 percent increase)
 - 260 million pounds of cargo (120 percent increase)



Aviation challenges

- » Forecasted growth may be quickly surpassed as more Wisconsin airports relieve Chicago freight and passenger congestion
- » Heightened airport security and safety
- » Wildlife encroachment on air facility properties
- » Direct passenger service in Wisconsin is limited
- » Incompatible land use around airports
- » Use of corporate jets requiring runway extensions and navigational aids is increasing
- » Funding sources are limited

Highway and local road system

Wisconsin has 122,177 miles of highways and local roadways. The state generally has jurisdiction over the higher-order roads for Interstate and intercity travel that comprise the state trunk highway system. Municipalities are responsible for the local road network that serves short-distance trips. Counties are responsible for county trunk highways, which serve medium-distance trips and provide connections between state trunk highways and local roads.

System facts

- » State trunk highway system (Map 2-2)
 - 11,769 miles of state and Interstate highways handle 60 percent of vehicle miles traveled (VMT)
 - This is 10.3 percent of the total road network
 - The system includes 4,900 bridges (other structures include sign bridges and retaining walls)
 - Annual VMT on state and Interstate highways was 35.5 billion miles in 2007
- » Local road network
 - 102,936 miles of county, town and municipal streets handle 40 percent of the state's VMT
- Approximately 8,800 locally owned bridges are along the state's local road network
- Annual VMT on Wisconsin local roads was 24 billion miles in 2007
- As of 2007, there were 103 scenic country roads designated as part of the Rustic Road System
- » Annual VMT on all roads was 59.5 billion miles in 2007
- » In 2007, Wisconsin had approximately 3.95 million licensed drivers and 5.46 million registered vehicles



▲ Map 2-2: State trunk highway system

Vehicle miles of travel

Vehicle miles traveled (VMT) is defined as the total number of miles traveled in automobiles and other vehicles in a specific area. One vehicle traveling the distance of one mile equals one VMT.

Highway system and local road network challenges

- » Addressing safety and mobility
- » Responding to incidents and emergencies
- » Maintaining conditions at current levels
- » Addressing increased congestion
- » Responding to forecasted increases in truck freight, which is estimated to double by 2030
- » Staying sensitive to environmental factors such as air and water quality
- » Addressing needs of aging population and overcoming language barriers
- » Responding to pressure to increase truck weight and size limits
- » Minimizing potential impact of increased truck size and weight limits on bridges
- » Securing adequate funding
- » Ensuring adequacy of intermodal connectors, including the condition of local roads that are adjacent to major traffic generators or other facilities such as ports
- » Managing highway access (analyzing, limiting and consolidating)
- » Coordinating incompatible land uses and transportation decisions

Transit

Wisconsin's transit system includes local bus and paratransit, commuter bus, subsidized shared-ride taxi service and specialized transit. The provision and maintenance of these transit services generally are under the jurisdiction of local governments.

System facts

- » 71 public bus and shared-ride taxi systems in 2008 (Map 2-3)
- » 81 million unlinked (includes transfers) transit rides in 2007
- » Most transit trips occur on Milwaukee or Madison's local bus systems

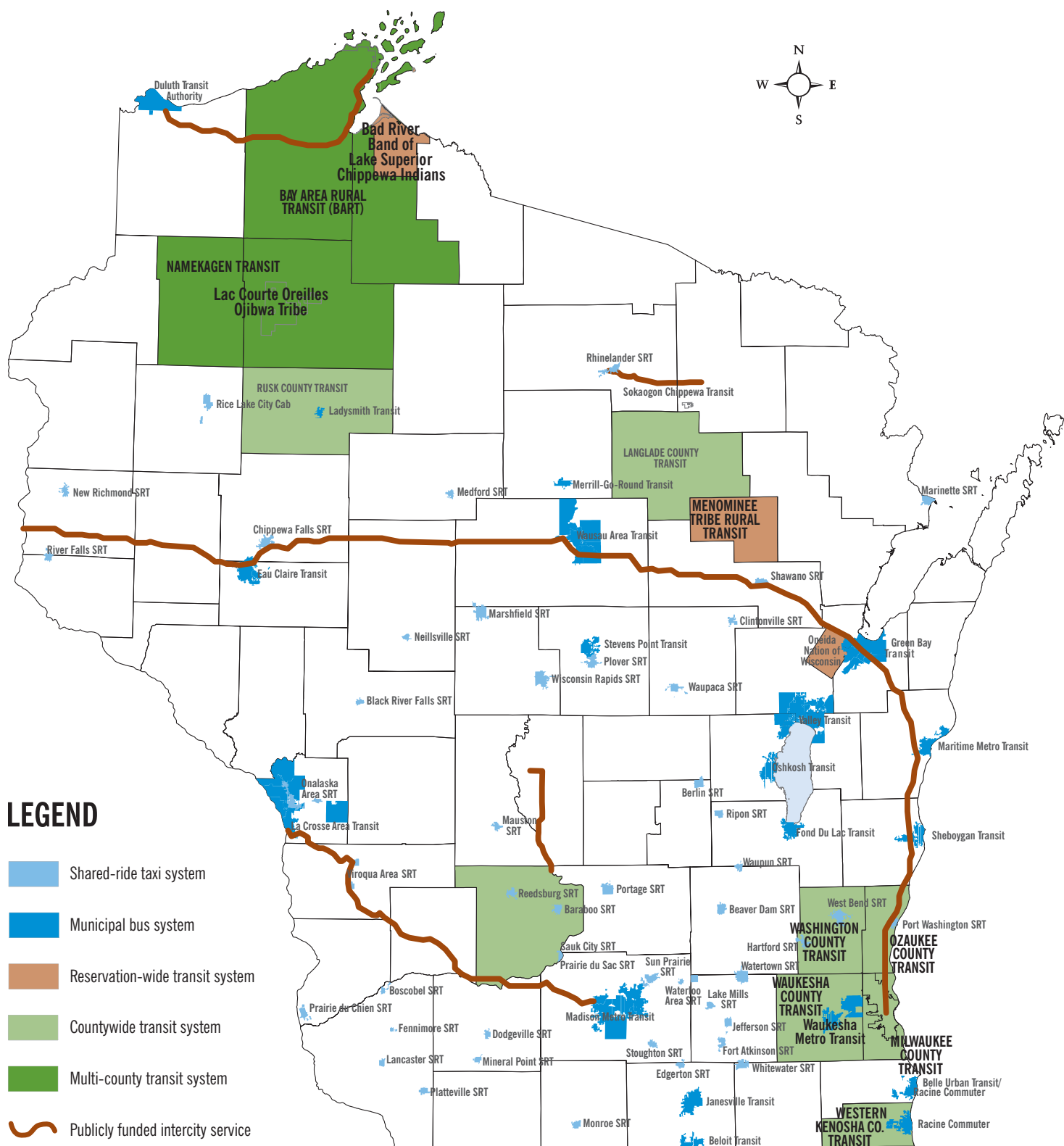
Transit challenges

- » Providing mobility to seniors, low-income households and people with disabilities
- » Coordinating transit services among multiple governmental units, especially in rural areas
- » Creating dedicated local funding sources for transit
- » Meeting service demand across municipal and county boundaries
- » Ensuring adequacy of intermodal connections
- » Responding to deteriorating transit capital. In 2006, 11 percent of transit system vehicles were beyond their useful lives as defined by the Federal Transit Administration, meaning replacements may be needed. The national average in 2006 was 15 percent.



▲ *Figure 2-1: Wisconsin's transit system includes local bus and paratransit, commuter bus, subsidized shared-ride taxi service and specialized transit.*





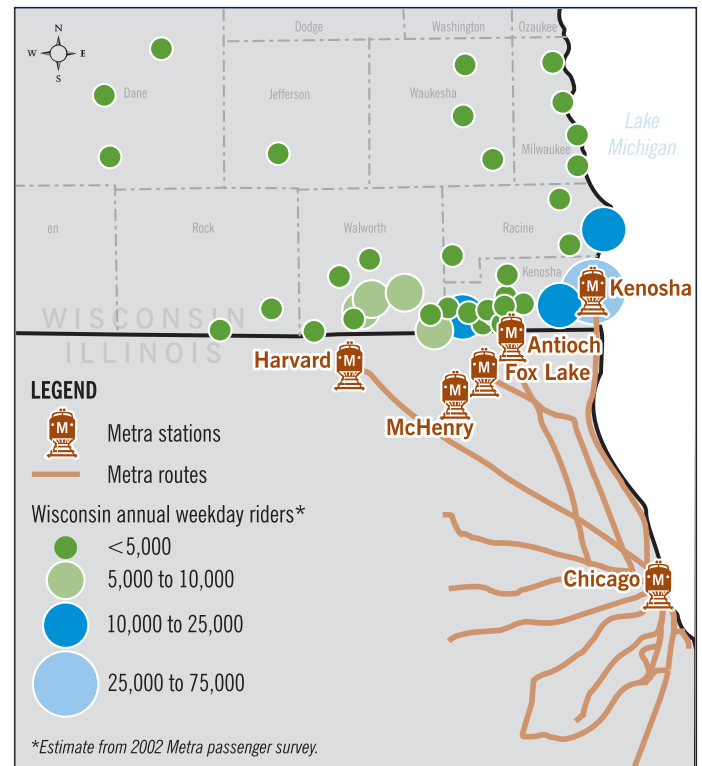
▲ *Map 2-3: Wisconsin's transit systems*

Fixed-guideway transit

Fixed-guideway transit includes commuter rail, light rail and bus rapid transit. It provides travel within a metropolitan region, as well as travel within a municipality.

System facts

- » Wisconsin is served by two fixed-guideway transit systems
 - 1.9 mile streetcar route in Kenosha
 - Metra commuter rail serving communities between Kenosha and Chicago (Map 2-4)
- » Wisconsin helps fund commuter rail studies with local sponsors and support from the federal government
 - In 2003, the state developed a commuter rail grant program to help fund commuter rail studies; funding has increased each budget cycle
- » The 2005-2007 Wisconsin budget created a Regional Transit Authority to study commuter rail service from Kenosha to Milwaukee
- » Potential fixed-guideway projects being studied
 - Transport 2020 (Madison metropolitan area)
 - Kenosha-Racine-Milwaukee commuting corridor
 - Commuter rail service between Rock County, Dane County and Chicago
 - Kenosha streetcar extension
 - Milwaukee Connector (within the city)
- » There is strong support from many business groups for fixed-guideway transit, particularly in southeast Wisconsin



▲ Map 2-4: Wisconsin Metra users by origin
Source: Metra

Fixed-guideway transit challenges

- » Creating dedicated local/regional funding sources and providing state assistance
- » Existing government structures, at all levels of government, are not conducive to administer and fund future fixed-guideway transit, existing bus and shared-ride taxi systems; new legislation and funding sources are needed

Metra

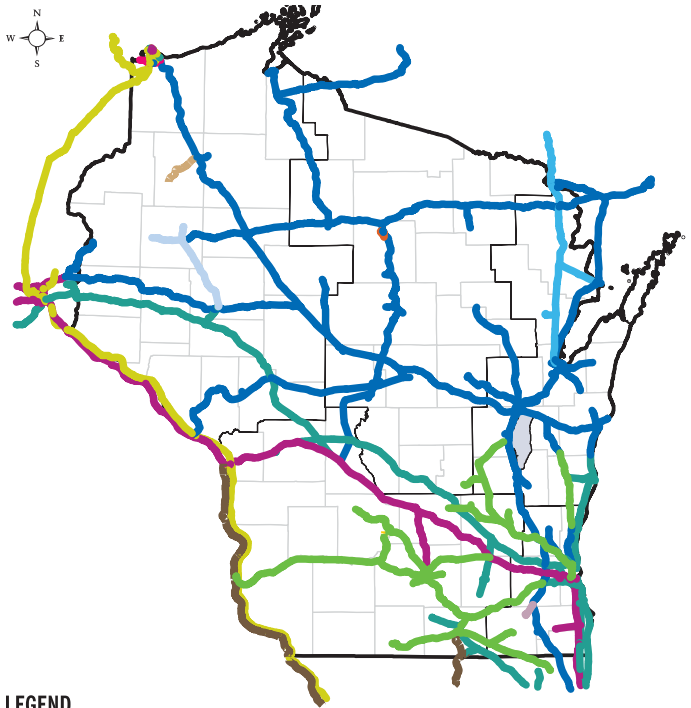
Metra is a commuter rail system that primarily serves the Chicago metropolitan region. The 503-mile system serves 239 stations throughout Cook, DuPage, Lake, Will, McHenry and Kane counties in northeastern Illinois, and it operates one station in Kenosha. Metra provided more than 83.3 million rides in 2007.



Freight rail

Freight rail provides transportation service to manufacturers and industrial users throughout the state. The freight rail system is composed of publicly and privately owned rail lines and serves both long distance and local freight needs.

Many of the state's rail lines are currently operating Class I railroads, which generally provide high-volume, long-haul service. The system also includes short-line or regional operators that connect local manufacturers to the railroad network and provide service for shorter trips.



LEGEND

Burlington Northern-Santa Fe	Municipality of East Troy, Wis., Railroad Co.
Canadian National	Progressive Rail, Inc.
Canadian Pacific Railway (Soo Line Railroad)	Tomahawk Railway
Duluth, Missabe & Iron Range Railway Co.	Union Pacific Railroad
Escanaba & Lake Superior	USGOV (publicly owned, no operator)
Iowa, Chicago & Eastern Railroad Corp.	Wisconsin Great Northern
	Wisconsin & Southern Railroad Co.

▲ Map 2-5: Wisconsin railroads by operator

System facts

- » Total rail network includes 3,500 miles, 477 miles of which are publicly owned and operated, primarily by Wisconsin and Southern Railroad Co.
- » Wisconsin has 7,300 public and private railroad-highway crossings
- » 12 freight railroad companies operate in Wisconsin (Map 2-5)
- » 77 percent of network is operated by Class I railroads; 23 percent of state's rail mileage is operated by short-line or regional railroads
- » 190 millions tons of freight were transported in 2004
- » Ports in Milwaukee, Superior, Ashland, Marinette, Green Bay, Manitowoc, Sheboygan, Prairie du Chien and La Crosse have freight rail access
- » Arcadia and Milwaukee have truck-rail intermodal connection
- » Coal is the top shipped commodity shipped by rail
- » By 2035, freight rail tonnage shipped to and from Wisconsin is forecast to nearly double¹

Freight rail challenges

- » Preserving local rail service
- » Preserving abandoned corridors
- » Improving intermodal connections
- » Funding track upgrades on publicly owned lines to meet market standards for heavier railcars
- » Addressing security in rail yards

¹ Freight Analysis Framework^{2,2}, Office of Freight Management and Operations, Federal Highway Administration



▲ Figure 2-2: Amtrak operates two passenger rail lines in Wisconsin.

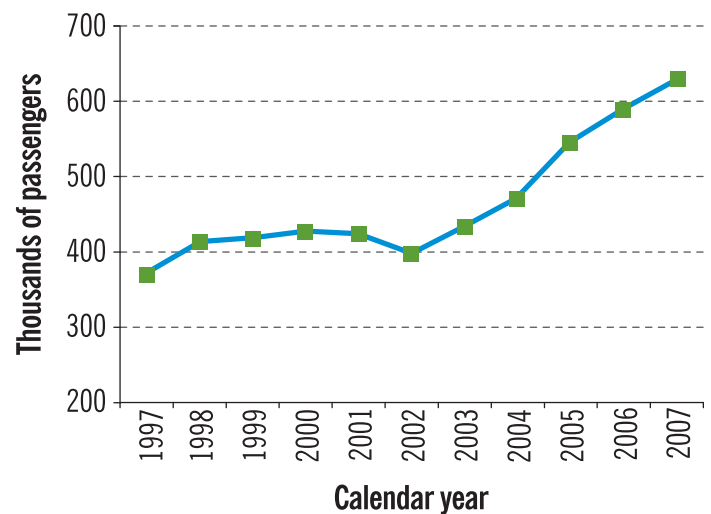
- » Coordinating passenger rail and freight rail
- » Coordinating shipping companies and freight rail
- » Addressing crossing safety and closures
- » Addressing weight limits on publicly-owned track
- » Minimizing trespassing

Intercity passenger rail

Two passenger rail lines and eight stations serve the state. Amtrak provides passenger rail service on the *Hiawatha* and the *Empire Builder* lines (Map 2-6). Additional routes are being studied for the proposed Midwest Regional Rail System.

System facts

- » Hiawatha Service
 - Passenger rail service between Milwaukee and Chicago has been operated by Amtrak under contract with Wisconsin and Illinois since 1989
 - Seven round-trips run daily (six on Sundays), the most of any Amtrak route outside the east and west coasts
 - Service operates on Canadian Pacific and Metra right of way

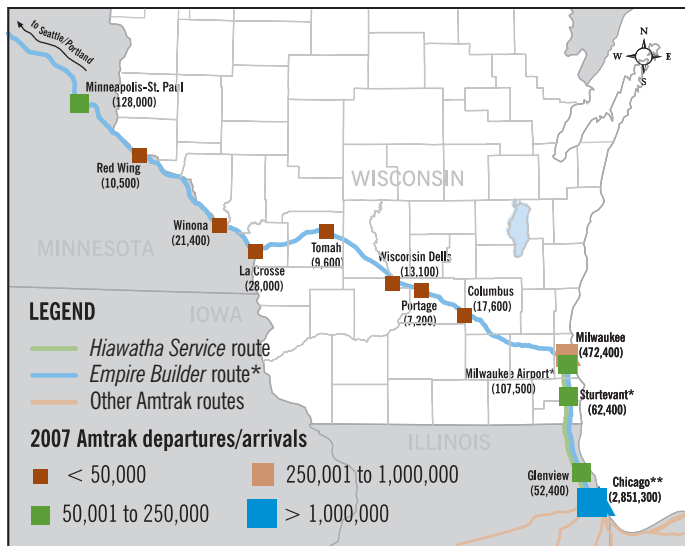


▲ Figure 2-3: Amtrak's Hiawatha Service ridership

- Has the best on-time performance of the national Amtrak system: 89 percent in 2007 federal fiscal year
- Travel time between downtown Chicago and downtown Milwaukee is one hour and 29 minutes
- Amtrak throughway feeder bus service operates between Wausau and Milwaukee, and between Houghton, Mich., Green Bay, Manitowoc, Sheboygan and Milwaukee
- Route has seen a 67 percent ridership growth during past 10 years (Figure 2-3)



▲ Figure 2-4: The Milwaukee Intermodal Station provides intercity bus and intercity passenger rail service.



*Empire Builder does not stop in Sturtevant or at General Mitchell International Airport.

**Chicago total includes departures/arrivals from other Amtrak routes.

▲ Map 2-6: Wisconsin Amtrak rail routes and ridership

- 2007 ridership was an all-time high of 617,800 trips
- Additional car was added to each train in 2007 to meet rising demand
- » Empire Builder Amtrak service between Chicago and Seattle, and Portland

- Part of Amtrak's national network
- One round-trip daily
- 2007 ridership was 94,800 trips to and from Wisconsin stations
- » Passenger rail stations
 - Milwaukee's General Mitchell International Airport Rail Station
 - One of four Amtrak stations nationwide located at a major airport
 - 2007 Amtrak ridership to and from airport rail station was 107,500 trips
 - Has received \$6.8 million in federal and state funding for design and construction
 - Milwaukee's Intermodal Station
 - Newly remodeled station opened in November 2007
 - Includes passenger rail and intercity bus services
 - 2007 Amtrak ridership to and from the intermodal station was 472,400 trips
 - Demonstrated a \$20.2 million public-private partnership to design and build
 - New Sturtevant Depot
 - Opened August 2006
 - Served by Racine's transit system
 - 2007 Amtrak ridership to and from Sturtevant was 62,400 trips
 - Received \$2.4 million in federal, state and local funds

Intercity passenger rail development

Wisconsin has partnered with other states and Amtrak in an effort to better link major Midwestern cities via a 3,000-mile intercity passenger rail system called the Midwest Regional Rail System. Wisconsin recently conducted activities to advance the Midwest Regional Rail System development:

- » Completed an environmental assessment of the Milwaukee-Madison component of the system and received a finding of no significant impact from the Federal Railroad Administration
- » Purchased the Madison-Watertown line in 2007 for \$7 million to continue development of the system
- » Upgraded grade crossings along proposed system routes using \$4.2 million in federal funding

- » Partnered with Canadian Pacific Railway in a \$2 million advanced train control project

Passenger rail challenges

- » Passenger and freight rail services use the same infrastructure
- » High-quality Amtrak service requires continued schedule coordination with Canadian Pacific Railway and Metra
- » Amtrak's Hiawatha Service requires continued financial support from Wisconsin and Illinois
- » Infrastructure investments are needed to ensure that improved passenger rail service does not negatively impact Wisconsin's freight rail service
- » Some stations lack adequate passenger facilities
- » Hiawatha Service train equipment is aging; replacements with modern amenities and improved performance characteristics are needed
- » Providing and maintaining adequate connectivity with other modes
- » Frequent passenger rail service exists only in southeast Wisconsin; other populous and fast-growing areas do not have this level of service
- » Considerable federal and state funding sources must be identified before implementing improved intercity passenger rail service in Wisconsin

Intercity bus

Intercity bus service in Wisconsin is privately owned and operated by several carriers that provide service among cities.

System facts

- » As of 2007, eight intercity bus companies operate in the state: Greyhound, Badger Coaches, Lamers, Megabus, Wisconsin Coach Lines/Coach USA, Van Galder/Coach USA, Jefferson Lines and Indian Trails
- » All services are privately owned and operated
- » As of 2007, intercity bus operators provided scheduled service to 53 communities (Map 2-7); some communities receive only commuter services or limited non-daily service
- » The Madison-La Crosse route operated by Jefferson Lines is subsidized by the Federal Transit Administration's Section 5311 program funds, which cover 50 percent of the operating loss of this route
- » A new Minneapolis/St. Paul-Eau Claire-Wausau-Green Bay-Sheboygan-Milwaukee route starting in 2008, and operated by Jefferson Lines, is supported by funds from the federal pilot Supplemental Transportation Rural Assistance Program funds. These funds cover up to 80 percent of the operating loss of the route

Non-Urbanized Area Formula Program (Section 5311)

The Federal Transit Administration's Section 5311 program provides funding for public transportation in nonurbanized areas. The Federal Transit Administration distributes these grants to states according to a statutory formula based on each state's population in rural areas and in small urban areas with fewer than 50,000 people. Section 5311 grants are intended to provide residents of these areas with access to employment, education, health care, shopping and recreation.

~ www.fta.dot.gov/funding/data/grants_financing_1111.html





▲ Map 2-7: Current intercity bus network

Intercity bus challenges

- » Extremely long intercity bus travel times between some of Wisconsin's largest metropolitan areas (for example, a trip between Wausau and Madison, which is a 143-mile distance, takes almost seven hours and requires a transfer in Milwaukee)
- » Fewer routes serving fewer communities due to Greyhound's decision to abandon some routes
- » Infrequent service (some routes have only one daily round trip or less)
- » Lack of adequate station facilities in some areas (for example, there is a lack of restrooms, or some stations are closed in early mornings or late evenings)
- » Lack of intermodal connections that link intercity bus services to some rail stations, airports, park-and-ride sites and local transit

- » Limited service to transit-dependent and university-based populations
- » Lack of affordable, convenient, alternative modes between key destinations (for example, no alternative is available between Janesville or Beloit and Milwaukee without transfer through Madison or Chicago)
- » Need for a feeder bus system with service to MWRRS stations
- » Limited federal funds for supporting intercity buses
- » Lack of data on intercity bus ridership, revenue and cost for statewide planning
- » Lack of intercity bus service in the northern half of Wisconsin

Ports and harbors

Wisconsin has 15 ports that handle millions of tons of international and domestic cargo each year. Many commodities ship through the ports including agricultural products, coal, iron ore, wood pulp, cement and road salt.

System facts

- » 15 ports include:
 - Six gateway ports: Milwaukee, Green Bay, Marinette, Duluth-Superior, La Crosse and Prairie du Chien
 - Three diversified cargo ports: Marinette/Menominee, Manitowoc and Sheboygan
 - Six limited cargo ports: Ashland, Bayfield, Washburn, Port Washington, Sturgeon Bay and Washington Island
- » International connections are made through the St. Lawrence Seaway via the Great Lakes
- » The Mississippi River provides access to the Gulf of Mexico
- » Many ports provide intermodal connections to rail

- » Total 2004 freight transported by water: 35.1 million tons valued at \$1.8 billion (includes tonnage shipped through the port of Duluth-Superior)
- » Coal, iron ore and grain are the top commodities shipped through ports

Port and harbor challenges

- » Security
- » Waterfront development
- » Dredging and disposal
- » Large vessel accessibility of the Sault Ste. Marie lock system
- » Mississippi River navigation
- » Outdated Mississippi River lock system
- » Federal regulations
- » Ballast water and aquatic invasive species

Ferries

System facts

- » Six passenger ferries provide almost year-round service in Wisconsin (Map 2-9)
 - Two ferries (Madeline Island and Washington Island) provide access to and from island communities
 - Two ferries provide access across rivers (Cassville and Merrimac)
 - Two ferries provide service to and from Michigan across Lake Michigan (Lake Express Carferry and Lake Michigan Carferry)

Ferry challenges

- » Year-round access to and from island communities
- » Lack of intermodal connections



▲ Figure 2-5: Wisconsin has 15 ports that handle millions of tons of international and domestic cargo each year.



▲ Map 2-8: Ferries in Wisconsin





▲ *Figure 2-6: One challenge facing Wisconsin's bicycle system is making sure that bicycle accommodations are routinely considered in urban and rural highway projects.*

Bicycle

System facts

- » Bicycling accounted for 1.2 percent of all trips made in 2001²
- » Federal Highway Administration policy requires bicycle accommodations on federally funded projects unless no need exists or the cost is deemed prohibitive
- » WisDOT's 1998 state bicycle plan committed to routinely consider bicyclists in roadway design plans
- » Rural accommodations include paved shoulders and separate paths
- » Bicycle accommodations are consistently included in urban state trunk highway projects

² 2001 National Household Travel Survey

Bicycle challenges

- » Improving safety while increasing usage
- » Securing adequate funding
- » Improving connectivity between bikeways
- » Routinely considering bicycle accommodations in urban and rural highway projects

Pedestrian

System facts

- » Walking accounted for more than 7 percent of all trips made in 2001³
- » Walking is the second most common mode of transportation after the personal automobile

³ 2001 National Household Travel Survey

- » Sidewalks and walking provide critical access to transit and other modes
- » Federal Highway Administration policy includes pedestrian facilities on federally funded projects unless there is no need, or the cost is deemed prohibitive
- » The 2002 Wisconsin Pedestrian Policy Plan committed WisDOT to routinely consider pedestrians in roadway designs

Pedestrian challenges

- » Improving safety while increasing usage of pedestrian facilities
- » Securing adequate funding at both the state and local level to install sidewalks along state-owned roadways
- » Improving connectivity between walkways and across highways
- » Need for routine consideration and inclusion of pedestrian facilities in highway projects



▲ *Figure 2-7: The Safe Routes to School program seeks to make bicycling and walking to school a safer and more appealing transportation alternative.*