

CHAPTER 5: TRANSPORTATION

Introduction

In most cases, the region is served by a well-developed transportation system. This system allows for the safe and efficient movement of people and goods within the region, as well as into and out of the region. Most of the transportation activity is, as might be expected, focused in the urbanized portions of the region, where population, industry, and commerce are concentrated. By comparison with urban area transportation systems, longer trips and lower volumes of traffic, or ridership characterize rural area transportation systems. The development of urban-type land uses, away from the urban centers and at lower densities, has blurred this distinction over the past 30 to 40 years. Traffic volumes on rural highways have increased, new highways have been built or expanded, and public transportation programs struggle to meet the increasing travel demand.

A strong transportation system is an integral element in the vitality of the region's economic strength. Industry requires easy access to highways, and sometimes rail, to bring in materials and to transport product to the larger hubs for distribution to a global market. As an example, the region relies heavily on trucking and rail for the delivery of raw materials for the paper industry, as well as to transport finished products, mostly through the Chicago hub for worldwide distribution. Our highways also accommodate a large number of work and shopping trips, opening those markets to more people from neighboring regions. Transit systems allow persons of low income, those with disabilities, and the elderly to access jobs, go shopping, attend social events, and to lead productive and meaningful lives, reducing their reliance on financial assistance programs.

This chapter first addresses the policy context in which transportation functions. Federal and state regulations that affect the planning, development, and operation of the transportation system, and other policies and plans, which will be taken into consideration in this planning process, are discussed. The data and related analysis is organized by transportation mode, and describes the existence and significance of each mode to the region. Highways make up the backbone of the transportation network and allow for auto, transit, and commercial trucking movements within and outside of the region. Transit systems and bicycle and pedestrian facilities throughout the region are also addressed in terms of their location, type, and importance to the region. Passenger rail and airport functions are also inventoried and discussed, while the movement of freight and its importance to the economic vitality of the region is presented.

In terms of the 14 local comprehensive planning goals listed in Chapter 1, East Central takes the view that those listed below relate specifically to planning for transportation.

- Encouragement of neighborhood designs that support a range of transportation choices.
- Encouragement of land uses, densities and regulations that promote efficient development patterns and relatively low municipal state governmental and utility costs.
- Encouragement of coordination and cooperation among nearby units of government.

- Providing adequate infrastructure and public services and an adequate supply of developable land to meet existing and future market demand for residential, commercial and industrial uses.
- Providing an integrated, efficient and economical transportation system that affords mobility, convenience and safety and that meets the needs of all citizens, including transit dependent and disabled citizens.

Policy Context

Federal

A number of federal and state policies guide the planning, development, maintenance, and operation of the transportation network in the region. As tends to be the case with federal and state policies, their implementation is accomplished with the development of regulations, often with tight ties to funding. A few of the federal regulations appropriate to this element are: Title VI, Civil Rights Act, and specifically the Americans with Disabilities Act of 1990 (ADA) and the Executive Order concerning Environmental Justice; Clean Air Act; and planning requirements under the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), and the subsequent Transportation Equity Act of 1998 (TEA-21). Historic preservation regulations also affect transportation planning, project development and construction.

The Transportation Equity Act for the 21st Century (TEA-21), largely reaffirming the tenets of the ISTEA, is the overriding legislation which sets out all federal transportation funding programs and the planning requirements of those programs. For instance, TEA-21 spells out the existence of the Transportation Enhancement program, the minimum level at which it will be funded, and the general principles and intentions of the program. Also, requirements for transportation/land use plans for each urbanized area, and some general description of the plans' contents, were also included in ISTEA and TEA-21. Administrative rules are used to flesh out the program requirements.

Civil Rights legislation, as it relates to transportation, generally protects underrepresented populations from detrimental effects of, or provides adequate benefit from, transportation projects and services. For instance, the ADA requires that all publicly funded transit systems provide paratransit services for those persons who are unable, due to a disability, to access the fixed route bus, light rail, or other general public transit system. Also, all buses must be equipped with a lift or ramp to allow access to those persons who need that type of assistance to access the fixed route system. Environmental Justice legislation protects low-income and minority populations from the detrimental effects of a transportation project, such as a new highway corridor that will create a barrier between a residential community of Amish persons and their chapel and market. Every level of planning needs to include an appropriate level of effort to locate and give such populations access to the planning process, create opportunities for providing input, and consider potential impacts. This is also true in terms of providing benefit of transportation services and projects to the protected populations.

Historic and archeological preservation legislation is intended to protect historically and culturally significant resources, such as burial sites, structures which are deemed architecturally significant to a particular period, or archeological findings of a past culture, from destruction, often in the process of building or expanding a highway. Careful study is necessary to weigh

the significance of the resource against the benefit and alternatives available in the project's development. Often compromises are met through mitigation of the detrimental effects and/or alterations to the project.

Many regulations exist at the federal level that are designed to protect our natural resources. Along with other threats to our air, water, forests, deserts, and mountains, transportation projects are required to meet a long list of environmental requirements. The National Environmental Policy Act (NEPA) sets out environmental review requirements for all Federal Highway Administration (FHWA) actions to consider environmental factors through a systemic interdisciplinary approach before committing to a course of action. The Clean Air Act ensures that transportation plans, programs, and projects conform to Wisconsin's air quality implementation plans. The Clean Air Act, along with Congestion Mitigation and Air Quality Improvement sections of ISTEA, apply to air quality non-attainment and maintenance areas. Currently, the region has air quality attainment status, and the requirements of these legislative actions do not apply. This could quickly change, however, as new air quality standards work their way through the federal court system.

State

State requirements largely echo or augment federal requirements. Transportation projects are held accountable to a large number of Wisconsin Department of Natural Resources (DNR) regulations, aimed at avoiding or mitigating the negative impacts of transportation projects on the natural environment. The Wisconsin Environmental Policy Act, just as the federal policy, requires the consideration of environmental factors by a systematic interdisciplinary approach. Some environmental regulations at the state level, are considerably more specific to Wisconsin's environmental needs and desires, such as the Shoreland-Wetland Protection program which requires cities and villages to adopt shoreland-wetland zoning ordinances and municipalities to establish flood plains based upon the 100 year storm by zoning. The Wisconsin Department of Transportation (WisDOT) is then required to determine whether a project is within a shoreland-wetland zoned area, and whether backwater will increase as a result of the project. Similarly, the requirement of an Agricultural Impact Statement for any projects acquiring land from farm operations seeks to identify impacts of the projects to farm operations. Other state regulations address the protection of historical and archeological sites from detrimental effects of non-federally funded projects.

WisDOT is in the process of updating the State Transportation Plan. Some modal elements of the plan are completed, while others are in some stage of development, as shown in Table T-1.

WisDOT has also begun to prepare its long-range transportation plan through the year 2030. Connections 2030 will set forth a broad vision as well as strategies and policies for all the state's transportation modes: highways, rail, air, water, pedestrian, bicycle, transit and local roads. The recommendations of these plans will be taken into account in the development of the transportation element of this regional comprehensive plan to insure compatibility and compliance where appropriate.

For a more complete listing of state and federal regulations affecting transportation please refer to Summary of Environmental Legislation Affecting Transportation (1998) available at www.fhwa.dot.gov/environment/env_sum.htm

Table T-1: Wisconsin State Modal Plans

Modal Plan	Adopted	Anticipated Completion
Airport System Plan 2020	2000	
Bicycle Transportation Plan	1998	
Pedestrian Policy Plan	2002	
Rail Plan		2003
Highway Plan	2000	
Translink 21: Multi Modal Transportation Plan	1995	

Regional

East Central Policy (2003) compiles current policies, for all policy areas, into one document. Generally, regional transportation policies are reflective of federal and state initiatives discussed previously. There are eight specific policy areas. These focus on integrated planning, effectiveness for all residents, efficient street and highway system, safety, minimum environmental disruption, relationship with land use planning, energy conservation, and multi-modal interaction.

Intergovernmental Cooperation

Because transportation has a primary purpose of providing a connection between activity centers, there tends to be a great deal of crossing jurisdictional boundaries in all modes of transportation. Intergovernmental coordination is, therefore, not new to the transportation field. Because of fluctuating funding levels and mounting mandates, new and innovative cooperation and coordination techniques continue to be implemented. This section will review three examples of intergovernmental cooperation and coordination that are currently in operation in the region.

Urban Highway Project Funding

The development of a Transportation Improvement Program (TIP) is required of every urbanized area in the country. The TIP lists all transportation projects receiving federal or state funding, as well as significant locally funded projects, for a five-year period. In addition to listing all of the projects under all funding programs, the development of the TIP involves the prioritization and selection of Surface Transportation Program – Urban (STP-U) projects. The STP-U program funnels federal dollars to each state, which in turn allocates funds to each urbanized area. The dollars cannot be sub-allocated to the various jurisdictions within the urbanized area, based on the understanding that an urbanized area functions as one unit, rather than individual municipalities. Therefore, each urbanized area is responsible for developing an acceptable prioritization process, acceptable to all the participants, to utilize the funds. In the Fox Cities urbanized area, there are three counties (Outagamie, Winnebago, and

Calumet), four cities (Appleton, Neenah, Menasha, and Kaukauna), three villages (Kimberly, Little Chute, and Combined Locks), and all or parts of six towns (Grand Chute, Menasha, Neenah, Clayton, Buchanan, and Harrison), which have road mileage within the urbanized area. With East Central serving as the Metropolitan Planning Organization (MPO), and a technical committee with representation from every involved community, a prioritization process was developed and adopted, and has been in use for over 10 years. The prioritization process weights the importance of each project to the urbanized area through consideration of each project's consistency with local and regional plans, role in preserving the existing system, volume/capacity rating, accommodation of multiple transportation modes, how many years the project has appeared in the TIP, and a funding availability rating. A detailed description of the STP-U prioritization process can be found in the annual TIP document. Over the years, this process has proven itself to distribute the funding fairly between jurisdictions, between new construction and reconstruction, and to encourage the accommodation of other modal needs.

Corridor Planning

Corridor planning entails a comprehensive review and analysis of land uses and access conditions along an entire highway corridor. Again, this exercise crosses jurisdictional boundaries. East Central has worked with WisDOT and numerous communities on several corridor planning efforts. One example of this type of intergovernmental cooperation is the USH 45 corridor study that examined the partially realigned/relocated USH 45 corridor, from Oshkosh to New London. The study involved all jurisdictions adjacent to the highway, and utilized the public involvement process to develop a long-term vision for the corridor. Ultimately, resolutions were passed by Outagamie, Waupaca, and Winnebago counties, the cities of Oshkosh and New London, and the towns of Caledonia, Clayton, Dale, Hortonia, Mukwa, Oshkosh, Vinland, and Winchester, adopting the primary recommendations of the corridor plan.

Paratransit Coordination

Intergovernmental cooperation and service coordination has been key in making maximum use of funds for the delivery of paratransit services, both in the Fox Cities and Oshkosh urbanized areas. In the Fox Cities, a number of different programs, all serving a different eligible population, many for very specific trip types, existed until recently. The result was a disjointed system that was very confusing to the riders, and was very inefficient in the use of federal, state, and local funds. In various stages over the past 10, or so, years, many of these programs have come together under the funding umbrella of Valley Transit. These programs include Americans With Disabilities Act (ADA) paratransit services and Sunday paratransit services for the elderly and disabled in the Valley Transit service area; Outagamie County Elderly Transportation, Rural Transportation, fixed route service for the developmentally disabled residents of the County, and work transportation for low-income individuals; Winnebago County Lakeside Packaging workshop transportation, and elderly nutrition program transportation; Neenah-Menasha Dial-a-Ride; and Town of Menasha elderly transportation program. Calumet County has recently joined in this coordinated effort, with the inclusion of the New Hope Center transportation programs, with more to come in future years. The coordination of these programs helps to leverage additional federal and state funds, and eliminates a number of duplicate trips through contract coordination.

Exhibit T-1 Regional Transportation Systems

Transportation Systems

Highways

- Corridors 2020 Network
- Other Regional Highways

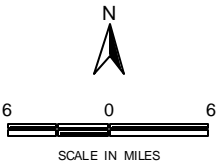
Airports

- Air Carrier \ Cargo
- Transport \ Corporate
- General Utility
- Basic Utility - B
- Basic Utility - A
- Other
- Intermodal Facility

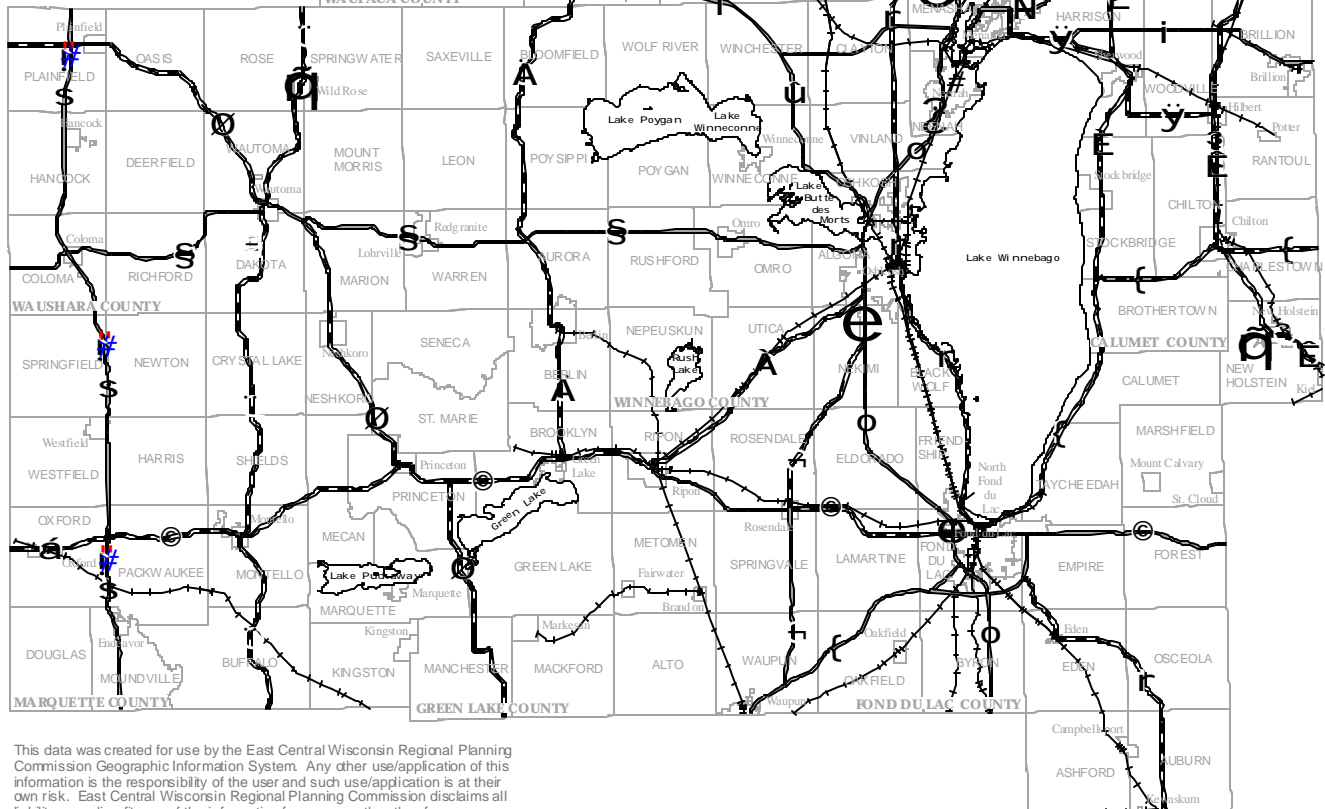
Railroads

- Railroad

Source: East Central Wisconsin Regional Planning Commission



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Background Information

Highways

Highways accommodate several transportation modes, and serve as the backbone of the regional transportation system. As the infrastructure that allows for the movement of goods and people by truck, private auto, or public transportation, throughout and beyond our region, highways warrant early discussion. The regional highway system is shown on Exhibit T-1.

These highways are included because of the regional role they play. Some of the highways are included in the state's Corridors 2020 Plan, as either backbone system highways or connector highways, based on their importance at the state level. The other highways included in the regional system were added due to their importance in commerce and travel at the regional level. Many local roads and lower priority highways also carry a great deal of the traffic in the region, but serve in a capacity of accessing land uses more than that of transporting passengers and goods throughout, and beyond the region.

Functional Classification

Functional Classification is a means by which highways are categorized, based on their level of traffic carrying capacity, access, and land uses served. As the planning process progresses, the discussion concerning the regional highway network will most certainly be divided between urban and rural highways. Separate functional classification systems are used to describe the two categories and, as fate would have it, both are in need of update. A likely product of this process will be proposals for the update of the rural and urban functional classification. The rural and urban functional classifications, and a general description of each follows:

Table T-2: Rural and Urban Functional Classifications

Rural Functional Categories	<u>Description</u>
Principal Arterial	Principal arterials serve corridor movements having trip length and travel density characteristics of an interstate or interregional nature. These routes generally serve all urban areas greater than 5,000 population. The rural principal arterials are further subdivided into (1) interstate highways and (2) other principal arterials.
Minor Arterial	Minor arterials, in conjunction with the principal arterials, serve cities, large communities, and other major traffic generators providing intraregional and interarea traffic movements.
Major Collector	Major collectors provide service to moderate sized communities, and other intra-area traffic generators, and link those generators to nearby larger population centers or higher function routes.
Minor Collector	Minor collectors provide service to all remaining smaller communities, link the locally important traffic generators with their rural hinterland, and are spaced consistent with population density so as to collect traffic from local roads and bring all developed areas within a reasonable distance of a collector road.

Local Roads	Local roads provide access to adjacent land and provide for travel over relatively short distances on an inter-township or intra-township basis. All roads not classified as arterials or collectors are local function roads.
Urban Functional Categories	
Principal Arterial	Principal arterials serve the major centers of activity of an urban area, the highest traffic volume corridors, and the longest trip desires, and carry a high proportion of the total urban area travel on a minimum of mileage. The urban principal arterials are connected to the system of rural principal and minor arterials. Within this category the urban principal arterials are subdivided into (1) interstate highways, (2) other freeways and expressways (connecting links of rural principal arterials, connecting links of rural minor arterials, and non-connecting links), and (3) other principal arterials (connecting links of rural principal arterials, connecting links of rural minor arterials, and non-connecting links).
Minor Arterial	Minor arterials provide intracommunity continuity and service to trips of moderate length, with more emphasis on land access than principal arterials. The minor arterial system interconnects with the urban arterial system and provides system connections to the rural collectors.
Collector	Collectors provide both land access service and traffic circulation within residential neighbor-hoods, commercial areas, and industrial areas. The collector system penetrates residential neighborhoods, distributing trips from the arterials through the area to the local streets. The collectors also collect traffic from the local streets in residential neighborhoods and channel it onto the arterial system. In the central business district, and in other areas of like development and traffic density, the collector system may include the street grid, which forms the basic unit for traffic circulation.
Local Streets	Local streets comprise all facilities not on one of the higher systems. They serve primarily to provide direct access to abutting land and access to the higher order systems. Local streets offer the lowest level of mobility, and service to through-traffic movement on this system is usually discouraged.

Highways are typically analyzed by comparing the volume of traffic they are carrying to their traffic carrying capacity. Congestion occurs as the volumes approach the highway's capacity, causing travel delay. An example of a highway segment that is currently congested, at least during portions of the day, is STH 15/45 from the Fox Cities to Hortonville. This segment typically carries over 15,000 vehicles per day, and has a capacity of approximately 13,000 vehicles per day. During peak hours, more than 2,000 vehicles per hour will pass through this segment of highway, which serves many large commercial and employment related land uses. Travel delays and reduced safety levels result. Similarly, rapid commercial and residential development of the area around the interchange of STH 441 and CTH KK, on the east side of Appleton, has increased volumes which cause vehicle exiting the highway to queue back into the travel lanes of the highway, creating a very dangerous situation.

The state's *Corridors 2020 Plan*, cites some significant portions of the regional highway system that are expected to be either severely or extremely congested, assuming no capacity expansion, by the year 2020. These include: USH 41, from Oshkosh through Appleton; portions of USH 10, west of Waupaca; and STH 15, between Appleton and New London. Small sections of STH 21, west of Oshkosh and at Wautoma, and USH 151, and STH 23 in and around Fond du

Lac, and STH 23 near Ripon, Princeton, and Montello. In these later cases, the congestion occurs where the state highway passes through small urban areas, mixing with local traffic, and slowed by traffic signals and local parking. Capacity expansion in these areas is often restricted by limited right of way, dense commercial and residential development, and local desire to maintain a pedestrian friendly environment.

Another factor affecting the carrying capacity of highways is access. The more access points that exist along a segment of highway, the more the carrying capacity is deteriorated. The degree of access provision on a highway needs to be balanced with its role of carrying through traffic. By definition, all highways on the regional network serve a fairly high through-traffic function, however, many also provide commercial, industrial, and residential access, particularly near villages and cities, adding to the small segment congestion problems, as described above.

Safety issues are also important in a discussion and analysis of highways. Safety can become an issue in a number of the situations already discussed. An increase in the number of access points directly onto a highway, without appropriate accommodation with merging lanes or signalization, will increase the possibility of conflicts and subsequent crashes. Also, sudden congestion, as can occur in the case of the STH 441/CTH KK interchange, can also cause a safety hazard. Highway geometrics, such as a tight curve in a highway, can also pose a safety hazard. An example of this occurs on the STH 441/USH 41 interchange on the north side of Appleton. The ramp serving movement from northbound STH 441 to southbound USH 41 is very tight, due to right of way limitations, and has caused a number of truck rollovers. Short of reconstruction, warning signs can, and have improved the safety of such an area.

Vehicle Ownership

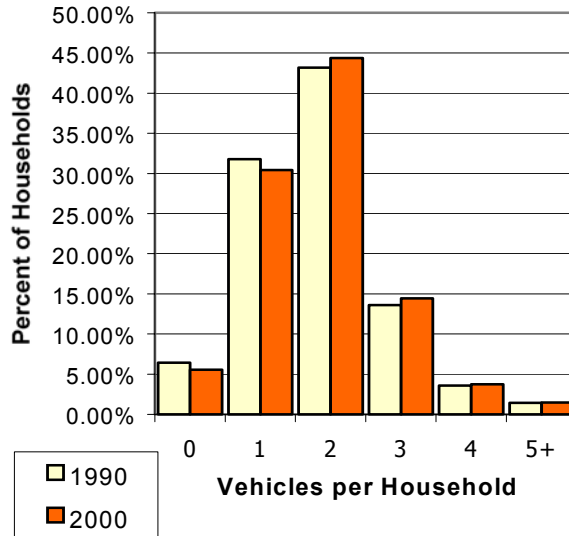
Over time, we have seen nationwide trends of increasing reliance on the private automobile.

Table T-3: Vehicle Ownership by County

County	Households with no vehicles available	Households with 1 vehicle available	Households with 2 vehicles available	Households with 3 vehicles available	Households with 4 vehicles available	Households with 5+ vehicles available
Calumet County	3.49%	26.45%	47.55%	16.23%	4.77%	1.51%
Fond du Lac County	6.15%	31.08%	43.17%	14.18%	3.81%	1.61%
Green Lake County	6.28%	30.14%	42.14%	14.94%	4.47%	2.03%
Marquette County	4.34%	29.59%	43.60%	16.07%	4.19%	2.21%
Menominee County	8.48%	38.88%	38.88%	9.14%	3.79%	0.82%
Outagamie County	5.30%	29.19%	46.31%	14.34%	3.55%	1.31%
Shawano County	6.09%	29.28%	41.85%	16.20%	4.58%	2.00%
Waupaca County	5.65%	28.97%	43.22%	15.98%	4.16%	2.01%
Waushara County	5.23%	28.70%	42.02%	16.65%	5.10%	2.31%
Winnebago County	5.80%	33.11%	44.30%	12.86%	2.97%	0.97%
Urban Counties	5.50%	30.74%	45.04%	13.95%	3.51%	1.27%
Rural Counties	5.72%	29.44%	42.47%	15.86%	4.45%	2.05%
2000 Region Total	5.56%	30.41%	44.38%	14.44%	3.75%	1.47%
State Total	7.87%	32.53%	41.52%	13.23%	3.52%	1.33%
National Total	10.30%	34.25%	38.36%	12.46%	3.37%	1.27%

Similar to growth in traffic counts and congestion on our highways, vehicle ownership continues to rise. Table T-3 shows the distribution of various levels of vehicle ownership by county in 2000. It is significant to note that there are still some households in the region, 5.56%, with no vehicle available. In addition, there is quite a range of no vehicle households, from a low of 3.49% in Calumet County, to a high of 8.48% in Menominee County.

Fig. T-1: Vehicle Ownership
1990 & 2000



Commuting Patterns

Another indicator of increasing traffic on our highway system is the change in travel time of work trip commutes from 1990 to 2000. The changes shown in Table T-4 are fairly dramatic. Every county in the region, without exception has experienced significant increase in work trip travel time, from a 4.3% increase in Menominee County, from 17.6 minutes to 18.4 minutes, to 34.7% increase in Green Lake County, from 16.6 minutes to 22.4 minutes. Two factors contribute to this increased travel time: longer trips, and slower speeds and more delays. Slower speeds and more delays are frequently caused by traffic congestion.

Another significant indicator shown in this table is the major shift taken by rural counties. In 1990 rural counties had work trip travel times higher than the urban counties, but a 20.7 % increase in mean travel times for rural counties over ten years has caused that spread to widen drastically, urban counties experienced a 13.2% increase. This is likely the result of a high rate of residential development in rural counties, with residents commuting to the urban counties for work.

The effects of commuter traffic on highway congestion have a great deal to do with the time of day that commuters are on the road. Sharp peaks in travel volumes, commonly known as "rush hour", occur when many people are trying to arrive to work at approximately the same time. Figure T-2 shows these peaks for the region. This table is based on 2000 census data related to the time of day that persons living in the region leave home for their daily trip to work. It is

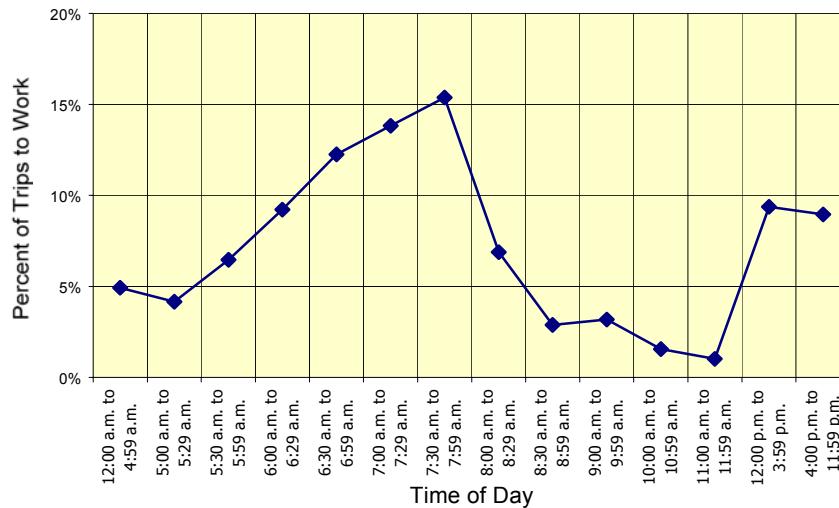
important to note that this is only half of the picture, as it does not include the trip home from work. In looking at the “to work” trip, we can see the relationship of the morning rush hour volumes, relative to the second shift (second to last data point) and third shift volumes (last data point). While the second and third shift peak is smaller than the morning peak, it is discernible and the second shift peak adds to a larger volume of those morning peak drivers, returning home from work between 3:00 and 5:00 p.m. While congestion may occur during these peaks, plenty of capacity exists on the existing highway system during the off peak times.

Table T-4: Work Trip Travel Time by County
1990 & 2000

County	1990 Mean Travel Time (in minutes)	2000 Mean Travel Time (in minutes)	Percent Change
Calumet County	16.90	19.27	14.02%
Fond du Lac County	16.70	18.68	11.83%
Green Lake County	16.60	22.36	34.71%
Marquette County	23.00	25.94	12.78%
Menominee County	17.60	18.36	4.32%
Outagamie County	16.30	18.07	10.85%
Shawano County	19.30	22.85	18.39%
Waupaca County	17.80	21.05	18.24%
Waushara County	21.80	27.09	24.26%
Winnebago County	15.30	17.79	16.30%
Urban Counties	16.09	18.21	13.16%
Rural Counties	19.02	22.95	20.67%

Source: U.S. Bureau of the Census, 1990 & 2000

Fig. T-2: Trips to Work by Time of Day



Public Transportation

Public transportation takes many forms throughout the region, striving to meet varied needs with funding sources that are often complicated with differing eligibility, trip purpose, or local match requirements. Public transportation is defined as any publicly funded transportation program, regardless of eligible clientele. Programs vary by service area, passenger eligibility, service levels, service type, and even trip purpose. Exhibit T-2 shows the distribution of systems throughout the region. More detailed information is shown in Table T-5, Appendix C:1.

Funding Sources



There are various sources of funding used to provide public transportation services throughout the region. Each county is eligible for S 85.21 funding from the state to provide transportation services to the elderly and disabled residents of the county. It is distributed to the counties based on a formula, which considers the number of elderly and disabled residents in the county. This funding can be used for the operation of many different types of services, as deemed appropriate to meet the needs of each individual county. Several counties use the funding to operate volunteer driver programs. Drivers are recruited by the county and are reimbursed for use of their private automobile to drive elderly persons and/or persons with disabilities to medical appointments, shopping, and other trip purposes. This is clearly the most cost effective use of the state funding, but recruitment and retention of drivers is a constant challenge. Volunteer driver programs range in size from 462 trips per year in Marquette County, to Waupaca County's 11,000 trips per year. Section 85.21 funds are also used to operate shared-ride taxi programs for elderly and disabled persons, to assist in the transportation for developmentally disabled persons to sheltered workshop sites for training and employment opportunities. Some counties use the funding to run infrequent (such as, once weekly) flexible fixed route services with buses or minibuses, to give elderly and disabled persons in rural areas an opportunity to travel to larger communities for shopping, nutrition, or other appointments. One example of this type of flexible fixed route service is provided in Shawano County, picking up persons in a different area of the County one day each week, into the City of Shawano, and occasionally to larger shopping areas in Appleton or Green Bay. Some programs receiving 85.21 funds, also use Title III-B (Older American's Act) funding.

Urbanized areas over 50,000 population, Fox Cities, Oshkosh, and Fond du Lac (new urbanized area, as of 2000 Census), receive Federal Transit Administration Section 5307 funding for the operation of their urban transit systems. All three of the areas use this funding to provide fixed route bus service, in addition to paratransit service for those persons who, because of a disability, are not able to utilize the buses. All three systems operate the fixed route buses in-house; but Valley Transit (VT) and Oshkosh Transit System (OTS) contract out for paratransit services. Fond du Lac Area Transit (FDLAT) provides paratransit services in-house. VT and FDLAT provide demand response taxi service in some portion of their service area where land use densities and/or ridership volumes do not justify the use of a bus on a fixed schedule.

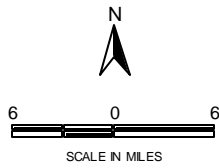
Small urban areas, such as the cities of Shawano, Berlin, Clintonville, Ripon and Waupaca receive federal funds under the Federal Transit Administration Section 5311 program to provide services for the general public, including the elderly and persons with disabilities, in and around their community. This is accomplished in these particular communities with demand response

Exhibit T-2 Urban Transit Systems and Regional Trails

**Transit Systems
and Trails**

- a** Urban Transit System
-  Existing Trail
-  Proposed Trail

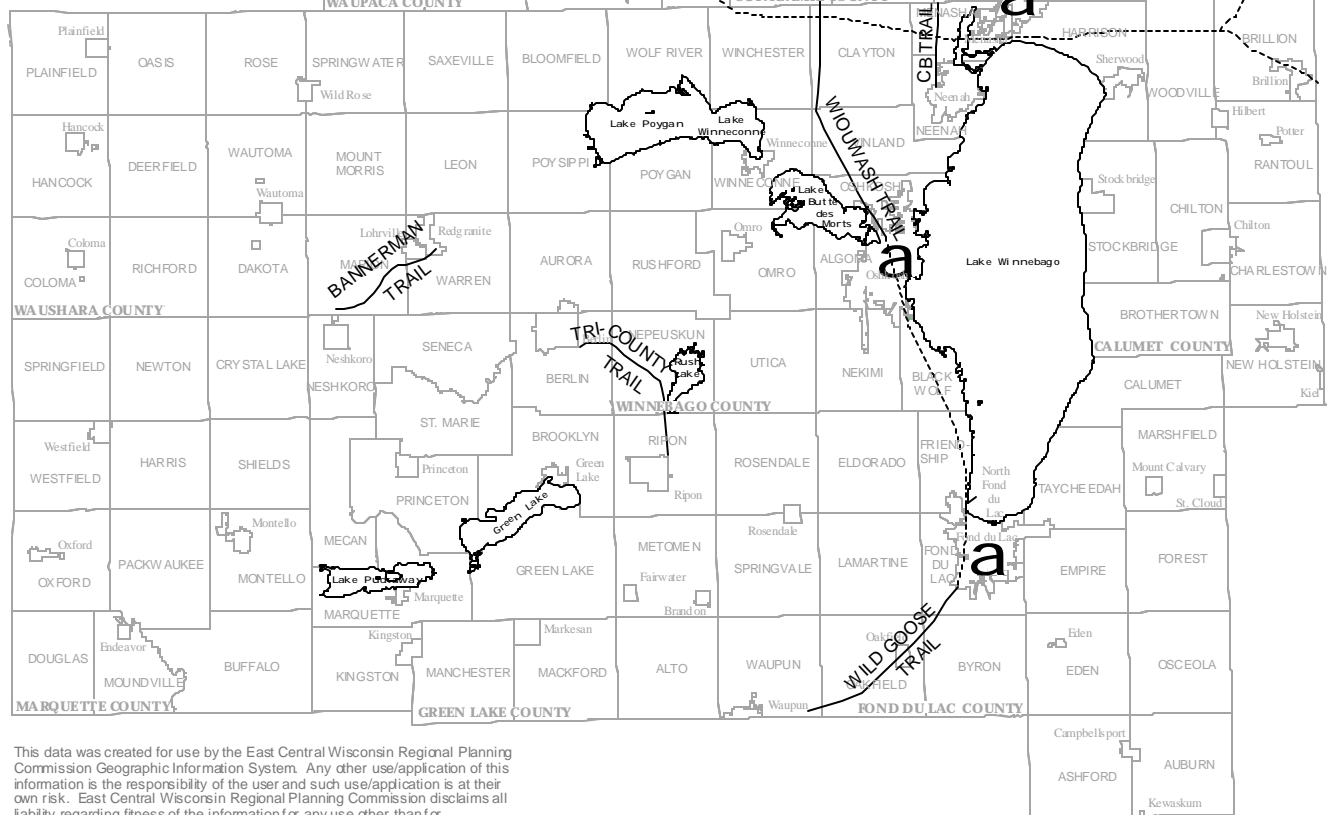
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services, also referred to as shared-ride taxi services. Demand response refers to the fact that a potential rider must contact the transportation service to schedule a trip. The rider is then picked up at the trip origin and taken to their destination. "Shared-ride taxi" refers to the fact that one individual's trip could be combined with another rider's trip, for the sake of efficiency. Comparable and complementary van services are provided for persons who are unable, due to their disabilities, to use the taxis.

The cities of New London, in Outagamie and Waupaca counties, and Kiel, which straddles the Calumet/Manitowoc county line, both provide demand response service within their communities with the use of only local funds. This does give the community more freedom in how the service is provided, and may reduce federal and state reporting requirements. The biggest disadvantage of this local concentration is that the level of local funding limits the amount of service provided. The cities could alternatively use those local funds to leverage dollars from state and/or local sources to provide more trips, and serve a greater need.

Coordination of Transit Services

Coordination of transit services has been, and continues to be, a foundation of transit planning in the region. As federal and state funding for these services have fluctuated over the years, various levels of coordination have been used to run the services more efficiently, resulting in shared costs and service improvements. Both Valley Transit and Oshkosh Transit System have worked closely with county and agency-run services to reduce duplication of effort, and to provide access to federal funds for services previously funded only through state and local sources. All of the counties in the region have a transportation coordinating committee, which, at a minimum, approves the county's distribution of Section 5311 funds between programs in the county. Higher levels of coordination range from information sharing between services to collaboration of dispatching functions or full consolidation of all services into one entity.

Bicycle and Pedestrian

Regional Trails

There are approximately 115 miles of established regional trails and trail segments in the region. These trails are shown on the following map. Great strides have been made in recent years to use regional trails to make connections to a statewide trail system. The Wiouwash Trail, which is ultimately planned to extend from Fond du Lac northward through Langlade County, presently features two completed segments. These include a 22-mile segment from downtown Oshkosh to Hortonville and a 16-mile segment between Tigerton and Birnamwood. The Wiouwash Trail intersects the Mountain-Bay Trail, which links the Green Bay and Wausau areas, in Eland in western Shawano County. About 50 miles of the Mountain-Bay Trail's 80-mile length is located in Shawano County. Another potential opportunity is the Nicolet Trail, which would link with the Mountain-Bay Trail in Pulaski and extend northward from there through eastern Shawano County into Oconto County. Negotiations to re-acquire abandoned railroad right-of-way for this trail are ongoing between DNR and private property owners.

Efforts are also underway to extend the Fox River Trail, which currently links Green Bay and Greenleaf in Brown County, southward to Forest Junction in Calumet County, where it would intersect with the planned Friendship Trail. The Friendship Trail is planned to link Manitowoc with the Stevens Point area. Portions of this trail presently in place include short segments in

the City of Brillion, City of Menasha, and Town of Menasha. A cornerstone feature of the trail is expected to be an impressive half-mile bridge/causeway across Little Lake Butte des Morts in Menasha. Funding has been secured for the acquisition and conversion of the bridge, and negotiations between the railroad, WDNR, and local governments are in process. The trail will continue westward along USH 10, as a part of the new construction highway project, to the Fremont area, intersecting with the Wiouwash Trail along the way.

About 12 miles of the 32-mile Wild Goose Trail is located in Fond du Lac County. This trail, which skirts the western edge of the vast Horicon Marsh, extends from Fond du Lac to Clyman Junction.

Also, Fox Cities Greenways, Inc., a non-profit organization dedicated to the creation of greenways and trails in the area, is working closely with local communities to create a seamless system of linkages for bicyclists and pedestrians throughout the Fox Cities area. The organization is also working on a long-term goal of encircling Lake Winnebago with a trail, using a combination of off-road and on-road facilities.

While the main use of these trails is recreational, portions of the trails, usually near urban areas, carry higher volumes of commuter-type transportation uses. This includes children and adults traveling to parks for soccer games and practice, children riding bicycles or walking to school, people traveling to and from work, etc. In many cases, a local decision to connect a community to a nearby trail has enhanced these uses and provides an alternative mode choice to some shorter vehicular trips. Two examples of heavily used urban trails include the CB Trail on the west side of the Fox Cities and the CE Trail on the east side. The 5-mile CB Trail parallels a principal arterial (CTH CB) from CTH BB on the Outagamie-Winnebago County line south to CTH JJ, connecting with the Friendship Trail at the USH 10 interchange. The 6-mile CTH CE Trail parallels a principal arterial (CTH CE) between Appleton and Kaukauna. Since its completion, the CE Trail has spawned several connecting trails and extensions into communities along its route, including Appleton, Kimberly, Darboy, and Kaukauna. Again, local decisions to provide connections to the regional trails are critical in enhancing the regional trail transportation function.

Much of this trail system was established on abandoned railroad lines, either through the purchase of the land, or through the Rails-to-Trails program, which allows for the reversion of the right-of-way back to rail use as necessary. Since the passage of the ISTEA, and subsequently TEA-21, pedestrian and bicycle accommodations are encouraged in the design and construction of highway projects. Both of these federal transportation acts also require that states use at least 10% of their federal surface transportation funds in a special competitive funding program for enhancements to transportation facilities. While a wide variety of projects are eligible for these funds, one of the more common uses is the development of bicycle/pedestrian facilities.

Passenger Rail

There is currently no passenger rail service in the region. There are plans, developed by a nine-state collaborative effort, known as the Midwest Regional Rail System (MWRRS), to introduce service. The state departments of transportation participating in the effort include Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Nebraska, Ohio, and Wisconsin. The

proposed system uses existing rails, many needing significant upgrade to handle the anticipated high speed (110 mph throughout most of the system) modern trainsets. As noted in the *Midwest Regional Rail System: A Transportation Network for the 21st Century, Executive Report (February 2000)*, "All MWRRS corridors are projected to generate operating revenues greater than operating costs by the year 2010, assuming that the entire system is fully operational and that the MWRRS operating and financial forecasts are essentially achieved."

The implementation plan for the MWRRS is phased over an 11-year period. The early phases involve segments of passenger rail service with highest ridership potential, such as corridors between Chicago and Detroit, Chicago and Cleveland, and Chicago and St. Louis, all in operation in year five. The route serving Wisconsin, from Chicago to the Twin Cities, is also phased, with the segment between Milwaukee and Madison scheduled for operation in year 5. More specific to the region, is the later implementation of the Milwaukee-Green Bay line projected for implementation in year nine. The operation of this line is expected to provide five round trips between Green Bay and Milwaukee, with intermediate stops possible in Appleton, Neenah, Oshkosh, Fond du Lac, and points south, at a fare of approximately \$30 to \$40.

Air

The airport classification scheme used in this planning effort is the same classification scheme used in the Wisconsin State Airport System Plan 2020. The airport classification scheme is defined as follows:

Air Carrier/Cargo (AC/C) airports are designated to accommodate virtually all aircraft up to and in some cases, including wide body jets and large military transports. Airports in this category are usually reference by the type of air carrier service being provided.

- Short-haul air carrier airports serve scheduled, nonstop, airline markets and routes of less than 500 miles. Short-haul air carriers typically use aircraft weighing less than 60,000 pounds. In Wisconsin, short-haul carrier airports normally have a primary runway length of 6,500 to 7,800 feet.
- Medium-haul air carrier airports serve scheduled, nonstop, airline markets and routes of between 500 and 1,500 miles. Medium-haul air carrier airports normally have a primary runway length of 7,800 to 8,800 feet.
- Long-haul air carrier airports serve scheduled, nonstop, airline markets and routes of over 1,500 miles. Long-haul air carriers typically use wide-bodied jet aircraft weighing more than 300,000 pounds. In Wisconsin, long-haul air carrier airports normally have a primary runway length of 8,800 to 9,800 feet.

Transport/Corporate (T/C) airports are intended to serve corporate jets, small passenger and cargo jet aircraft used in regional service and small airplanes (piston or turboprop) used in commuter air service. These aircraft generally have a gross takeoff weight of less than 60,000 pounds, with approach speeds below 141 knots and wingspans of less than 118 feet. In Wisconsin, airports in this category normally have a primary runway length of greater than 4,500 feet.

General Utility (GU) airports are intended to serve virtually all small general aviation single and twin-engine aircraft, both piston and turboprop, with a maximum takeoff weight of 12,500 pounds or less. These aircraft generally have approach speeds below 121 knots and wingspans

of less than 79 feet. Typically, these aircraft are used for business and charter flying and for personal reasons. In Wisconsin, airports in this category normally have a primary runway length of 3,700 to 4,100 feet.

Basic Utility (BU) airports are intended to serve all small single-engine piston aircraft and many of the smaller twin-engine piston aircraft with a gross takeoff weight of 12,500 pounds or less. These aircraft typically seat from two to six people and are commonly used for business and some charter flying as well as a wide variety of activities including recreational and sport flying, training, and crop dusting. In Wisconsin, airports in this category normally have a primary runway length of 2,700 to 3,000 feet.

- Basic Utility-B (BU-B) airports are designed to accommodate aircraft of less than 12,500 pounds gross weight, with approach speeds below 121 knots and wingspans of less than 49 feet. Such aircraft can be either single-engine or twin-engine piston.
- Basic Utility-A (BU-A) airports are designed to accommodate aircraft of less than 6,000 pounds gross weight, with approach speeds below 91 knots and wingspans of less than 49 feet. Such aircraft are typically single-engine piston.

The only difference between an airport classified as Transport/Corporate and an airport classified as Short-haul Carrier is the absence or presence of scheduled commercial passenger air service provided on a year-round basis. The aircraft used for transport/corporate purposes have virtually the same characteristics as those used for short-haul air carrier purposes.

The region is well served by two regional Air Carrier/Air Cargo airports, Outagamie County Airport, just west of the City of Appleton, and Wittman Field, in Oshkosh. A number of other airfields exist in the region, serving a number of important roles. Table T-6 lists the region's airports, their classification and role in the region.

Table T-6: Airport Activity

Airport	Classification	Annual Enplanements (2001)		General Aviation Operations*	Total Aviation Operations
		Passenger	Cargo (lbs.)		
within the region					
Outagamie County Airport	AC/C	261,395	7,005,579	59,000	77,640
Wittman Regional Airport	AC/C	2,376**	NA	78,300	83,970
Clintonville Municipal Airport	T/C	NA	NA	19,000	19,020
Fond du Lac County Airport	T/C	NA	NA	47,700	47,850
New Holstein Municipal Airport	T/C	NA	NA	9,200	9,400
Shawano Municipal Airport	GU	NA	NA	14,000	14,300
Waupaca Municipal Airport	GU	NA	NA	16,800	16,810
Wautoma Municipal Airport	BU-B	NA	NA	4,600	4,800
Wild Rose Idlewild Airport	BU-A	NA	NA	3,200	3,200
outside the region					
Austin Straubel International	AC/C	348,086	416,837	65,000	89,590
General Mitchell International	AC/C	2,811,954	206,203,531	49,700	215,000

Source: Wisconsin State Airport System Plan 2020, WisDOT, August 1999.

** - Denotes general aviation operations for year 2000, as forecast from 1994 base year data, WisDOT.

*- Passenger enplanements for Wittman Regional Airport do not include charter passengers, as reported to FAA.

Annual passenger enplanements, as shown in Table T-6, are the number of passengers that boarded a plane at each airport in 2001. Similarly, cargo enplanements are the pounds of cargo that are loaded onto planes for departure at each airport. Passenger and cargo enplanements are not reported for those airports that do not have commercial passenger or cargo carriers. "General Aviation", as shown in the table, includes a wide range of aviation activities and includes all segments of the aviation industry except air carrier (scheduled passenger and cargo operations) and military activity. General Aviation activities range from the training of new pilots through sport, recreational, including the Experimental Aircraft Association (EAA) fly-in and personal flying to a wide variety of business related to flying, such as corporate transportation, charter, and air taxi activities. General aviation also encompasses emergency shipments; aerial photography; medical services including "flight for life" operations; and crop dusting. "Total Aviation Operations" include all of the above operations, in addition to air carrier and military activity.

Also serving the area, but outside of the region, are Austin Straubel International Airport, in Green Bay, and General Mitchell International Airport, in Milwaukee.

Freight

The shipments of freight are a significant multi-modal transportation activity in the region. The primary modes of freight shipment are truck, rail and air. While waterborne freight movement via the Fox River Lock System was of historical significance within the region, commercial navigation on the river ceased in the late 1950s. Major freight activity is now concentrated in the Fox Cities urbanized portion of the region where major highways, railroads and airports convene.

To determine freight movements within the State, WisDOT prepared freight forecasts as part of the Translinks 21 multi-modal transportation plan. Extensive information on freight production and attraction has been assembled for current conditions (base year 1996) and forecast to the year 2020. This information has been isolated for the region on a county basis and can be compared to statewide and national origins and destinations of commodities. The current commodities produced in the region total 33,840,741 tons compared to the 2020 forecast of 61,465,215 tons. The 20 year increase is 82%. The current commodities attracted (terminating) to the region total 27,235,094 tons compared to 53,121,465 tons in 2020. The increased forecast is 95% can be seen there is a difference in inbound and outbound freight traffic for the region. Also, there is a significant increase in the forecast freight movement over the 20 year period. Commodity movements internal to the region are also estimated. The current tonnage movement is 7,513,936 compared to 13,724,076 in 2020. This is an 83% increase in freight tonnage. Table T-7 lists the current and forecast freight attractions and productions that are both external and internal to the region.

The WisDOT forecasts also addressed the modes of freight transportation. Truck movements account for 95% of all the region's freight flow. Rail freight movement equals over 4% with air freight accounting for less than one-tenth percent. Table T-7 also lists current and forecast freight tonnage by mode.

There is no current standardized survey of truck, rail or air traffic within the region. Estimates of average daily traffic can be interpolated from the total annual tonnage and applied to primary routes and modes. There are 1,500 semi-tractors and 11,127 semi-trailers currently registered in the region. These account for only a portion of the total truck movements. Based upon an average of 30 tons per truck, the annual current truck trips total 2,165,869. This equals almost 6,000 trips per day in 1996.

There are approximately 300 miles of active railway within the region. Of this amount, Canadian National, a Class 1 railroad accounts for 230 miles. Approximately 2000 rail cars per day flow through the region on Canadian National. Approximately 3,611,345 tons of freight is currently moved by rail annually within the region. This amount is projected to total 4,600,000 tons by 2020 accounting for a 27% increase.

There is one inter-modal facility within the region located in the City of Neenah. This facility is approximately five acres in size and can accommodate trailer-on-flat-car and containerized freight. Volume approximates one train movement per day. The amount of freight tonnage is unavailable.

The Outagamie County Airport accounts for the predominant air freight traffic. Federal Express is the major carrier. Annual air tonnage approximates 2368 increasing to 5400 tons in 2020 for a 128% increase.

Table T-7: Freight Attractions and Productions by Mode of Transportation

Commodity Tons Terminating in the East Central Region				
Mode	1996	2020	Increase	% Increase
Air	2,044	4,416	2,372	116%
Truck	32,597,680	58,912,294	26,314,614	81%
Rail	1,241,017	2,548,505	1,307,488	105%
Combined	33,840,741	61,465,215	27,624,474	82%
Commodity Tons Originating in the East Central Region				
Air	324	981	657	203%
Truck	24,980,934	49,102,090	24,121,156	97%
Rail	2,253,836	4,018,394	1,764,558	78%
Combined	27,235,094	53,121,465	25,886,371	95%
Commodity Tons Originating and Terminating within the East Central Region				
Air	---	---	---	----
Truck	7,397,444	13,488,102	6,090,658	82%
Rail	116,492	235,974	119,482	102%
Combined	7,513,936	13,724,076	6,210,140	83%
Commodity Tons Total Movement in the East Central Region				
Air	2,368	5,397	3,029	128%
Truck	64,976,058	121,502,486	56,526,428	87%
Rail	3,611,345	6,802,873	3,191,528	88%
Combined	68,589,771	128,310,756	59,720,985	83%

Source: WisDOT Construction & Forecast of Freight Traffic Data

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Transportation: Key Findings

Current Trends

Highway

- Work trips travel times continue to increase, along with trip length.
- Rural counties are outpacing urban counties in work trip travel time increases.
- Vehicle ownership continues to increase slightly, as fewer households are without a vehicle.
- Lower density development on the urban fringes and in rural areas has led to significant increases in the cost of both maintaining existing and developing new facilities.

Public Transportation

- Urban bus system ridership is on a very slight decline, remaining nearly level through the 1990s.
- Urban paratransit services for persons with disabilities has seen significantly increased demand, while the per-trip cost of providing the service has also been increasing at a significant rate.
- Lower density development on the urban fringes has sparked a difficult challenge for urban systems to provide service.
- Rural services for the elderly and disabled are more difficult to serve and continue to be in great demand.
- The coordination of services has allowed for increased efficiency and the provision of more trips, particularly for rural elderly and disabled services.

Bicycle and Pedestrian Travel

- Great strides have been made in the development of a regional trail system.
- Urban communities have begun to develop connections to the regional trail system.
- Sprawl development has presented difficulties, in the form of barriers, hazards, and trip length, to bicycle and pedestrian travel.
- Many lower density residential and commercial areas have been developed without facilities necessary for alternative mode travel.

Passenger Rail

- There is currently no passenger rail service available in the region.
- The Midwest Regional Rail System is through much of the planning process and is currently searching for funding to begin implementation.

Air Travel

- There are two regional airports, and a number of transport/corporate, general utility, and basic utility airports located within the region.
- Two international airports, outside of the region, Austin Straubel International in Green Bay, and General Mitchell International Airport in Milwaukee also serve the region.

- Wittman Field (Oshkosh) and Outagamie County Airport (Appleton) serve a strong economic development function in the east central region.

Freight Transportation

- The primary modes of freight shipment are truck, rail and air.
- There is a significant difference in inbound and outbound freight traffic for the region, with outbound outweighing inbound by 20%.
- Truck movements account for 95% of all the region's freight attractions and destinations. Rail freight movement equals 4% with air-freight accounting for less than one-tenth of a percent.

Future Trends

The future of our transportation system is effected by shifts in the economy, the demands of the population, development patterns, and efficiency of the modes to serve them.

- The availability of funding for transportation projects within the region may be substantially impacted by the fact that rebuilding the Marquette Interchange appears to be a top priority for the state. Given the new governor's promises not to increase fees or taxes, funds may have to be reallocated from other programs.
- Highway congestion will continue to increase as trips become longer and vehicle ownership increases.
- The demand for paratransit services will continue to increase as baby-boomers age and lose the ability to drive their own cars. The aging baby boomers may become strong advocates for improving transit services as well as for traditional neighborhood designs, which emphasize higher density and mixed use development.
- There will be a significant increase in the forecast freight movement over the next 20 year period, estimated at 3.6%.
- Cars and light trucks are oil dependent consequently changes in the price and availability of oil could have major impacts on transportation. If the energy costs of transportation go high enough, energy efficient transportation technologies may account for an increasing market share during the planning period. Specifically, fuel-electric hybrid technology. The 48 mpg Toyota Prius and the 64 mpg Honda Insight are proving reasonably popular.
- Computers and communications are increasingly central to the future of transportation. Many Intelligent Transportation Systems (ITS) are coming on-line. Advanced Traffic Management Systems (ATMS) provide for traffic signal coordination, changeable message signs, and route diversion systems. Advanced Public Transportation Systems provides for electronic payment of transit fares, and automatic vehicle location (AVL) technology to track buses, provide up-to-date information on transit schedules and arrival times, or reroute buses to avoid congestion.

Identification of Issues

- How can we rethink how we deal with transportation issues relating to sprawl development and congestion? Focus groups commented on the relationship between sprawl development and the resulting need to increase capacity. As residential

development occurs further from the urbanized areas, trip frequencies, as well as trip lengths, increase. Fewer trips are accomplished through alternative modes, walking or bicycling, because services, employment, and often schools, are a longer distance from home. More and longer trips create a need for road improvements or expansions. The issue can also be turned around, in that, once a road is improved or widened, or a new highway built, people can travel farther in the same amount of time, allowing them to move out farther still, spurring more sprawl development.

- How can we achieve a practical focus on the need for transportation modes other than the single occupant vehicle? It was felt that there needed to be more consideration given to encouraging development that would be pedestrian, bicycle and pedestrian friendly in urban areas. Transit services, bicycle and pedestrian accommodations, and their strength in reducing congestion needs to be considered. The establishment and maintenance of trails was also deemed as important, especially in areas of lower density development. It is clear from the review of existing conditions that there is an extensive regional trail system in the works, with some segments awaiting completion.
- How can we promote mobility for all persons? Also addressed as an issue in several focus group meetings, was the need for mobility for persons with special needs. There is a sizable portion of our population that is either unable to drive, or cannot afford to own and maintain a reliable vehicle. Without available transportation options, many persons with disabilities, elderly persons, and low-income individuals may be needlessly unable to obtain or hold a job, or to live a productive life. This can be the case in urbanized areas, in terms of the lack of public transportation services for second or third shift workers, but also in more rural areas where the provision of any transportation services is more of a challenge.
- How do we achieve a reasonable balance between transportation and environmental considerations? There were focus group concerns for the environment and the need to build, maintain, and repair roadways with attention to invasive and threatened species. Salt and other chemicals used in the construction and maintenance of roads can become toxic runoff and contaminate nearby waterbodies and groundwater resources. Many regulations exist to protect our water and air from the construction and use of our transportation system. Are they effective?
- How do we define transportation projects of regional significance? Specific transportation projects may be needed to address the region's economic development, mobility, and/or congestion/safety issues. This plan will ultimately determine such areas of need, consider alternatives, and address recommendations to meet these needs.
- How do we ensure value for money in transportation planning, for both current and future generations and in terms of both, cost of maintaining existing and proposed facilities and services, in addition to initial costs in project construction or service initiation?
- How do we provide for greater transparency in transportation planning? Transportation agencies influence the allocation of large amounts of money. Their decisions have major impacts not just on mobility, but on shaping land use and urban development patterns, air pollution, infrastructure costs, access to housing and jobs for lower income people, as well as environmental quality. In other words transportation agencies deal with a topic that really matters to citizens, some of whom feel somewhat disenfranchised.

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