

ENVIRONMENTAL REVIEW

INTRODUCTION

The East Central Wisconsin Regional Planning Commission has been designated by the Fond du Lac Metropolitan Planning Organization (MPO) to conduct the urban transportation planning process. This planning effort reflects the Transportation Equity Act of the 21st Century (TEA-21), which requires the consideration of the overall environmental, social, and economic effects of the metropolitan transportation plan.

An extensive issues identification process was completed to develop goals, policies, and objectives for the long range land use/transportation plan. The environmental assessment scoping process was initiated concurrently with the issue identification phase of the planning process. The issues were established through special committees and public comment. Multimodal transportation, the connectivity of transportation and land use, and the potential environmental effects of these planning goals and objectives were addressed to meet the requirements established by the TEA-21.

This chapter evaluates the potential environmental impact of goals, objectives, and recommendations contained in the long range land use/transportation plan. The assessment of potential environmental effects addresses economic, social, and natural resource impacts.

ENVIRONMENTAL JUSTICE

Environmental justice is a process which seeks to ensure that access to transportation systems and the transportation planning process is available to all, regardless of race or socioeconomic status. In terms of race, the Fond du Lac Urbanized Area has a substantially low minority population which is fairly scattered ([Exhibit 74](#)). Public involvement efforts within the planning process to include minority groups have included notification to local minority organizations and agencies, with contact information on public documents in Hmong and Spanish (the primary languages spoken by non-English speaking residents of the Urbanized Area) for further information.

In terms of low income populations, areas are more easily identified. In this case, consistent areas of low income populations were defined through the use of 2000 census tract data. These areas were categorized as less than 20 percent, 20 to 39.99 percent, 40 to 59.99 percent, and 60 or more percent of the total households. These areas are identified in [Exhibit 75](#). Also included within [Exhibit 75](#) is the location of identified Transportation Improvement Program (TIP) projects from 2006 to 2010 and their geographic relationship to these low income areas.

Efforts were made to include all individuals within the planning process. Public information meetings were held during all phases of the planning process. Advertisements were published in the local newspaper (*The Fond du Lac Reporter*) prior to public information meetings held throughout the entire planning process. Flyers and notices were distributed via mail and e-mail to various committees, organizations, and agencies throughout the planning process for distribution to as many individuals as possible. Presentations were made to local groups with further interest in the planning process. Locations of public information meetings were crucial in the public involvement process. All meeting locations were selected to include easy access for all individuals, especially transit and alternative mode users, as well as facilities which catered to the mobility needs of the disabled.

Various planning documents, including the draft of this plan were open to public comment. Public participation throughout the process is characterized as consistent.

A goal of the Fond du Lac Metropolitan Planning Organization is to “provide an efficient and accessible transportation system which will meet the short and long range needs, interests, and objectives of all of the region’s citizens”. As identified in [Exhibit 74](#) & [Exhibit 75](#), it is graphically depicted that a good portion of short range and long projects are scheduled for areas of minority (non-white) and/or low income populations. Although there are no major concerns at this time, these projects will continue to improve the accessibility, mobility, and safety of all users using all modes, while posing no significant negative impacts. [Exhibit 76](#) & [Exhibit 77](#) show areas of minority (non-white) and low income populations in relation to transit which is relied on by many of these individuals to access major employment areas, medical facilities, post-secondary education, recreation, shopping centers, etc.

Economic Impacts

The effects of the land use/transportation plan have the potential to extend into economic and social arenas. Level of service on roadways, multimodal opportunities, and accessibility for businesses are all issues to be considered. If levels of service on the transportation network decline during the planning period, the potential for more time spent on roadways would be significant. (Level of service is discussed further in the Congestion Impact section.) Additional business and personal travel time translates into increased transportation costs. However, economic incentives exist to keep business travel expenses to a minimum, and policies within the plan target the need to maintain acceptable levels of service on roadways.

Focusing on maintaining and improving existing facilities and multimodal opportunities will provide benefits to businesses and residents. The plan identifies policies, which if enacted, would ensure that appropriate types and levels of multimodal transportation services are provided to the area. Additionally, maintaining and/or improving transportation facilities will enable the transportation system to continue to provide adequate accessibility to agricultural supplies and markets. An integrated transportation system combining different modes, including rail and trucking facilities, enhances the movement of goods and services. Efficiently routing truck traffic and providing joint terminals and delivery services would increase the accessibility of distant suppliers. Enhanced accessibility and multi-modalism will provide incentives for businesses to expand and improve the business climate to attract new businesses.

Social Impacts

Several objectives within the long range transportation/land use plan note the importance of an efficient and environmentally sound transportation network, along with efficient and environmentally sound land uses. Implementation of these objectives would improve quality of life and make the Fond du Lac Urbanized Area a more attractive community. The Fond du Lac Urbanized Area has substantial shoreland along Lake Winnebago, much of which is already developed. This plan and the plan adopted by the City of Fond du Lac include policies such as the preservation and redevelopment of waterfront areas for greater recreational use, preserving scenic easements for viewsheds, and creating multimodal recreational opportunities, such as bicycling or walking along a redeveloped waterfront or park area. Enacting these policies would make the Fond du Lac Urbanized Area a more attractive place to work, live, and play.

Another social impact addressed by this plan is the effect transportation investments will have on each resident's ability to travel to and from work, school, a friend's house, or other important places

inside and outside the community. In the recent past, transportation planning has focused on automobile travel, with other modes of transportation planned for separately. Pedestrian and bicycle travel were considered to be recreational. This has contributed to the design and construction of auto dependent neighborhoods in the Fond du Lac Urbanized Area and elsewhere. Auto-dependent designs not only reduce the mobility of non-drivers, but also create an artificial burden, as owning an automobile is no longer a choice, but a necessity.

This plan includes goals, policies, and objectives for public transportation, pedestrian, and bicycle travel as alternative modes. Providing alternative modes of transportation reduces traffic congestion, and provides individuals, particularly the elderly, the disabled, the young, and the poor with greater independence of movement. It also makes automobile usage a matter of choice, rather than a necessity. The transportation plan has been developed to work with the land use plan to enable residents within the Fond du Lac Urbanized Area and visitors to reach vital destinations quickly and safely.

Currently, only residents in portions of the Urbanized Area have a variety of modes to choose from. While the plan encourages the development of alternative modes, realistically, they can not be available everywhere. The density of existing development in some areas is too low for fixed route public transit to be a viable option. Many streets within the central city and some outside the central city are too narrow and busy for bicycle travel. Much of the existing development has occurred at densities or in land use patterns which make pedestrian and bicycle travel inconvenient. In some areas, no facilities were provided for pedestrian or bicycle travel. Right of way would have to be purchased to provide these facilities. Purchasing right of way in developed areas can be very expensive.

LAND USE IMPACTS

Policies within the plan state that the disruption and dislocation of neighborhoods, households, businesses, industries, and public and institutional buildings by construction or expansion of existing transportation facilities should be minimized. Integrated planning is an objective in the land use/transportation plan as a means to maintain a transportation system that supports current land use plans and desired patterns of future development.

CONGESTION IMPACTS

The impacts of congestion on a transportation system can be severe. For example, as traffic increases on a street, the likelihood of crashes will increase as well. A traveler on a severely congested street will probably experience frequent stops and starts, vehicles weaving through traffic to change lanes, and other hazardous situations that could result in a crash. Other negative effects of congestion include more significant wear on the street and vehicle, increased driver stress and vehicle emissions attributable to frequent acceleration and extended idling time. However, the provision of incentives to use modes of transportation other than the single occupant vehicle could reduce the number of vehicles on the Fond du Lac street network.

The plan addresses the likelihood of congestion in the Fond du Lac Urbanized Area and identifies methods of reducing traffic at these potentially hazardous locations. The plan's policies state that an

efficient street and highway system must consider financially constrained improvements to minimize congestion and to keep travel times low. Some of these improvements include channelization, signalization, signal timing, and/or removal of on-street parking to maintain adequate service. In addition, the use of alternative modes of transportation such as transit, walking, and bicycling should be strongly encouraged to minimize the number of cars on the network. All new road construction in any jurisdiction within the Fond du Lac Metropolitan Area, should consider these alternative modes of transportation.

The standard used to evaluate traffic operating conditions and identify congestion is known as level of service (LOS). This is addressed below.

Level of service. Level of service is typically broken into the following six categories:

Level of service A, which is characterized by free traffic flow. Under these conditions, transportation system users are virtually unaffected by other users, travel safety and comfort are very high.

Level of service B, which is characterized by stable traffic flow. LOS B conditions allow system users a significant amount of freedom to choose their own speeds, but a slight amount of interaction with others is common. Travel safety and comfort are also high under LOS B conditions.

Level of service C, which is characterized by stable yet restricted traffic flow. Under these conditions, the amount of interaction with other transportation system users becomes significant, and the general level of comfort and convenience begins to decline.

Level of service D, which is characterized by high-density traffic flow, lower speeds, and restricted maneuverability. LOS D conditions generally create uncomfortable and inconvenient traveling conditions; however, traffic flow is typically stable.

Level of service E, which is characterized by unstable traffic flow and volumes that are at or slightly below capacity. Under these conditions, system users experience poor comfort and convenience levels, and crash exposure is increased.

Level of service F, which is characterized by forced flow, traffic queues, and stop-and-go situations. Under these conditions, the amount of traffic that is present on a facility exceeds the amount that can be served, which creates the problems mentioned above. System users will typically experience low comfort and convenience, poor travel times, and high crash exposure on an LOS F roadway.

The land use/transportation plan uses LOS C as the minimum desirable level of service for each major roadway. During the development of this plan, a computer model was used to identify which of the area's roadways will likely experience levels of service below this threshold during the planning period. This process and its relationship to level of service are summarized below.

Modeling process. Estimating levels of service requires the collection of a significant amount of data. Included is block level census data for the year 2000, such as population, household characteristics, employment and information describing the Fond du Lac area street and highway network. Network information includes annual average daily traffic (AADT) volumes and facility types in terms of function, width, number of lanes, land use, speed and capacity. Statistical relationships, developed using travel surveys, link the socioeconomic data from the census to trip-

making behavior. The relationships are used by the travel demand model to simulate trips between traffic analysis zones (TAZs) within the study area. In addition to these internal trip exchanges, trips traveling through the study area are also included in the overall modeling effort. During calibration, these modeled trip exchanges were "assigned" or added to the computerized network of the study area's roadways and compared and calibrated to actual traffic counts.

Once the base traffic conditions were calibrated, the same relationships were used in creating the year 2035 model. The trip generation rates developed for the calibrated base year model are then applied to the socioeconomic projections to create the future (2035) model for the area. This process involved estimating growth or decline within each of the study area's TAZs through 2035 to estimate the levels of traffic generation within and between zones.

The assignment of traffic to the base and future networks is generally determined by each street's average speed and capacity. When creating the network, each street is assigned a speed and capacity in the model database. These attributes largely determine each street's relative attractiveness to a vehicle traveling to, from, or within the Fond du Lac study area; therefore, streets with the highest speeds, directness, and capacities will generally have the greatest number of vehicles assigned to them. As mentioned above, the calibration process helps to create a network that represents actual (or estimated future) traffic levels on each street in the model. Once this is completed, level of service can be estimated for the future network by comparing the traffic assignment for each street with its corresponding capacity. Those streets that equal or exceed a volume to capacity (v/c) ratio that represents LOS C (80 percent of capacity) could experience traffic levels identified as undesirable in this plan.

Potentially congested roadways. The roadway capacity improvement recommendations included in this plan resulted from the modeling of projected traffic on the existing network to determine areas of potential deficiency, deficiency, and severe deficiency, and the subsequent modeling of alternative improvements. Severity of deficiency is based on the volume to capacity ratio. The resulting recommendations are intended to alleviate future congestion problems in the Fond du Lac area.

COMMUNITY AND NEIGHBORHOOD IMPACTS

Several policy statements in the plan support the development of a transportation system compatible with existing and future development patterns. The policies include minimizing the disruption of neighborhoods and reducing the penetration of neighborhood units by arterial streets.

Minimizing both of these activities will enhance the efficiency of the transportation network within communities. Policies also state that the location of new or relocation of existing facilities in or through recreational, historical, scenic, or cultural sites should be avoided whenever possible.

When identifying transportation projects for a long range plan, it is essential that existing and proposed land uses be considered to ensure that these projects do not isolate neighborhoods from important destinations. For example, it would not be wise to place a major street between an elementary school and a densely populated residential area, for many children could be forced to risk injury while walking to and from the school. Granted, proper signalization at intersections and clearly marked crossing zones could reduce the risk, but the presence of the street would certainly create a safety risk for the residents.

This plan considers the effects that major transportation investments could have on the Fond du Lac area and its neighborhoods and attempts to minimize the negative impacts that could result from the projects proposed in the document.

Noise Impacts. The consideration of the impact of noise is addressed in policies stating the need to meet national standards ensuring that residential areas, schools, and other areas with high concentrations of people are not exposed to harmful levels of noise from transportation facilities.

Visual Impacts. In an effort to develop attractive communities, the plan promotes designing transportation facilities to be aesthetically pleasing and sensitive to the natural landscape. Incorporating amenities such as boulevards, berms, and attractive landscaping is important in the design of major arterials in urbanized areas. For rural areas, the plan stresses the need to minimize views such as junkyards, billboards, and strip commercial development.

Historical and Cultural Impacts. As discussed previously, the disruption of neighborhoods, historic areas, and recreational areas is discouraged in the development of a transportation system. When expansion, relocation, or new construction is proposed, the consideration of the costs and benefits of the new or updated facility must be weighed against the impacts to these areas.

NATURAL RESOURCES

Water Resources. Many water resources are part of environmentally sensitive areas. The location of roadways through environmentally sensitive areas should be kept to a minimum. Maintaining natural water depths and implementation of construction site erosion control measures are ways to prevent sediment laden run-off from flowing into surface waters. Run-off control measures must be taken during any construction of a transportation facility. [Exhibit 78](#) shows wetlands and streams in the Fond du Lac area.

The location of new developments should be planned in conjunction with both existing transportation facilities and land uses to promote sanitary sewer systems which will effectively and economically serve urban development. To facilitate compact development, vacant developable lands within the existing Urbanized Area should first be in-filled. Sanitary sewerage service to existing development should be provided whenever it is the most cost effective alternative for addressing failing on-site sanitary systems.

Sewer service area plans play a significant role in development. East Central Wisconsin Regional Planning Commission, under a contract with the Wisconsin Department of Natural Resources (WDNR), prepares sewer service area plans, while the WDNR ultimately reviews and approves the plans. Because the sewer service area planning process is largely based on growth projections, the results of boundary limits established can in some instances be too restrictive or too liberal. If the boundary is too restrictive, development can be pushed into unsewered areas and is non-contiguous. If the boundary is too liberal, development can occur in a haphazard, or leap frog fashion. Communities have criticized East Central's projections for being too conservative and have fought for additional acreage allocations. In response to community's demands and to provide a choice of developable sites within the sewer service area boundary, East Central has historically provided excess acreage within the sewer service planning area. By providing this level of excess available acres, East Central is leaving the burden of controlling development to individual jurisdictions.

Air Quality. The Fond du Lac Urbanized Area is currently an attainment area or an area which meets all air quality standards. To remain an attainment area, the plan supports efficient traffic control measures and the encouragement of transit, bicycle, and pedestrian travel. Air quality should be monitored to ensure that motor vehicles, including air and water craft, do not exceed the exhaust emission standards established by the Environmental Protection Agency (EPA).

Energy Consumption. The plan recognizes that energy supplies are uncertain and that the conservation of energy is important. The conservation of energy encompasses the need for development to occur at densities adequate to sustain reasonable urban services and to support multimodal transportation. The use of ride sharing, organized efforts such as Travel Demand Management (TDM) programs, and transit should be considered especially in areas where major employers are located, and the location of major businesses should consider the availability of transit. Pedestrian and bicycle facilities should be made available where possible. Pedestrian and bicycle facilities can easily be incorporated concurrent with new development. It is more difficult and costly to incorporate these facilities into existing development. While densities within the older portion of the City of Fond du Lac are capable of sustaining transit, much of the new development in the city and surrounding towns is not.

The design of highway facilities needs to include smooth pavements and the elimination of steep grades and sharp curves to conserve energy. Traffic flows and transportation facility locations should provide the fewest interruptions and shortest travel paths for the greatest number of trips. Efforts to improve energy conservation through improved fuel efficiency of vehicles and through educational programs on better driving travel habits are also necessary.

Ecosystems and Habitat Fragmentation. Minimizing environmental disruption and maintaining a quality environment is a priority of the land use/transportation plan. Locating and expanding roadways through environmentally sensitive areas should be kept to a minimum. These areas include wetlands, areas subject to flooding, steep slopes (areas with slopes greater than 12 percent), high bedrock, and areas where endangered plants and wildlife are found. Encouraging the presence of natural vegetation, especially along roadsides, offers protection to wildlife and a reduction in the need for herbicides.