

Chapter 6 Transportation Demand Management (TDM) Strategies

6.1 Role of TDM in the Transportation Plan

Transportation Demand Management (TDM) measures came into being during the 1970's and 1980's in response to a desire to save energy, improve air quality, and to reduce peak period congestion. TDM strategies focused on identifying alternates to single occupant vehicle use during commuting hours. Therefore, such things as walking and bicycling for work purposes are most often associated with TDM. Many of these methods were not well received by the commuting public and, therefore, provided limited improvement to the peak-period congestion problem. Because of negative experiences with these traditional TDM measures over the past few decades, it became clear that the whole TDM concept needed to be changed. TDM measures that have been well received by the commuting public include bicycling and walking. In addition to addressing commute trip issues, managing demand on the transportation system in the Polson area includes addressing traffic congestion associated with special events, such as the local Farmer's Market, Arts Festival, Cherry Festival, Hoop Shoot, or sporting events. A definition of TDM follows:

TDM programs are designed to maximize the people-moving capability of the transportation system by increasing the number of persons in a vehicle, or by influencing the time of, or need to, travel. (FHWA, 1994)

Since 1994, TDM has been expanded to also include route choice. A parallel arterial with excess capacity near a congested arterial can be used to manage the transportation system to decrease congestion for all transportation users.

The Polson area is projected to grow. The accompanying expansion of transportation infrastructure is expensive and usually lags behind growth. Proper management of demand now will maximize the existing infrastructure and delay the need to build more expensive additional infrastructure. TDM is an important and useful tool to extend the useful life of a transportation system. It must be recognized that TDM strategies aren't always appropriate for certain situations and may be difficult to implement.

As communities such as Polson grow, the growth in number of vehicles and travel demand should be accommodated by a combination of road improvements; bicycle and pedestrian improvements; and a program to reduce travel (vehicle trips and the vehicle miles traveled) via transportation demand management in conjunction with appropriate land use planning. This section of the Transportation Plan contains a variety of TDM measures, many of which may not be appropriate and acceptable for the Polson community. The selection of appropriate TDM strategies for the community is best left for the local governing bodies.

TDM strategies are an important part of the Plan due to their inherent ability to provide the following benefits to the commuting public:

- Better transportation accessibility;

- Better transportation predictability;
- More, and timelier, information;
- A range of commute choices; and
- Enhanced transportation system performance.

TDM measures can also be applied to non-commuter traffic and are especially easy to adapt to tourism, to special events, emergencies, and to construction. The benefits to these traffic users are similar to those for commuters and are listed as follows:

- Better transportation accessibility;
- More transportation reliability;
- More, and timelier, information;
- A range of route choices; and
- Enhanced transportation system performance.

These changes allow the same amount of transportation infrastructure to effectively serve more people. They acknowledge and work within the mode and route choices which motorists are willing to make and can encourage a sense of community. Certain measures can also increase the physical activity of people getting from one place to another.

Such things as alerting the traveling public to disruptions in the transportation system caused by construction or vehicle crashes can manage demand and provide a valuable service to the traveling public.

Overall, congestion can be avoided or managed on a long-term basis through the use of an integrated system of TDM strategies.

6.2 List of TDM Strategies

TDM strategies, which are or have been used by other communities in the United States, which may be appropriate for Polson, include:

Bicycling

Bicycling can substitute directly for automobile trips. Communities that improve cycling conditions often experience significant increases in bicycle travel and related reductions in vehicle travel. Even a one percent shift in travel modes from vehicle trips to bicycle trips can be viewed as a positive step in the Polson community. Although this mode may not be a measurable statistic pertinent to reducing congestion, providing increased bicycling opportunities can help and can also contribute to quality of life issues. Bicycling characteristics

within the Polson area is primarily recreational in nature, and by implementing the bikeway network improvements as described in Chapter 5, a gradual shift to bicycling as a commuter mode of travel should be realized. Incentives to increase bicycle usage as a TDM strategy include: construction improvements to bike paths and bike lanes; correcting specific roadway hazards (potholes, cracks, narrow lanes, etc.); development of a more connected bikeway street network; development of safety education, law enforcement, and encouragement programs; and the solicitation and addressing of bicycling security/safety concerns. Potential costs of this TDM strategy are expenses associated with creating and maintaining the bikeway network, potential liability and accident risks (in some cases), and increased stress to drivers.

Walking

Walking as a TDM strategy has the ability to substitute directly for automobile trips. A relatively short non-motorized trip often substitutes for a longer car trip. For example, a shopper might choose between walking to a small local store versus driving a longer distance to shop at a supermarket. Incentives to encourage walking in a community can include: making improvements to sidewalks, crosswalks, and paths by designing transportation systems that accommodate special needs (including people using wheelchairs, walkers, strollers, and hand carts); providing covered walkways, loading, and waiting areas; improving pedestrian accessibility by creating location-efficient, clustered, mixed land use patterns; and soliciting and addressing pedestrian security/safety concerns. Costs are similar to that of bicycling and are generally associated with program expenses and facility improvements.

Traffic Calming

Traffic Calming (also called Traffic Management) refers to various design features and strategies intended to reduce vehicle traffic speeds and volumes on a particular roadway. Traffic Calming projects can range from minor modifications of an individual street up to comprehensive redesign of a given road network. Traffic Calming can be an effective TDM strategy in that its use can alter and/or deter driver characteristics by forcing the driver to either use a different route or to use an alternative type of transportation (such as transit, bicycling, walking, etc.). Costs of this TDM strategy include construction expenses, problems for emergency and service vehicles, potential increase in drivers' effort and frustration, and potential problems for bicyclists and visually impaired pedestrians.

Identifying and Using Special Routes and Detours for Emergencies or Special Events

This type of TDM strategy centers around modifications to driver patterns during special events or emergencies. Modifications can typically be completed with intensive temporary signing or traffic control personnel. Temporary traffic control via signs and flaggers could be implemented to provide a swift and safe exit after applicable events.

By capitalizing on the use of these options, the existing vehicular infrastructure can be made to function at acceptable levels of service for a longer period of time. Ultimately, this will result in lower per year costs for infrastructure replacement and expansion projects, not to mention less disruption to the users of the transportation system.

While some of these options may work well in the Polson area, it is clear that some may be inappropriate. Additionally, some of these options are more effective than others. To provide a TDM system that is effective in managing demand, a combination of these methods will be necessary.

6.3 *Conclusions Based on Preliminary TDM Evaluation for the Polson Area*

The object of this analysis is to provide the planners and policy-makers in the greater Polson area with a range of TDM programs, strategies, and estimated impacts in terms of reducing traffic. Information provided will help facilitate a consensus on the preferred TDM program to be included in the Plan update. The following overall conclusions are offered:

- **Employer-based programs will have limited long-term impacts.** Alone, these programs do not sufficiently reduce regional traffic volumes because the Polson area is comprised of relatively small employers that are generally less effective in facilitating commute alternatives.
- **Employer programs should be considered as an interim step.** Even though employer programs are less effective due to the employment composition of the Polson area, a voluntary program, focused on either City, County, or Tribal government, or on large employers, should be considered. A demonstration program would provide local planners and policymakers with valuable information on specific strategies and marketing techniques to encourage commute alternatives. Unlike efforts aimed at the general population, this program should target large employers and work through appointed and dedicated coordinators. The program should be launched by local government (City, County, and Tribal) employers.
- **Land use and non-motorized TDM strategies can be effective.** The implementation of land use policies that are TDM-friendly, combined with improvements to bicycle and pedestrian facilities, can impact all types of travel. The potential impact of these strategies may be greater in the long run than traditional employer-based TDM measures. These measures, considered alone, could reduce vehicle trips and vehicle miles traveled (VMT), although the impacts may be somewhat weather-dependent.