# A GUIDE FOR COMMUNITY PLANNING IN INTERCHANGE AREAS

**Prepared By:**

Wisconsin Department of Transportation

**In Cooperation With**
U.S. Department of Transportation
Federal Highway Administration

**1st Revision 1985**

**2nd Revision 2007** by the Division of Transportation System Development, Bureau of Equity and Environmental Services, Environmental Policy and Community Impacts Analysis Section, Wisconsin Department of Transportation

**Purpose of this guidance and who it is written for:**

This revision provides an update to the Department's earlier version entitled, *"A Guide for Interchange area Planning in Wisconsin (1985)",* reflecting new research on land use planning practices in areas that may be affected by the development of interchange facilities. It is hoped that this guide will assist communities; responsible for making sound land use planning decisions in interchange areas while preserving the safe driving characteristics of our highways. This guidance is not a policy document. It is primarily intended to be used to help guide land use planning in areas associated with new interchanges, but may also be used to help plan for areas involving existing interchanges as well. While this guidance is written primarily for local government (e.g., planning departments), it may also be useful to other professionals and citizens involved in understanding and addressing land use issues associated with the development of interchange facilities.

**Scope of this guidance**:

***This guidance does not directly address the process or policies for the siting or design of interchange facilities within the state of Wisconsin***. Rather, the guide addresses land use considerations and issues that local officials **may wish to consider** after design and siting decisions (locating interchange facilities) have been made by the Department**.** For questions regarding the need/criteria for a proposed interchange facility in your area, please contact the appropriate planning chief at one of WisDOT's Regional Offices identified in Section 5 of this guidance.

**Acknowledgements:**

The guidance was developed in cooperation and consultation with other WisDOT divisions and units including WisDOT regional planning and environmental staff, the Division of State Patrol Bureau of Transportation Safety and the Division of Transportation Investment Management, Bureau of Planning and Economic Development and Bureau of State Highway Programs. Early review of this guidance also took place with representatives of the Federal Highway Administration (FHWA), and key representatives of Wisconsin Metropolitan Planning Organizations (MPO) and Regional Planning Commissions (RPC). This was to ensure that early input was received to help shape this document, particularly from those local agencies who will be using the guidance and who are directly affected by the interchange development proposals.

The Environmental Policy and Community Impacts Analysis Section of the Bureau of Equity and Environmental Services (WisDOT, Division of Transportation System Development) revised this guidance and is responsible for its content. This section serves as the Department's lead for land use/transportation policy issues especially related to project development and the National Environmental Policy Act (NEPA).

In addition, significant contributions to this guide (see esp. "Bicycle and Pedestrian Accommodations") were also made by former WisDOT, Southwest Region-Madison employee, Jessica Bullen who passed away in July of 2005. We very much appreciate her input to this guide and her previous work as a valued employee and professional planner.

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## Section 1: The Interchange Challenge

### The Significance of Interchanges

Interchanges create opportunities and challenges for communities with respect to land use and economic development. The development of an effective highway system, designed to carry large numbers of vehicles rapidly and safely over long distances, requires smooth functioning of the interchanges that connect the main highway to the intersecting roadways. This holds true for both freeway and non-freeway interchanges. With good local planning and land-use control ordinances, an interchange area can be an attractive, efficient community asset. Without proper planning, interchanges tend to become eyesores because of cluttered signs, haphazard land use, and traffic congestion--a real headache for the motorist, the landowner and local officials. The goal, then, is to bring the development of a highway interchange and surrounding land into harmony.

### Issues with Interchanges

Ideally, the vision of the community determines land development patterns in interchange areas. Communities may wish to just to preserve interchange areas as open space consistent with the vision of the community. However, a freeway system, by combining high volumes of traffic with totally controlled access to roadside properties, often concentrates land use effects at the interchange areas. On highways where access is limited to interchange areas, there is often pressure for development, particularly of highway service facilities, to take place at these points. The same type of pressure for development may also take place at non-freeway interchanges. In addition to providing access to existing land uses along the intersecting highway, the interchange may also generate its own special development patterns. These often include the motorist services--motels, service stations, and restaurants--which are necessary to serve the long-distance traveler. In addition, many “big box” and other large, regional-scale developments are also locating along interchanges.

Uncontrolled growth, however, can reduce the traffic-carrying capacity of the interchange. The resulting traffic congestion will reduce the access to adjacent property and reduce the potential for successful development. From the local point of view, uncontrolled development can decrease land values in the area and adversely affect the nearby community and its citizens. Conversely, it could also possibly result in higher land values.

Improper street design can also reduce the traffic-carrying capacity of the intersecting highway, increase hazards (e.g., for bicyclists and pedestrians), and limit the land development potentials in the vicinity of the interchanges. Uncontrolled growth and proliferation of signs and billboards can serve as an unattractive gateway to a nearby community. Local communities may wish to utilize available controls to focus development and limit the proliferation of signs and billboards.

With more than 560 interchanges along the existing state trunk network, the potential already exists for interchange area land-use and traffic problems in many areas. It is important that existing, as well as any future, highway interchanges facilitate the movement of traffic as designed through the interchange including traffic associated with development activity in these areas.

## Who Is Affected?

Local government officials, private citizens, landowners, motorists, as well as other taxpayers all have an interest in insuring sound planning and development of the interchange and its surrounding areas. Some examples of issues in interchange areas:

- New commercial development in interchange areas can be considered both positive and negative depending upon what the community wants to achieve. For example, new commercial development at interchanges can sometimes compete or conflict with existing commercial areas. This may be viewed as positive from the consumer's point of view because new businesses and new services may result. However, local communities may wish to assess how development in interchange areas might impact existing commercial businesses as well as “quality of life issues” from a community-wide perspective.

- Interchanges can help to better facilitate traffic and reduce congestion. This can also have a positive impact on air quality as vehicles spend less time idling at stops or in slow moving traffic.

- If inadequate building setbacks are permitted along the intersecting highway, buildings may crowd the highway right-of-way. As traffic volumes increase, it may become necessary to increase the capacity of the roadway. If the right-of-way for widening the roadway is not available, a new highway paralleling the old one must be built. This type of poorly planned development can be inefficient and prove more costly.

- If there are no restrictions on access to the intersecting highway, the motorist and the adjacent properties may be adversely affected. Not only can congestion and hazardous driving conditions develop on the intersecting highway, but also traffic may eventually back up on the ramps and interfere with traffic on the freeway itself. Development/economic activity may be stymied and a dangerous situation can result as traffic becomes more congested.

- If advertising signs are not restricted, their collective appearance may adversely affect the community and landowners. An excess of signs, billboards, and posters may lower property values in the area and the resulting "eye confusion" can detract not only from the impact of necessary signs, but the surrounding areas as well.

- Bicyclists and pedestrians may not be able to safely and comfortably travel in interchange areas if accommodations are not made for non-motorized transport.

- The development of interchanges may also create environmental justice impacts affecting minorities, low-income groups and special populations. These issues may involve dislocation or relocation issues that could occur not only from the interchange facility, but also from increased, commercial development that may occur in the area.

These examples illustrate how interchanges can both positively and negatively affect land use, land values, employment opportunities, commuting patterns and transportation options, local government, and taxes. If planned properly, interchange areas can help to facilitate mobility consistent with positive economic goals or the overall, planning vision that the community would like to achieve.

## Section 2: The Planning Approach to the Interchange

### The Purpose of Interchange Area Land Use Planning

Interchange area land use planning should be a part of the community's comprehensive land use and transportation plans. The purpose of planning for an interchange area is to guide and control development in a reasonable manner, not necessarily to prohibit or restrict its growth. In addition, proper planning is necessary to prevent situations that will limit the economic benefits to a community or that result in unnecessary financial burdens upon local governments.

Good planning evaluates the advantages and disadvantages of potential development within a framework of background information and analyses that takes into consideration the effects of development. Interchange area planning can help answer such questions as: What types of development should be encouraged? Where should development be located? What system of local roads and utilities will be required?

Local government has the authority, the means, and the responsibility to formulate policies, prepare plans, and adopt land use controls. Integrating interchange area planning with plans involving the local road network provides for a more unified and resource efficient approach.

County, regional, and state agencies also have information and personnel to assist in planning. Coordination with the agencies on the long term planning for interchange areas, as well as the community's transportation network can be a beneficial approach to reducing congestion and safety concerns while providing for economic development.

This guide can help local communities to achieve the full potential of interchanges. It recommends organizing and planning procedures and lists sources of help. The responsibility for starting and maintaining the planning program, however, is at the local level. Most of the benefits will be at that level as well.

**Consequences of Not Planning Around Interchanges**

Through lack of planning, problems and issues have occurred at interchanges and approaches to major highways all across the United States. These situations can occur unless efforts are made to appropriately guide that development.

- INCOMPATIBLE GROUPINGS OF LAND USES. Each major land use has a set of characteristics, which can have impacts to other uses. For example, industrial firms that generate heavy traffic or large amounts of noise, smoke or odors will make an area unsuitable or undesirable for residences or retail businesses. On the other hand, scattered residences make it difficult to assemble suitable sites for large commercial and industrial development. Rural planning and zoning may not anticipate the variety of urban uses attracted to highway interchange areas and incompatible development often results.

- STRIP DEVELOPMENT ALONG THE INTERSECTING HIGHWAY. Shallow strips of development often include only those lots fronting on the intersecting highway. When access to the parcels behind the strip development is eliminated, they become land-locked and lose their development potential. Strip development also increases the cost of installing utilities.


Photo courtesy of Ross Moldoff from his article, "Controlling Strip Development," in the Planning Commissioners Journal (Winter, 2004).

- UNATTRACTIVE APPEARANCE. Interchange development should fit into the surrounding landscape. Disregard of the natural setting and an unrestricted profusion of signs, billboards, and utility lines can make the area unattractive. Too many signs confuse the motorist seeking necessary directions, and a cluttered landscape creates an unsightly front door to the community.

- INSUFFICIENT BUILDING SETBACKS. Where setback lines are not established, structures including parking lots, may crowd up to the highway right-of-way line. This can obscure the line of sight required for safe driving, eliminate the possibility of service road construction, and cause unnecessary private and public expense if the roadway is subsequently widened and the buildings must be removed. Not only do

adequate setbacks provide room for service roads, but they also provide for open space and aesthetic development.

- AN EXCESSIVE NUMBER OF ACCESS LOCATIONS. Each driveway, street connection, or access location on the intersecting highway creates its own set of potential traffic conflicts. These conflicts can and do cause congestion and unsafe driving conditions, so access should be controlled in highway interchange areas. Unrestricted access will seriously curtail the traffic-carrying capacity of the highway and, in turn, may reduce the development potential of the area and the effectiveness of the highway in serving as the main artery into the community. Studies have found that crash rates increase with higher densities of access points.

- EXCESSIVE TRAFFIC GENERATION. Each business in the interchange area will generate local traffic. When the intersecting highway is already carrying a heavy volume of through traffic, local traffic created by new development may greatly increase congestion. In such cases, the traffic congestion potential of each new development must be weighed against its positive contributions to the community.

These problems are not all unique to the interchange areas, but they can cause rapid obsolescence of an expensive highway system and cause significant safety issues that can endanger pedestrians, bicyclists and motorists. The technique of interchange planning described in this guide can aid in preventing these problem situations and in weighing alternative development policies.

## How Does Planning Work?

Planning is a continuing process of resolving community issues or area problems by thinking ahead about the future. By anticipating and guiding growth, planning can help achieve an orderly pattern of development that takes into account a community's needs and preferences. Land-use planning and implementation through zoning and ordinance controls give the citizen, through local officials, a voice in the future of their community. It allows people at all levels of government, business interests, and citizen interests to work together for the benefit of all. Goals and visions identified through planning efforts are achieved through regulations (e.g., zoning), capital investments, public good will and interagency and inter-governmental cooperation.

In Wisconsin, local governments, in cooperation with regional planning agencies and metropolitan planning organizations, prepare comprehensive plans, determine local transportation choices and make local land use decisions (such as zoning changes). Private interests, in turn, propose development and physically develop land (such as housing subdivisions) in accordance with the comprehensive plan and local and state regulations.

WisDOT plans, designs and constructs state transportation facilities to support regional and state traveling needs of the public and commerce. These multiple layers of influence create a challenging set of issues to coordinate for interchange areas.

**Comprehensive Planning Law**

As required by the state statutes, Wisconsin's comprehensive planning law passed by the Wisconsin State Legislature in 1999, local governments (including cities, villages, towns with village powers, and counties) are required to prepare and adopt comprehensive plans by 2010 in order to make valid land use decisions, including official mapping, subdivision regulations, and zoning. Section 66.1001 of the Wisconsin Statutes describes these requirements. To briefly outline the statutes, communities must:

- Prepare and adopt a public participation plan.
- Prepare a comprehensive plan with the nine required elements: 1) issues and opportunities; 2) intergovernmental; 3) land use; 4) utilities and community facilities; 5) economic development; 6) housing; 7) agricultural, natural and cultural resources; 8) transportation; and 9) implementation.
- Adopt the plan by ordinance and include the required public involvement.
- Send both draft and final plans and all future plan amendments to various entities:
    - All governmental bodies within the community, such as Metropolitan Planning Organizations (MPOs), counties, school districts, etc.;
    - Adjacent communities and the local library;
    - Department of Administration;
    - Regional planning commission (RPC) where located (see *Planning Contacts*).
- Certain land use actions and procedures must be based on its adopted comprehensive plan by year 2010. These include:
    - Official mapping established or amended under s. 62.23;
    - Local subdivision regulation under s. 236.45 or 236.46;
    - County zoning ordinances enacted or amended under s.59.69,
    - City or village zoning ordinances enacted or amended under s. 62.23 (7);
    - Town zoning ordinances enacted or amended under s. 60.61 or 60.62; Zoning of shorelands or wetlands in shorelands under s. 59.692, 61.351 or 62.231.
- Revise the plan at least every ten years; however, revisions can be made through an ordinance amendment process.

For more information and resources on the comprehensive planning law,

See: http://www.dot.wisconsin.gov/localgov/land/comprehensive.htm.

## Who Can Plan?

### Local Planning Agencies and Native American Tribes

The major responsibility for carrying out interchange area planning rests with local, tribal and county authorities. They are the governmental jurisdictions most directly affected by the development of the interchange area. The county may well be the most appropriate agency to deal with the issue since, in most cases, the issue encompasses more than a single interchange and therefore the relationship between all interchanges in the county should be considered. Not all interchanges have the same development potential and the proposed uses at one interchange should be considered in light of existing and proposed uses at other nearby interchanges.

Native American Tribes may choose to use interchange areas for economic development (e.g., in conjunction with casinos). The interchange by itself may help to facilitate traffic/increase mobility as part of the development. On the other hand, tribes may have concerns about the need to preserve the historic/cultural values of tribal lands. Therefore, instead of promoting development in interchange areas, some tribes may wish to keep the land use as undisturbed, open space.

In addition, Metropolitan Planning Organizations (MPO) also can have a significant role in the planning of interchange areas. Under federal law, MPOs are required to prepare a long-range transportation plan every five years. The functionality of interchanges and connecting roadways is an important component of these long-range plans.

The job of preparing development plans and appropriate land use guidance measures for their implementation could be very time-consuming and ineffective if undertaken without professional assistance. Therefore, whenever available, professional planners should be given the task of studying the impact of highway interchanges within its jurisdiction, of preparing the interchange area plans, and of recommending the land use controls necessary for implementing the plan.

The Wisconsin Statutes provide enabling legislation for planning. The local planning agency, commonly a city or county planning commission, is created by the local governmental body. The state laws also prescribe the basic responsibilities of the planning agency as well as some of the implementation tools that the agency may use in carrying out the plan. The Wisconsin Department of Administration in Madison should be consulted for advice on establishing a planning agency or consolidating planning activities, such as combining the county planning and zoning functions.

The local planning agency acts as an advisory group to the local governmental body, through a plan commission or zoning committee. The agency can inform policy decisions of the governing body by integrating community goals with the best estimate of future conditions and needs. The planning agency should also include a comprehensive, public involvement process in the development of any plans to take into account the opinions of landowners, local residents and businesses, public agencies and officials. Public involvement is required to be part of any comprehensive planning effort. If planning is new to the municipality, the planning agency will provide general planning background to the local governing body as well as to the citizens, preparing the entire community to share in setting interchange development goals.

Although most interchange area planning rests with the county and local government, the Department also plays a significant role in the planning for state trunkline highway facilities. Within metropolitan areas, the Department and MPOs share the primary planning roles for these facilities. Therefore, in order for interchange area planning to be successful, a cooperative effort between the State, RPCs, MPOs and local communities needs to take place.

### Planning Assistance for Interchanges

The local planning agency can obtain professional assistance in several ways:

- Assign work to resident planner or planning staff employed to handle the technical aspects of planning;
- Engage qualified private consulting firm; or
- Seek assistance from existing regional and state planning agencies.

Most areas of the state have existing county and/or regional planning agencies with resident planning staffs or professional planning consultants under contract. Local planning groups in these areas should maintain close contact with the county and/or regional agencies, which can be of great assistance in preparing and implementing the interchange plan. Established regional planning commissions are shown on the map at the end of this guide. Contacts for these agencies are also listed at the end of this publication.

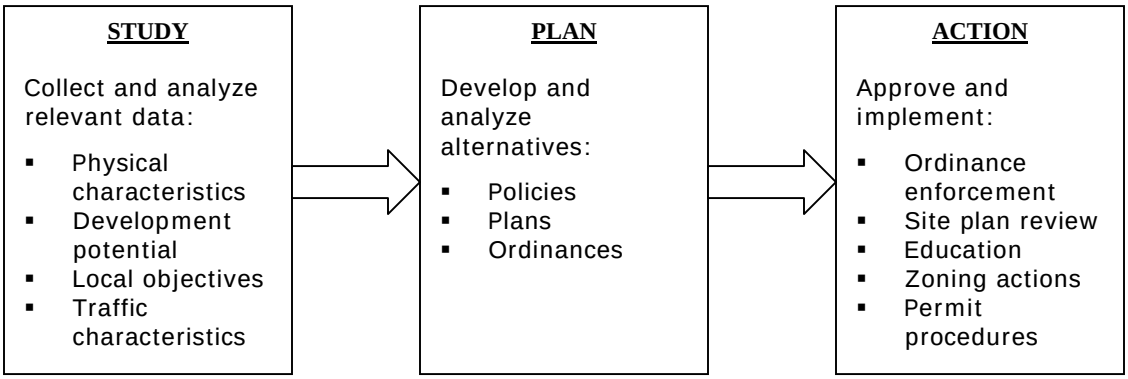
WisDOT's Regional Offices and Bureau of Equity and Environmental Services are additional sources of assistance in interchange area land use planning. In addition, the county extension agents can provide guidance. Contacts for these agencies are also shown at the end of this publication.

## Section 3: Planning in the Interchange Area

### Interchange Planning Process

Interchange area planning should be a part of a comprehensive planning program for a community, county, or region. Detailed plans for the areas adjacent to interchanges should be part of this broader comprehensive plan. In areas where strong development pressures are already being felt, the local planning agency may find it necessary to concentrate its initial work program on interchange planning.

The following figure summarizes the three basic steps in the interchange planning process. Through this process, the local planning agency, working with technical assistance agencies and local developers, achieves a program of study, plan, and action that is continuously informed by public involvement. This guide is organized in accordance with these three basic steps.



## Interchange Land Use Planning Objectives

The special policies and controls devised for the interchange area have the following broad objectives:

- Provide for the most appropriate land uses;
- Insure the orderly and productive development of the area;
- Protect the traffic-carrying capacity of the interchange and its connecting roads;
- Provide an attractive gateway to nearby communities; and
- Provide for bicyclist and pedestrian circulation and overcoming barriers.

Land use tools, such as zoning and access control, together with the policy guidelines developed through the planning process, are the means by which the interchange plan becomes reality.

## What Should Be Planned?

In planning for interchange areas, **land use** and **traffic** are major elements that must be considered. These two elements are closely related and must be considered at the same time by the planning agency although they are discussed separately here. Each new land use will change the traffic patterns on interchange area roads. New traffic may be drawn to the site and traffic between the new development and other businesses in the area may increase. These short trips affect the traffic movements and volumes on the local street system and on the intersecting highway, perhaps requiring highway modifications.

Improvements to the interchange road system may, in turn, affect the surrounding land and change land use values of the adjacent properties. For instance, limited access enforcement in the interchange area may require the development of the local street system to increase access to interior sites and opens new land for development without comprising the integrity of the interchange. This interrelationship of land use and traffic must be recognized in the planning process, so that proposed changes in one element create the expected changes in the other.

## Land Use

### Types of Land Uses Attracted

Interchange areas attract almost all types of land development. Each land use type--commercial, residential, industrial and recreational--finds desirable features in interchange locations. There are three major factors that will influence decisions to locate at an interchange:

1. The market or demand for the use and the land;
2. The physical characteristics of the site including infrastructure; and
3. Local objectives as embodied in plans, policies and regulations.

Each potential land use should be considered in terms of these factors.

<u>Highway Service Facilities</u>

At interchanges on Wisconsin's highways, a primary demand in new development has been for highway service facilities such as service stations, restaurants, motels, and related

motorist services. Such development is particularly attracted to high volume crossroads that in many cases are the major entrances to urban areas, and the demand for these services will grow as traffic increases.

Commercial, Residential, and Industrial Potential

Many businesses such as those located in regional shopping centers do not provide highway services but are based in interchange areas due to a sizeable nearby population as well as good highway access. Especially near urban areas, more general retail businesses may also desire interchange locations. Ample room for parking and the advertising value of a location within sight of a well-traveled highway attracts commercial uses.

Where a growing community is near the interchange, there will be a general demand for new residential land. In those instances where an interchange provides faster and easier access to the city (via the freeway or the intersecting highway), adjacent lands may have increased value for suburban housing development.

Improved access and efficient transportation may also attract light industry and highway-oriented warehousing to the interchange area. In addition, land costs are usually lower than those inside the city, allowing new plants to acquire sufficiently large sites for building structures, parking and future expansion. The advertising value of a location within sight of a well-traveled highway is often significant in the choice of a new industrial site.

Industries, shopping centers, and similar developments, all of which require large tracts of land, may compete with highway service uses for choice sites at major interchanges.

Recreational Facilities

Much of rural Wisconsin continues to have a particular potential for recreational development. Recreational areas were among the early developments at Interstate interchanges. Recreational developments include campgrounds, ski hills, stables, specialty shops, restaurants, water slides and wildlife displays.

**Interchange Land Use Development Patterns**

The following descriptions are examples of three different scenarios for interchange development.

Rural Interchange Development

In rural locations, the interchange area may experience little to no development pressure. The use of the land immediately near the interchange may be the same as surrounding properties. Typically the existing land use is either agriculture or in a natural condition. If or when development occurs in a rural area, it is typically in one quadrant only and it either a highway-dependent business (such as a gas station) or serves local rural interests (such as an agricultural supply store).

Mixed-use Interchange Development

Mixed-use development occurs in higher population areas and provides a mix of land uses and service including residential, retail, and commercial businesses. Mixed-use is often convenient for consumers because it provides a wide variety of services in a clustered location. These are typically high traffic volume businesses and that attract a lot of traffic into the interchange area. Depending on the location and site layout of the development relative to the interchange, mixed-use development may have a moderate to high impact on the interchange's functionality.

Business/Industrial Park Development

Business/industrial park development often occurs near interchanges because of their proximity to one or more major transportation facilities. Convenient access to a major highway provides business park tenants with an easy way to link customers and employees to their base of operations. For industrial park tenants, interchanges are an attractive location because they minimize the distance semi-trucks must travel in order to reach the highway or Interstate System. This proximity decreases travel and delivery time predictability for goods and services. Locating industrial parks near interchanges can be attractive to local communities because it minimizes the amount of semi-truck traffic on local roads and locates high noise generating facilities away from residential areas.

## Location Criteria

Four basic criteria for locating individual land uses within an interchange area are visibility, accessibility, compatibility, and land suitability.

Visibility

Highway service facilities are designed to serve the traveler. A basic consideration in planning their location is that they be visible from the freeway so as to give the driver time to make a decision and safely exit for service. If there is a demand for highway service facilities, the sites that are most visible from the freeway or near the off-ramp should be considered and reserved for such use if appropriate.

Accessibility

Highway service facilities also require prime accessibility. In general, they should be accessible from the first access point along the intersecting highway. Access by right-hand turns from the major traffic flow and location between the freeway and a nearby urban area are also advantageous.

Intensive development at interchanges should be served by an internal local road system, as illustrated on page 21, to collect the local traffic and bring it into the intersecting highway with the least possible conflict with through traffic. Businesses that create substantial traffic flows may wish to locate close to the intersecting highway to avoid overloading the collector road. Principles for development of residential access in relation to the state trunk highway system have been well established by the administration of the state's platting statutes.

Interchange area access becomes complex where there are nearby urban areas with independent growth patterns and street systems of their own. In this case, the following principles may apply:

- Plan and guide residential land so that the intersecting highway or other arterials will not split potential neighborhoods. Failure to plan in this manner may leave schools and other neighborhood facilities on one side and dwelling units on the other.

- Encourage industry to locate where it will be readily accessible from local arterials. An optimum industrial site might require both rail and highway access.

- Specialized businesses that serve large trade areas should locate near major highways. Retail and service establishments with smaller trade areas do not require sites at major interchanges. By restricting retail businesses to a single quadrant of the interchange, store-to-store and other local movement can be accommodated with little disruption to through traffic on the intersecting highway.

- Locate other uses with major parking and loading facilities close to the local arterial system, such as park and ride facilities.

Compatibility

Activities of adjacent developments may conflict. For instance, when a 24-hour truck stop locates next to a motel, the noise and light may disturb sleeping motel guests. Measures to achieve compatibility could include buffering residential areas by physically separating them from non-residential activities, and using arterial streets as boundaries between functional areas. Large lots and selective landscaping also help to separate activities.

From a homeland security perspective, the location of certain at-risk industries (e.g., chemical plants) should not be planned adjacent to highways and interchange areas. Sufficient setback of these industries away from highway facilities is reduces potential risks and threats.

Land Suitability

Topography and soil conditions are important considerations in site selection. Proper site planning respects natural topographic features and minimizes both construction and long-term maintenance costs. Keep the following objectives and principles in mind:

- It is important to determine subsurface soil conditions in order to know if excavation is practical, whether installation of on-site water supply and sewage disposal facilities is possible, what the drainage problems might be, and what structures can be supported.

- Consideration must also be given to the surface and subsoil drainage of adjacent land. Areas that are subject to flooding or have poor drainage can be reserved for recreation, agriculture or other open space uses; such areas may already be subject to special floodplain regulations. Federal and state permits will also be

required for any development in wetlands. Check with the local planner, zoning administrator or DNR Water Regulation and Zoning Specialist to be sure. If an interchange is being newly developed or redesigned, and there are possible concerns involving drainage issues, consideration may be given as to whether the right-of-way between the ramps and the road itself could possibly be utilized for engineering improvements to mitigate stormwater impacts.

- Differences in grade will determine appropriate locations for streets, utility systems, and types of uses that can be readily accommodated. Since steep lands may be more difficult and expensive to develop, slopes of less than six percent are desirable for commercial and industrial uses. Residential uses can be located on steeper land if carefully sited to avoid erosion and other problems

- Determine the impacts, if any, of development on drainage to highway(s); concentrated runoff can have a major impact to the highway system. Conversely, the impacts of runoff from the highway system to the development should also be evaluated.

### Site Plan Considerations

When planning for development in the interchange area, special consideration should be given to such factors as **site** and **lot coverage** utilizing a unified development approach. Interchange land planning should encourage unified development on adequately sized lots with a small percent of land coverage by buildings.

A business that draws high volumes of traffic should occupy a large area. Several large generators should not locate so close together that the intersecting highway cannot handle the entering and leaving vehicles.

A single large building or a unified group of shopping structures allows for the design of compatible store fronts and signing, joint parking and loading areas, harmonious landscaping, and common pedestrian walkways appropriately protected from the weather.

The beneficial outcomes of using a unified development approach include:

- The promotion of traffic safety through separating large traffic generators;
- The prevention of crowded or cluttered rights-of-way;
- The assurance that adequate space for parking, loading, and future expansion is provided for not only for motorists, but for pedestrians and bicyclists as well;
- The preservation of attractive open spaces; and
- The maintenance of growth/expansion options.

### Scenic Values

The following strategies may help to preserve the beauty and economic value of rural Wisconsin's natural appearance:

- *Relate public and private development to natural setting*. The site plans and structural designs of interchange area business and public facilities can be strong influences in retaining or creating scenic values. Attractive development and other enhancements can help to blend with the natural setting. As the highway network was developed throughout the state, WisDOT also created scenic

overlooks, waysides, and historical markers. Local governments may help to buffer these facilities with parks, campgrounds, and similar areas near interchanges.

- *Use zoning and other land use controls*. Land that has low commercial value or is incompatible with development can be preserved in its natural state by conservancy zoning. The immediate roadside can be protected through a setback restriction prohibiting structures within established distances from the highway right-of-way.

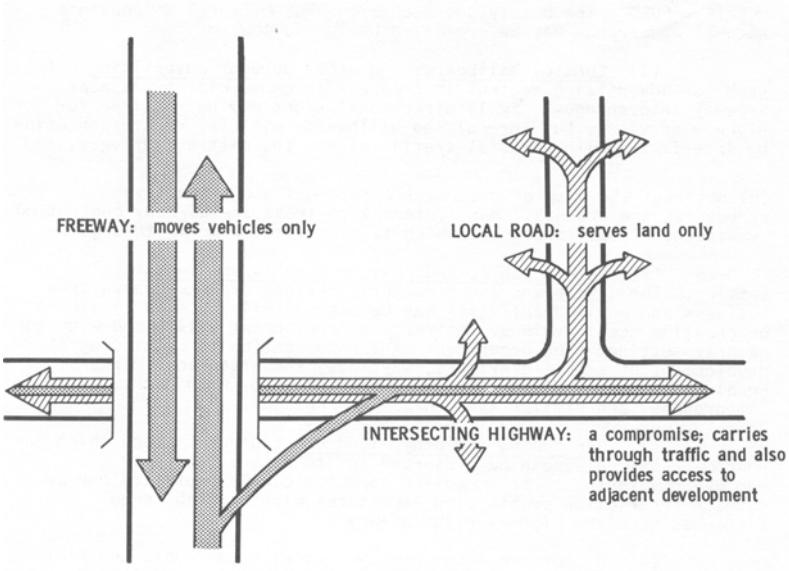
- *Promote roadside beauty*. Local governments, utility companies and civic groups can encourage the use of underground utilities and the retention of natural cover and topsoil. Unattractive nuisance uses such as dumps and auto salvage yards should be prohibited through land use controls or screened where visible from the highway.

- *Control billboards and other outdoor advertising*. The need for advertising control is greatest in developing areas near freeway interchanges. Small directional signs may be required for highway services, but unregulated billboards may: (1) create confusion by interfering with official traffic signs, (2) increase driver distractions, and (3) obstruct the view of natural scenic areas and attractive structures and grounds. Many interchange areas are already controlled by Wisconsin's billboard law, which is discussed later in this guide.

## Highway and Traffic Considerations

Evaluating traffic needs is the second major element in interchange area planning. The following considerations are not divorced from land use requirements, but are discussed here to show their special relationships to the traffic function of the interchange area roadways.

### The Function of Roads




A road system has two basic functions – (1) to allow movement of vehicles and (2) to provide access to adjacent land. Highways are grouped together according to their function of service that they are intended to provide, ranging from a high degree of travel mobility to access of land. The adjacent illustration shows how interchange area roads serve these functions. When the intersecting highway carries through traffic and also provides access to nearby property, competing movements of vehicles can cause traffic conflicts resulting in crashes, congestion and delay. However, if proper local land access roads are provided, the traffic-carrying capacity of the intersecting highway can be preserved and traffic conflicts reduced by having specific roads designed and maintained to accommodate local traffic. Local road access also helps maintain connectivity for non-motorized travel.

### Traffic Generation

Proposed developments should be examined in light of their traffic-generating characteristics. Every development of land in the interchange area generates traffic moving to and from it. As more development occurs and traffic increases, the capacity of the road is approached. The upper limit of land development may be determined by the capacity of the roads. WisDOT regional staff (see “contacts” in section five) can assist in determining existing and potential traffic volumes and road capacities.

Analysis should start before a high level of development pressure is reached, so that alternatives may be considered. For example, some types of land use generate a large amount of traffic compared with the employment, income and other benefits produced, while other uses generate less traffic in relation to their benefits. High traffic generation may be better handled in one particular quadrant of the interchange than in another.

### Access Management

Managing access minimizes traffic conflicts and helps to regulate traffic capacity. Drivers entering and leaving the intersecting highway via the interchange ramps are maneuvering into or out of the main traffic streams, and should not have to compete with vehicles entering or leaving commercial establishments near the ramp taper points. Where driveway entrances are located too close to each other vehicles going from one business to another will block or retard the flow of through traffic, creating congestion and safety hazards.

The following table identifies the statutory authority for access controls at both the state and local levels:

**Table 1: Statutory Authority for Access Controls**

| Device | State | County | Town | Town with Village Power | City | Village |
|---|---|---|---|---|---|---|
| **Driveway permits** | 86.07(2) | 86.07(2) | 86.07(2) | 86.07(2) | 86.07(2) | 86.07(2) |
| **Other access controls** | 84.09<br>84.25<br>84.29<br>84.295 | 83.027 | | | | |

To ensure efficient operations along the crossroad at an interchange, experience dictates that adequate lengths of access control need to be provided. This minimizes potential for queue spill back on the ramp and cross road approaches to the ramp terminus. Increased spacing between access points usually provides adequate distances for weaving on the crossroad, provides space for merging maneuvers, and provides space for storage of turning vehicles at access connections on the crossroad. When signalization is used, proper spacing of ¼ mile will be needed in order for the signals to perform optimally.

To best accommodate the three types of traffic on the intersecting highway (through, on- or off-freeway, and local), access from adjacent property to an intersecting highway **should be permitted only at designated access locations.** The following are some criteria for use in controlling access *(*also, please refer to Facilities Development Manual Procedure 11-5-5, Figure 1 on Page 24)

(1) The first access location beyond the farthest ramp taper point should be a desirable distance of 1,320 feet (1,000 feet minimum) for all routes in both urban and rural areas according to state and federal engineering standards. If access already exists within this area, evaluate either removing that access or restricting it to right-in, right-out only. It may be justifiable to allow interim access until the access use changes or until the traffic volume from the access location justifies a higher level of intersection control than a stop condition (Note: if this is done, site planning will be required to provide alternative access location.

The spacing of succeeding access locations depends on the facility/functional type, and traffic volumes. Typically, the crossroad at an interchange will be functionally classified no lower than a minor arterial. The determining factor for access spacing will be the traffic volume base upon future build out. WisDOT regional office staff can help with access planning. Please do not hesitate to seek out their assistance (see "contacts" in Section five).

(2) The parking area of any development should be set back at least 100 feet from the right-of-way line of the intersecting highway. The setback of the parking area if it is on a state highway should be 110 feet from the centerline or 50 feet from the right-of-way line whichever is greater.

(3) Any local road parallel to the intersecting highway should be set back from the right-of-way line of the intersecting highway, preferably one lot depth, to allow development on both sides of the parallel road and to allow adequate storage of vehicles between the service road and the highway. *Sufficient distance is needed between the service road/crossroad intersection and the arterial/crossroad intersection to facilitate placing signs and other traffic control devices. It is also needed to provide adequate vehicle storage and to separate operation of the two intersections. Try to provide at least 600 feet of separation distance between the service road/crossroad intersection and the arterial/crossroad intersection.* A greater separation may be needed if signalization is required.

Away from the arterial intersection consider the distance separating the service road travel lanes from the arterial travel lanes. Headlight glare, driver confusion about the location of an approaching vehicle and errant vehicles are safety concerns that suggest keeping that distance as wide as practical. In tight built-up urban areas this distance may be as low as 45 feet. In situations that present a safety concern, glare fence or other protective shielding may be required between the service road and the arterial.

(4) Semi-trucks and other large vehicles need to be accomodated where appropriate. However, it may also be prudent to limit the number of intersections that need to be designed to meet the generous, turning standards for large vehicles.

(5) Develop an internal street system, as necessary, to allow full development as well as safe, convenient access to the intersecting highway.

*<u>Important note</u>: For determining the appropriate placement and spacing of a service road from a crossroad (including any related access requirements) it is suggested that an engineering study be undertaken. The engineering study should also take into account the effects of long-term development and not just short-term development in the immediate area.*

**FDM Procedure 11-5-5 Figure 1 (9-23-05).** This diagram illustrates the criteria to consider when deciding whether and how to control access. It is recommended also that the appropriate WisDOT regional office be contacted for current recommended access control criteria.

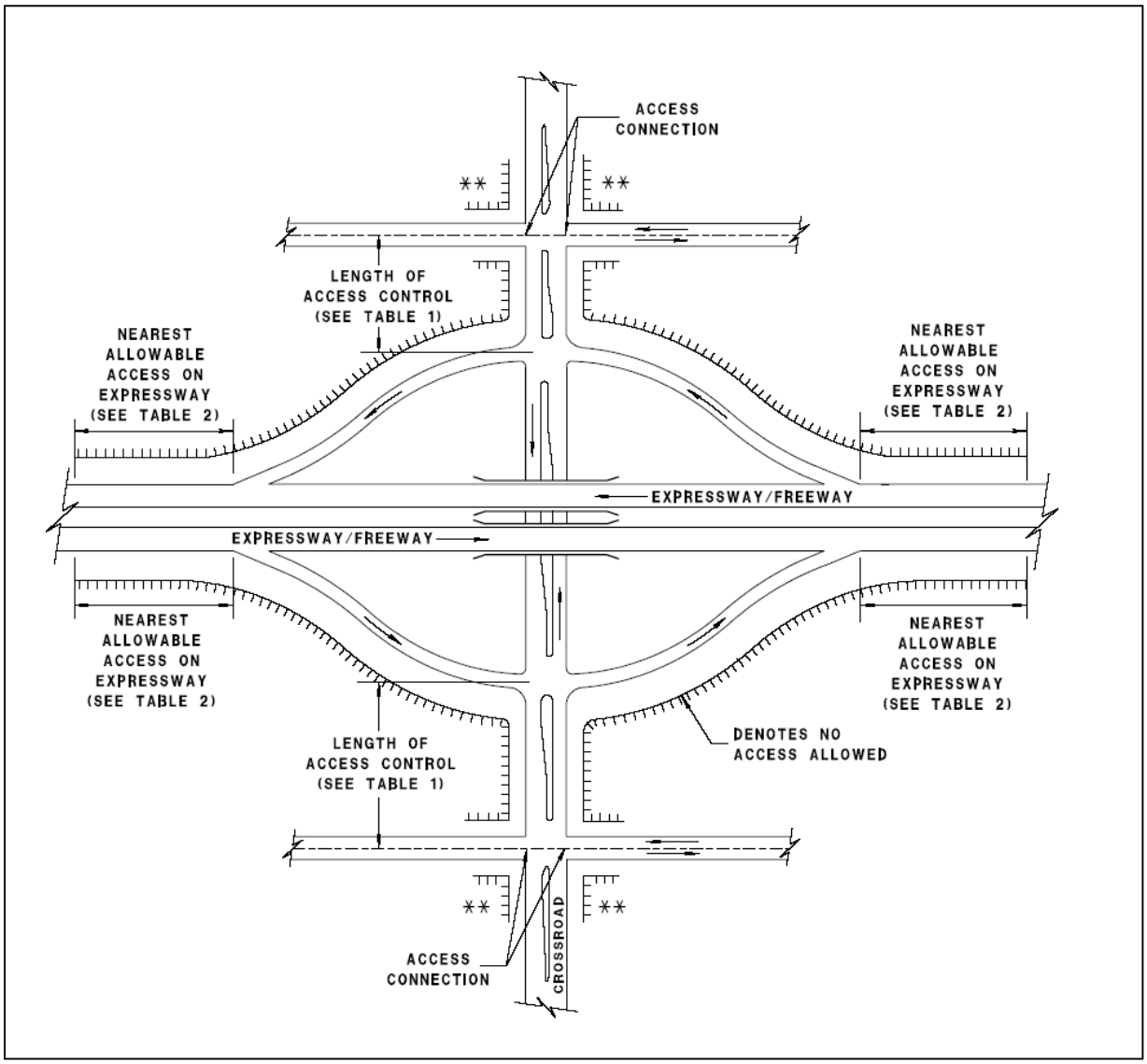



TABLE 2 - Distance of Access Control on Crossroad

| Area Type | Desirable | *Minimum |
|---|---|---|
| Rural or Urban | 1,320 ft | 1,000 ft |

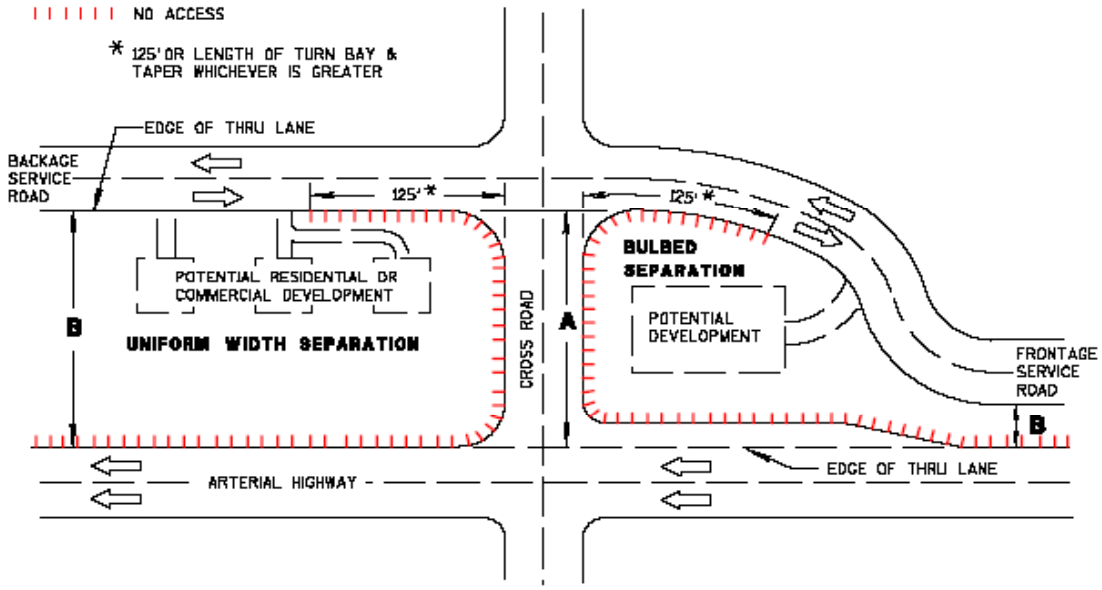
TABLE 3 - Distance of Access Control on Expressways

| Area Type | Median opening at at-grade intersection | Desirable | *Minimum |
|---|---|---|---|
| Rural or Urban | **None** (intersection is right-in and/or right-out) | 2,640 ft | 1,500 ft |
| | **Full or restricted** (allows left-in, and/or left-out, and/or thru movements | 2,640 ft | 2,640 ft |

* An approved traffic impact analysis is required to justify a less than desirable distance of access control. See text.

**Access control here is based on the functional area of the intersection. See Procedure 11-25-1.

**Procedure 11-25-45 Figure 1 (9-03-04).** This diagram illustrates the criteria to consider when deciding separation distances involving service roads and arterial highways.




| Min. Distance A[1] (stop control) | | |
|---|---|---|
| Crossroad Design year AADT | Distance (ft) | |
| | Urban | Rural |
| < 100 | 150 | 300 |
| 100 – 1,000 | 300 | 300 |
| > 1,000 | 600 | 600 |

| Distance B[2] | | | |
|---|---|---|---|
| Urban | | Rural | |
| Des. | Min. | Des. | Min. |
| 85 ft | 45 ft | 115 ft | 85 ft |

[1] References. NCHRP 420, pages 121 – 127; 2001 GDHS, pages 729-732.
[2] Greater distances may be warranted where noise barriers, berms or landscaping are located along the arterial. Distance 'B' for a backage road does not necessarily equal Distance 'A' along the crossroad.

**Setbacks**
A building setback line developed by planners and implemented by local government defines the area between a highway and nearby buildings within which no structure may be erected. This open area, as preserved by setback requirements, is important for several reasons:

- SAFETY. Unrestricted encroachment of buildings, signs or other structures near the edge of the highway obscures the driver's vision and distracts him unnecessarily.

- FUTURE CONSTRUCTION. Setbacks provide space for future service road construction or widening of the intersecting highway, allowing future improvements with less disruption to the landowner and lower costs to the public.

- AESTHETICS. Setbacks can preserve a visual path along the roadway and create an openness that permits vehicle occupants to view the surrounding landscape and man-made landmarks.

WisDOT's regional office (see "contacts" in Section 5) should be contacted early for guidance and current standards before establishing setbacks.

**Intersection Sight Distance (ISD), Vision Triangles, and Vision Corners**

"Intersection Sight Distance" (ISD) is the distance for which there must be unobstructed sight along both roads of an intersection, and across their included corners, that is sufficient to allow the operators of vehicles approaching the intersection or stopped at the intersection, to safely carry out whatever maneuvers may be required to negotiate the intersection. Intersection Sight Distance is required for all at-grade intersections. Intersection sight distance is ensured by establishing a clear sight window across each of the included corners of an intersection (please see diagrams on the following 3 pages).

A "vision triangle" is an additional clear sight window for intersections with stop sign control on the side road and for signal controlled intersections. Its purpose is to provide an opportunity for speed adjustment or evasive maneuver by a vehicle on the major highway if a vehicle on the minor road violates the traffic control. In other words, a vision triangle is a supplement to, and not a substitute for intersection sight distance. ISD must be provided at all intersections whether or not a vision triangle is provided.

A "vision corner" is defined as either:

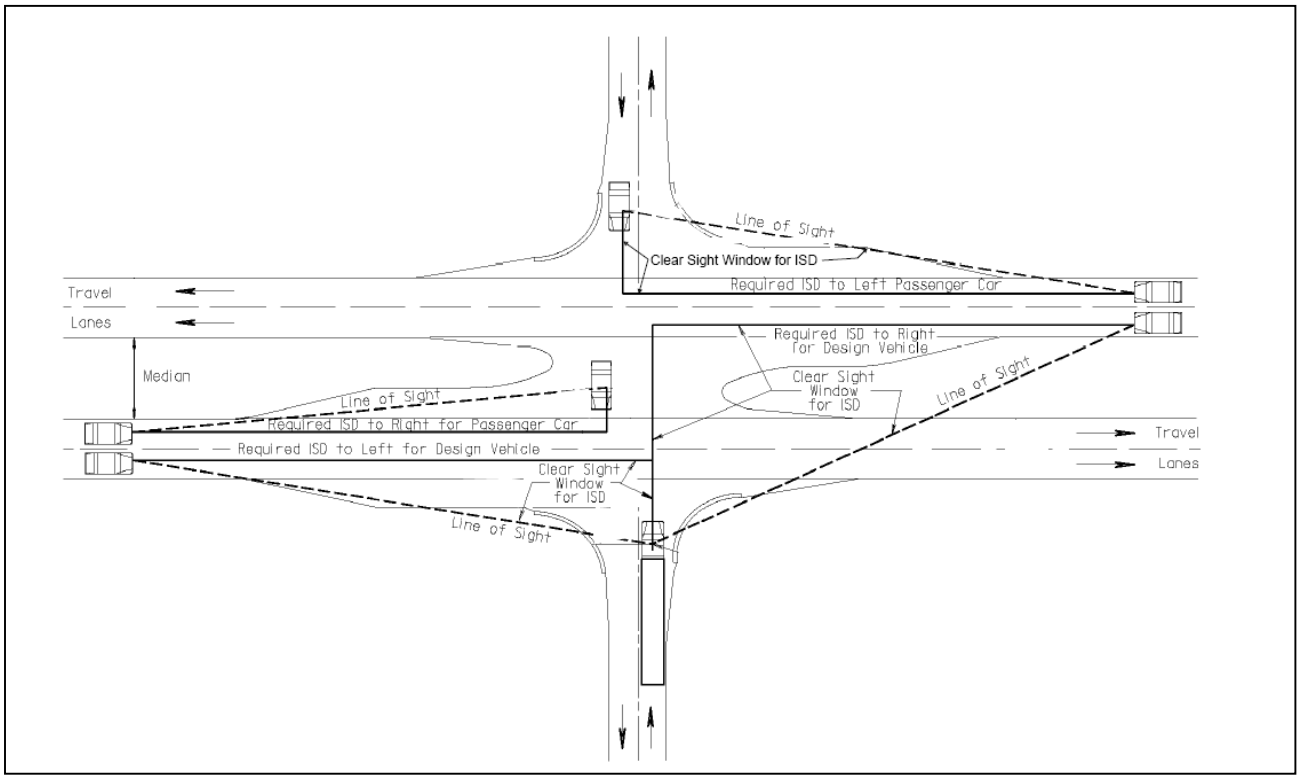
- The clear sight window for intersection sight distance (ISD) at intersections where a vision triangle is not provided, or
- The combination of the clear sight window for ISD and the clear sight window for a vision triangle.

A vision corner needs to be kept free of any structure or object of natural growth (usually 30" in height) that would constitute a substantial or prolonged obstruction to the view of motorists. Vision corners are not directly used to restrict access. FDM 11-25-1 includes guidance on "corner clearance" which is the distance that is provided between an intersection and the nearest driveway.
Additional guidance can be found in Procedure 11-10-5 at:

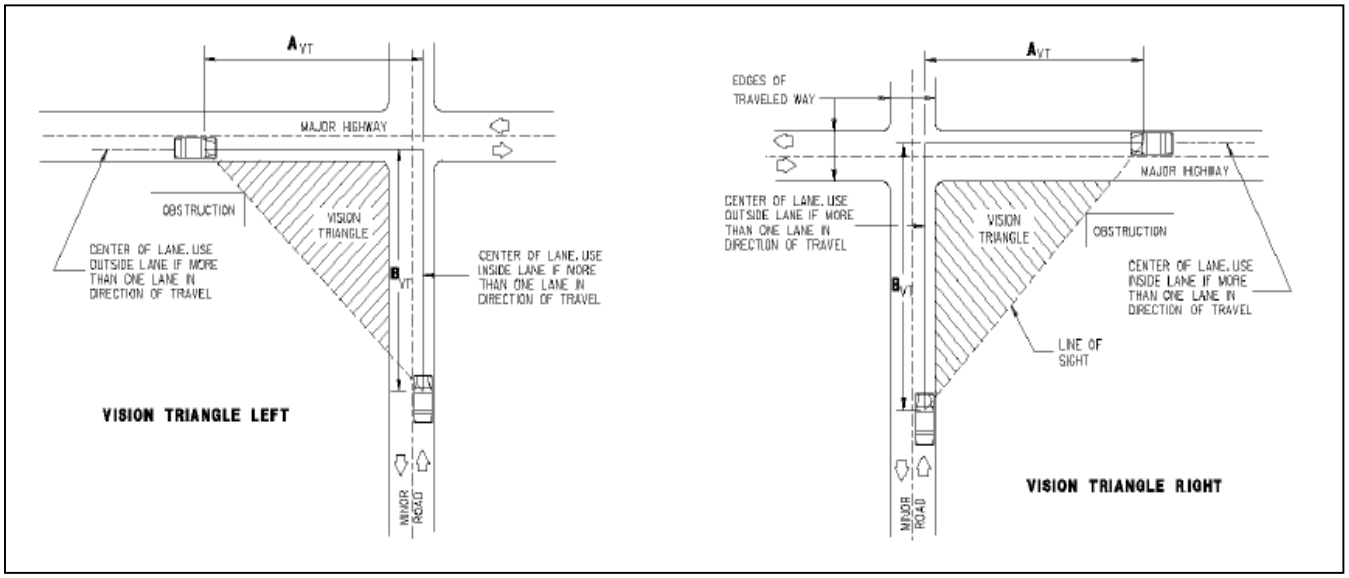
https://trust.dot.state.wi.us/static/standards/fdm/11/FDM11.pdf

Please Contact WisDOT's regional office for assistance in determining appropriate vision corners (see "contacts" in Section 5).

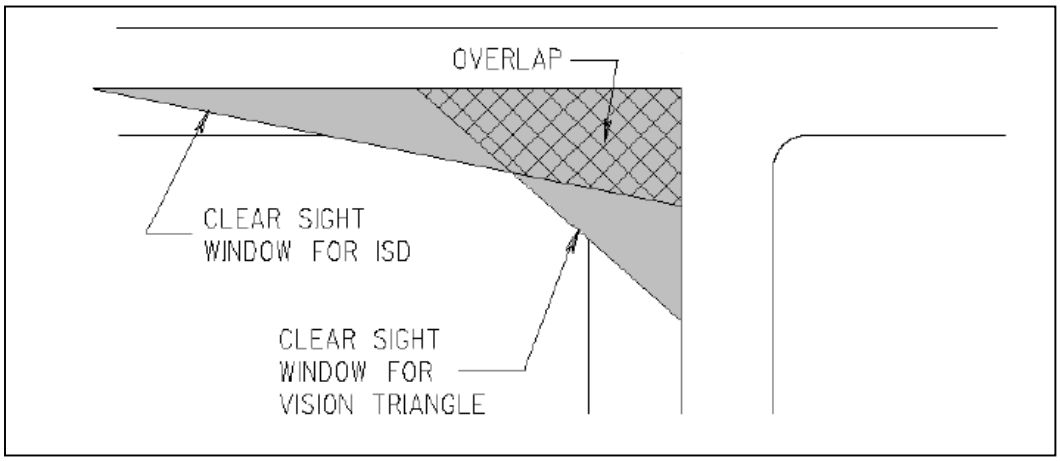
**Intersection Site Distance** (Source: WisDOT, DTSD, Design Standards and Methods Unit).



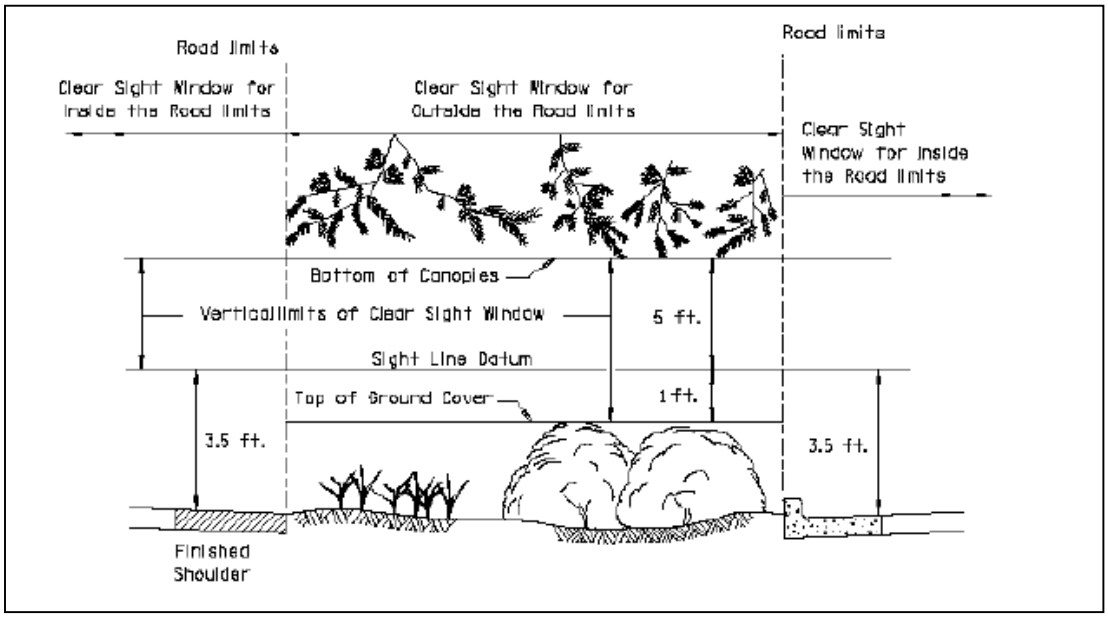
**Vision Triangle** (Source: WisDOT, DTSD, Design Standards and Methods Unit).



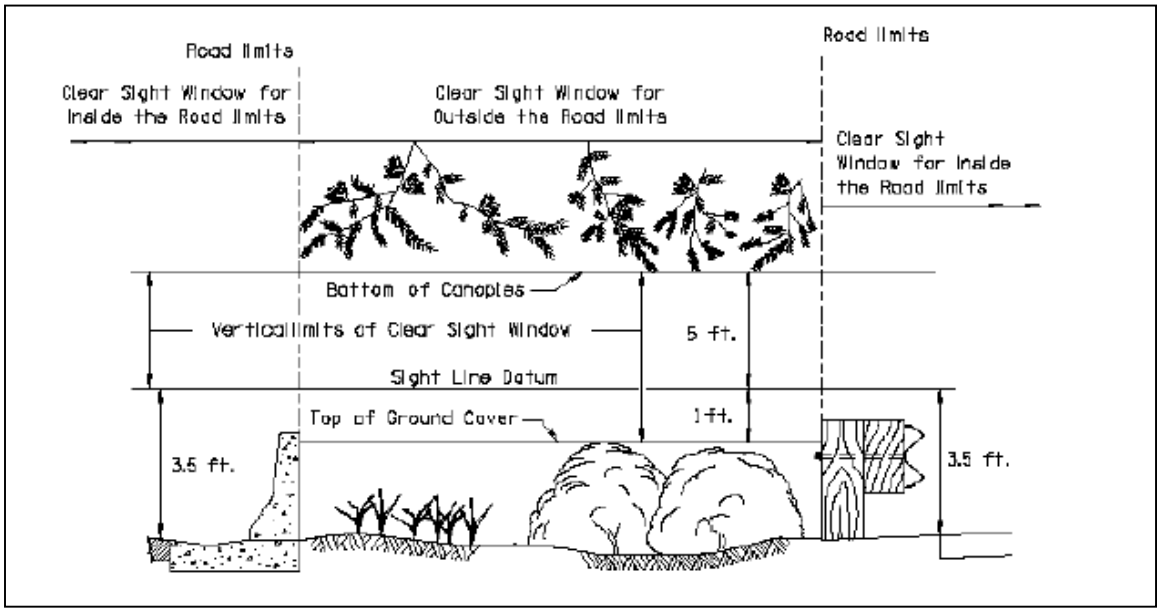

**Vision Corner at an Intersection where a Vision Triangle is provided** (Source: WisDOT, DTSD, Design Standards and Methods Unit).




**Clear Sight Window Vertical Boundaries –Diagram 1** (Source: WisDOT, DTSD, Design Standards and Methods Unit).



**Clear Sight Window Vertical Boundaries – Diagram 2** (Source: WisDOT, DTSD, Design Standards and Methods Unit).




**Parking**

All parking areas should provide sufficient space for on-site turning maneuvers and adequate entrances and exits to local streets. In addition, parking must be consistent with the 1990 Americans with Disability Act (ADA) for providing accessibility. Parking areas should be set back 100 feet off the intersecting highway and located so that parked vehicles do not obstruct driver visibility. Each parking space should be a minimum of 8 feet in width and 18 feet in length. Examples of minimum standards for off-street parking are listed in the following table:

***Table 4. Examples of land uses and parking needs***

| **Land use** | **Parking need** |
|---|---|
| Dwellings | 1-2 spaces per dwelling unit |
| Restaurants, taverns, and similar establishments | 1 space for each 3 seats |
| Fast food restaurants | 5 spaces for each person employed to serve customers |
| Motels, mobile home parks, and campgrounds | 1 space for each unit |
| Retail business and service establishments | 1 space for each 250 $ft^2$ gross floor area |
| Industrial uses and warehouses | 1 space for each 2 employees on the two largest overlapping shifts |

Wisconsin Department of Commerce administrative rule,COMM 62.1106, sets forth accessibility requirements and passenger loading facility requirements. In general, these rules outline the required minimum number of accessible spaces based upon the total number of parking spaces provided in addition to location and passenger loading requirements.

It should be noted that some local municipalities set minimum parking spaces and sizes as well. More information on parking needs can be obtained from the Institute of Transportation Engineers (www.ite.org) and the American Planning Association (www.planning.org).

### Loading

In addition to accessibility requirements, each establishment should provide sufficient maneuvering and loading space on the premises for pickup, delivery and for service vehicles necessary to normal operation. Where over-the-road, trailer-tractor combinations must be accommodated, a minimum maneuvering and loading area depth of 120 feet from the loading dock is required. Every truck loading facility should be designed so that trucks need not back into or out of, nor park in, a public street.

### Sign Control

Outdoor advertising signs located on private land but visible to motorists traveling Wisconsin's highways are regulated through local sign control and zoning ordinances, state laws and administrative rules, and federal regulations that together provide a framework of outdoor advertising control. The regulations enforced by the Department apply to interstates and other state highways, not to local roads, streets, or highways. Sign control is important in interchange areas, where complicated patterns of traffic movement occur and where good planning can be expected to minimize opportunities for motorist confusion and distraction.

Signs can be basically divided into the off-property category, where billboards are found, and the on-premise category, which are signs at the same location as the business or products advertised on the sign. In addition to state and federal regulations, local government also has the power and authority to control signs. By adopting an ordinance that limits the size, lighting, spacing, and height above ground of signs, a local community can have a noticeable impact on the appearance of an area.

Wisconsin is a home rule state. This means that state laws and local ordinances operate together, with the more restrictive of the two prevailing. For example, if a permit can be issued under state requirements to construct a back-to-back billboard sized at 1,344 square feet but a local ordinance limits signs to 72 square feet, then only a 72 square feet sign can be legally built.

Local communities may wish to adopt ordinances that will allow them to put their best face forward, creating a positive impression for visitors and community residents. First impressions are often the strongest. A strong sign control ordinance can put the local community in the driver's seat by allowing them to create the vision of their community they want others to notice. Should a community be defined by advertising signs or by some other characteristic of the locale, such as an architectural landmark, views to a special geographic feature, a historic, or a small business district? What draws motorists to an area and makes them want to return? What do community residents want to see as they lead their daily lives within the community? These are all valid questions to ask as a community begins to develop a sign control ordinance.

Businesses that provide motorist services (gas, food, lodging) tend to locate in interchange areas and tend to erect high and large on-premise signs. One reason that local sign controls can have a noticeable impact in interchange areas is that the sign control regulations provide minimal restrictions of on-premise signs. For example, WisDOT administrative rules, Trans 201.02(9), restrict on-premise signs to within fifty feet of the building where that business is conducted, the driveway to the business, or the parking lot

commonly used by customers. However, this includes an unlimited number of on-premise signs that may be erected up to 1,200 square feet in size per side (50' x 24'). To balance this, a local community may decide to limit on-premise signs to two per business, to not exceed 128 square feet in size, to be down-lighted, and to be illuminated only until a certain time in the evening.

Local zoning authority is another way for a community to have a noticeable impact in interchange areas. Lands that are zoned to allow business, commerce, or industry are eligible for off-property permits from the Department. The laws enforced by the Department provide no restrictions on sign height above the ground, and allow signs up to 1,200 square feet in area to be erected 300 feet apart in most rural areas (500 feet apart in rural areas along interstates and freeways) and 100 feet apart within communities.

Working with a local community during the planning stages of an improvement project can result in the preservation of those aspects of the community that characterize the history and spirit of its residents. To that end, the following resources may provide guidance:

- The Outdoor Advertising Program's webpage on the Department's website provides a list of Program contacts and links to state and federal sign control regulations: http://www.dot.wisconsin.gov/business/rules/property-advertising.htm
- Community representatives can find guidance in developing ordinances at http://www.scenic.org/
- A counter view is presented by the outdoor advertising industry at their website: http://www.oaaa.org/

**Bicycle and Pedestrian Accommodations**

In addition to motorized transport, the needs and volume of non-motorized transport—bicyclists and pedestrians—should be considered in interchange area planning. Generally, bicyclists and pedestrians are prohibited from access to interstates and expressways for obvious safety purposes. However, high speed, limited access roadways such as expressways and freeways can also be significant barriers for bicycle and pedestrian circulation in the local area because of the limited opportunities to safely cross such facilities. Interchange areas are often unsafe or unpleasant for bicyclists and pedestrians to traverse because of high volumes of traffic, multiple ramp entrances/exits, and lack of sidewalks. However, in many urban and suburban areas, there are few places to cross freeways except at interchanges. Therefore, bicycle and pedestrian crossings need to be accommodated in interchanges.

Attention to bicycle and pedestrian needs as part of interchange planning can help to ensure that that the area is accessible to non-motorized travel. Such consideration is required by federal regulations:

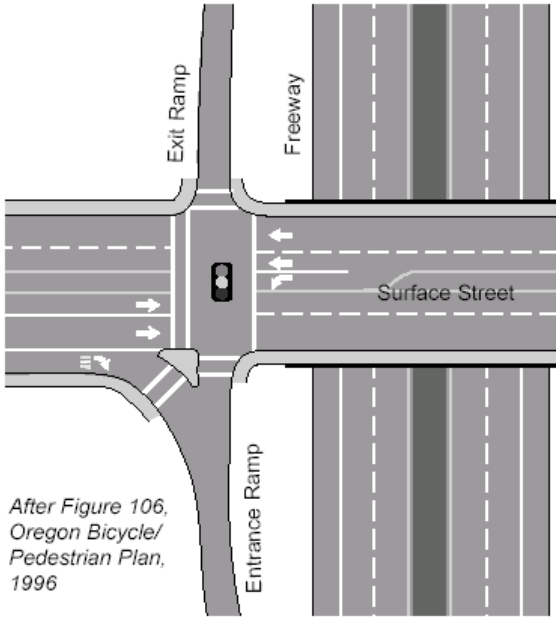
- *"The safe accommodation of pedestrians and bicyclists should be given full consideration during the development of highway projects, and during the construction of such projects. Where current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort shall be made to minimize the detrimental effects on all highway users who share the facility"* (23 Code of Federal Regulations, Part 652 Pedestrian and Bicycle Accommodations and Projects).

The level of service necessary for bicyclists and pedestrians at an interchange will depend partly on the character of the existing and proposed future uses in the area and the availability of alternative crossings of the freeway. For example, bicycle and pedestrian accommodations are more important in areas with existing or planned residential and commercial uses. This can help increase the function of the interchange area by reducing the number of short car trips between stores and between stores and residences. In undeveloped areas where rural uses will be preserved, pedestrian accommodations are less important but should still be taken into account.

Bicycle Facilities

It is WisDOT's policy to provide bicycle facilities on all streets within urban areas wherever possible or in rural areas when the two-way bicycle traffic volume is or is expected to be 25 ADT during periods in the peak bicycle season. In addition, to the extent practicable, short gaps in an otherwise continuous bike facility should be completed with highway/street improvements regardless of whether or not the above warrants are met. (Procedure 11-45-10 of WisDOT Facilities Development Manual found at:

https://trust.dot.state.wi.us/static/standards/fdm/11/FDM11.pdf)



*After Figure 106, Oregon Bicycle/ Pedestrian Plan, 1996*

The actual type of facilities appropriate for bicyclists at an interchange depend on the volume of traffic, the type and proximity of development, and the availability and convenience of alternative routes. The following are some recommendations from the *Wisconsin Bicycle Facility Design Handbook* for improving the level of service for bicyclists through interchanges:

- Avoid designs that encourage free-flow motor vehicle movement;
- Freeway ramps should connect to local streets at or near a right angle with stop control. Or roundabout or signals at the intersection;
- Where large trucks must be accommodated, use compound curves for intersection of the ramp and local street to reduce the speed of intersecting traffic;
- Provide good visibility of bicyclists at ramp intersection with local roads.

In rural areas, there is less bicycle use and lower traffic volumes and different consideration for bicyclists' may be appropriate. However, even in these areas shoulder widths leading up to the interchange should be continued through the interchange. State, regional, and local bicycle plans should be consulted to determine whether the crossroad is on a designated bicycle route or provides access from a designated route to a nearby community.

Along urban arterial highways and heavily traveled urban collectors in interchange areas, striped paved shoulders are recommended to accommodate bicyclists. Striped paved shoulders provide more of a formal space for bicyclists to travel than unmarked, shared outside lanes. The striped edge line provides a visual separation between motor vehicle travel lanes and paved shoulders, which improves the safety of the roadways for bicyclists. For outside lanes that are 14 feet, the edge lines should be striped three feet from the curb and gutter joints. For outside lanes greater than 14 feet, at least four feet should be provided between the edge lines and curb and gutter joints.

The accompanying .pdf files to this document provide detailed, engineering guidance for accommodating bicyclists and pedestrians in interchange areas. The first .pdf is for roadways where bike lanes have been designated, and the second .pdf is for situation in which wide outside lanes will be used.

Accommodation of Bicyclists and Pedestrians involving Roundabouts


Design treatments to accommodate bicyclists and pedestrians should also be considered when roundabouts are planned as an interchange facility. Bicycle treatments at roundabouts provide bicyclists the option of traveling through the roundabout either by riding in the travel lane as a vehicle, by exiting the roadway and using the crosswalk, or as a cyclist using the shared-use path, depending on the bicyclist's level of comfort. Bicycle exit ramps should generally leave the roadway within a 35 to 45 degree angle range. Bicycle entrance ramps should generally enter the roadway within a 20 to 30 degree angle range. In addition, the width of the sidewalk, when connected to the bike ramps, should be 6' to 10' wide. However, the ramps themselves may be smaller in width.

Pedestrian crossings are also designed for roundabouts to allow greater access. The crossing location is set back from the yield line, typically one car length. The splitter island is cut to allow pedestrians, wheelchairs, strollers, and bicycles to pass through.

For more information on these treatments, please consult Chapter 11, Section 26 of the Facilities Design Manual found at the following link: http://dotnet/standards/fdm/11/11-26-1.pdf

In addition, the needs of blind pedestrians also need to be addressed in roundabout designs. Design features such as audible signalized crossings and tactile sidewalk treatments may be appropriate. More information on design and operational issues related to blind pedestrians and roundabouts can be found at the access board at http://www.access-board.gov/research/roundabouts/bulletin.htm

For more information on Wisconsin bicycle plans, projects, studies, and guides, see http://www.dot.wisconsin.gov/projects/bike.htm.

## Interchanges as Gateways

As part of the interchange area planning, communities may also wish to address how interchange areas serves as gateways or entrances to their communities. As a visitor approaches a community, the sequence of views forms a first impression of the community. This impression can be positively or negatively affected by the appearance of the interchange area and the road linking the interchange and the community. Linking the sequence of views together with common elements s give the corridor and community entrance its own identity. Gateway planning can promote a positive impression of a community.

The creation of a unified gateway appearance can be achieved through attention to landscaping, signage, lighting, and materials.

Examples include:

- Planted medians
- Landscaped buffers
- Placement of utilities underground
- Ornamental lighting
- Sign controls
- Sidewalks or parallel paths
- Directional signs to important destinations
- Similar colors and textures on materials, signs, and buildings
- Walls or landscaping to screen undesirable views
- Distinctive artwork
- Themes focused on unique local natural, cultural, or historic amenities

Gateway planning objectives can be achieved with regulatory ordinances, aesthetics controls, and design standards. These tools are addressed in *Section 4: Implementing the Plan.*

## Steps In Interchange Planning

Whether an interchange planning effort is being done by in-house planning staff or by a consultant, the steps in technical interchange planning should include the following:

### 1) Determine the Interchange Area Boundaries

Physical planning for the development of an interchange area begins by defining the area boundaries. Not every interchange has the same potential for growth. There is no exact formula by which the effect of the interchange on surrounding territory can be measured. If there are existing municipal, county, or regional land use plans, they may indicate growth potential and can provide a valuable general framework for the more detailed interchange area planning.

In most cases, an area boundary one mile from the interchange will be sufficient. However, extensions up to two miles may sometimes be necessary. The area included need not be regular in shape; it will usually extend farther along the intersecting highway than along the freeway because of stronger development pressure along the intersecting highway. The following factors should be considered in determining the planning area boundary:

- *The physical characteristics of the surrounding area*. Existing topography, drainage patterns, soil types and vegetative cover will, in part, determine the

development potential. Generally speaking, an open, level area, having soils with good drainage characteristics and structural bearing capacity is more likely to be developed.

- *The location of nearby development*. If the interchange provides the primary access to a nearby city or developed area, it will usually become a focal point of further growth or expansion of existing development. When existing development is within two miles of the interchange, the interchange planning area should include all of the land adjacent to the intersecting highway to the edge of the developed area.

- *Traffic volumes*. Traffic volumes on the freeway and the intersecting highway serve as indicators of the market potential for developments that serve the motorist as well as factors influencing other types of development (e.g., industrial and residential development).

- *The local road system*. Where local roads already serve land near the interchange, access to the freeway may make such land more attractive for development. Such areas served by existing local roads should be included in the planning study.

- *Relationship to neighboring interchanges*. The type of development at nearby or similar interchanges may indicate the type and extent of growth patterns likely to occur, or may mean that the development potential for those types of uses has already been realized. In other words, there may be a limit to the number of service stations or "travel centers" that can be supported by the amount of traffic carried on the highway system. It is also important to consider the relationship between interchanges on a regional or at least a countywide basis. Not all interchanges have the same development potential and the proposed uses at one interchange should be considered in light of existing and proposed uses at other nearby interchanges.

- *Outstanding scenic or cultural resources*. The study area should include areas of unusual natural beauty or historic interest near the interchange that are potential recreation or tourist attractions.

Base maps are needed to show area boundaries of each interchange. Maps are also necessary for the succeeding steps of showing the data collected during the planning inventory, for presenting the plan and its parts, for illustrating ordinance provisions such as building setbacks, and in aiding in the consideration of specific development proposals. The best possible source for such base maps is WisDOT's, Bureau of Highway Development in Madison or at the regional officesRegional Offices.

### 2) Make a Planning Inventory

Interchange planning conducted as part of a comprehensive planning program will be based on a complete inventory of the factors affecting land development. Similarly, when interchange area planning is done, the following information should be included at minimum:

- Existing and projected land use;
- Soil characteristics and other natural resources inventories;
- Utility services available including sewer, water and other local community infrastructure;

- Existing plans, studies, and regulations of local or regional entities;
- Highway agency plans and controls for the roadways in the interchange area;
- Traffic counts and future traffic projections;
- Scenic, recreation and conservation values of the interchange area; and
- Local and regional bicycle routes/plans.

This data will provide the background of facts for the subsequent analysis and planning of the interchange area. Each information category is described in greater detail in the following paragraphs.

Land Use

The present land use pattern will provide, in part, the foundation of the interchange area plan. A land use survey will show the existing land uses and their locations. Area planning agencies can advise on the techniques for classifying and recording land uses.

Soils

The characteristics of the soil in the interchange area will be of great importance in determining development patterns. All land is not suitable for all purposes. The amount of slope, surface and internal drainage, texture, structure-bearing capacity and percolation characteristics may all affect development possibilities. Local USDA Natural Resources Conservation Service personnel (http://www.wi.nrcs.usda.gov/contact/office_search.html), regional planning agencies and the county extension agents should be consulted for information as to the specific soil types in the area, and the development potential of each. These contacts can also provide information on the availability of detailed county soils data.

Available Utilities

The location and characteristics of utilities presently available in the interchange area—such as water, gas, sewer, etc., will help determine the capacity of the area to support a particular type of development. The utility offices may provide information on existing services and planned improvements.

Plans, Studies, and Controls

Some interchanges will be located where plans have been completed by county, regional or state agencies. Nearby incorporated municipalities may have plans extending into the 1-1/2-or 3-mile areas of extraterritorial jurisdiction. It is important that local plans and land use controls for the interchange area are coordinated with other regional and state plans and controls.

Regional planning studies will have data on population, economic development, transportation, and perhaps soils and conservation-recreation areas. Because coordination works both ways these planning agencies should also be kept informed of plans and controls prepared for local interchange areas.

Land use controls such as zoning ordinances and subdivision regulations may already be in effect in the interchange area. These existing ordinances should be reviewed, analyzed and recommendations made to the governing body for ordinances that need to be revised or replaced to accomplish the objectives of the interchange planning program.

Highway Improvements

The plans for future improvements by the highway agencies having jurisdiction over the roads in the interchange area are very important in evaluating development potential.

Where the intersecting highway is presently two-lane, for example, a proposal to widen the section to a dual roadway (or merely the capability to widen) would indicate a large increase in the traffic capacity of the interchange roadways, and an increased potential for development. Therefore, the design or scheduling of proposed highway improvements might in some cases, need to be modified to fit local plan goals. .

Information on access controls can also be acquired from the county highway agency or WisDOT Regional Offices. When frontage roads or other systems for internal circulation are being considered by a local unit of government, the county highway agency (where applicable) and the WisDOT regional office can help determine the necessary right of way and current design characteristics (see “contacts” in Section 5).

Traffic Information

In addition to plans for the area highways, traffic information concerning the present and future use of major roads is available from the WisDOT's Bureau of Planning and Economic Development and the WisDOT Regional Offices. The number of vehicles using the roads, kinds of vehicles, types of trips, etc., will provide a basis for estimating the type, size and number of developments that would likely find that location suitable.

Projections of future traffic, as interpreted by Department personnel, may represent useful information as part of discussions focusing on future land use patterns. These projections are based in part upon probable future development. This joint consideration of the land use-traffic relationship will help the agencies responsible for planning road systems and land development to work together. Discussion between the WisDOT and the local planning agency should correct any wide variation in the estimates of future development.

It should be noted that all MPOs have prepared new transportation models that can be used for the initial analysis of existing and future traffic volumes in interchange areas. Some of these models were completed for entire counties. However, for more inclusive information on the traffic-land use relationships in the interchange areas, a more detailed, smaller-scale model for the areas would need to be conducted. The Department has also completed a statewide transportation model.

Cultural and Scenic Qualities

The assessment of the scenic, recreational or environmental qualities of interchange areas is also important. The Wisconsin Department of Natural Resources and WisDOT can provide some background material on scenic areas that should be considered in establishing conservancy districts. It is also good to be aware of the” Section 4(f) law” found in the United States, Department of Transportation Act of 1966, which limits the displacement of publicly-owned recreation land and certain other land uses as part of a federally-funded transportation project or facility. Also, note that even though an area has not been officially designed as scenic or recreational, the potential may still exist. Local resource technicians or professional planning consultants can help identify these areas.

The individual landowner, of course, will make the final decision as to the specific use of his/her land, within the broad categories of permitted uses under zoning. The purpose of the interchange planning effort is to coordinate the individual development decisions with the plans and policies of government agencies in order to create the best overall pattern of development and protect the economic value of the interchange.

Bicycle Plans/Routes

Existing or planned bicycle plans should indicate whether or not the interchange area is a designated bicycle route locally, regionally, or statewide. These plans should also include information about the type and volume of usage. For example, a bicycle route heavily used

by families on weekends may require different considerations than one used mostly by bicycle clubs.

### 3) Develop the Plan

The consideration of these land use and traffic factors will not result in complete plans or policies for interchange area development, but two processes which have occurred naturally during the fact gathering and analysis step affect the plan's evolution. One is the consideration of the general types of land uses most appropriate or compatible for each interchange area. The second is the recognition of physical limitations or external influences that will modify or preclude certain land uses at specific interchange locations.

For example, a large area of land may be well suited for motel-restaurant-service station development. However, if nearby interchanges already supply these services in quantity, there may be no demand for such facilities. In this case, to allow a single service station could spoil a large site that might have been saved for a major non-highway service development needing more space.

Land use compatibility and physical or external influences resolve themselves into guidelines for development, expressed in physical plans or in a unified set of development policies. In either case, implementation will be accomplished through ordinances and programs for control of land use and access, as well as the municipal policies concerning provision of community facilities and services (See Section 4).

### 4) Plan Review

Although local planning and legislative bodies develop and implement the interchange area plan, the development pattern will also be affected by the action of other public agencies. For this reason, it is important that proposed interchange area plans be discussed with the action agencies and compared to their programs. These agencies may also modify their plans and programs to fit the development planned for the area.

The county highway department and the Wisconsin Department of Transportation, for example, should be invited to participate in the planning process. The completed plan should be reviewed by the transportation agencies to determine whether projected highway improvements will complement or conflict with the interchange area plan. The plan cannot be successfully implemented if the road system it requires will never exist. Conversely, planned improvements in the road system will have little value and may be very costly to adjust if the future development is not compatible with future road conditions and designs.

Some programs and policies of the Wisconsin Department of Natural Resources may affect interchange development. For example, land has been acquired for conservancy districts in several interchange areas. Well-developed local plans may influence the size and location of future conservation areas.

### 5) Plan Adoption

After the interchange plan and development policies have been coordinated with regional and state agencies, a complete working plan can be drawn up and adopted by the appropriate planning and legislative bodies. This is not necessarily a "final" plan, however. Most of the planning factors that were analyzed will continue to change, and the plan must be reevaluated and perhaps modified to reflect these changes. Development itself will initiate new trends that should be recognized and accommodated in the continuing planning process.

## Section 4: Implementing the Plan

Plans and policies for interchange area development will be only as effective the commitment of those agencies/individuals with the responsibility to use their available tools to implement plans and policies. The tools for carrying out the plan are of two basic types- **regulation** and **education**. Regulation includes the ordinances that control land use and development. Education refers to consulting local officials and citizens about interchange development and planning, and working with developers to help them conform to established plans and policies. This exchange of information works both ways and helps assure that the interchange plan is realistic and workable. Various land use controls and techniques for education are discussed in this section.

### Land-Use Controls

Land-use controls are the means by which local government acts to insure compliance with the policies set forth in the plan. A number of such legal tools exist at various governmental levels in Wisconsin. The use of a particular device will depend upon the objectives sought and the statutory authority of the unit of government exercising it. The following table shows the sections of the Wisconsin Statutes that authorize the various governmental units to adopt land use controls. Since the laws may be amended, communities should obtain legal advice before adopting controls.

**Table 5. Statutory Authority for Land-Use Controls within the Interchange Area**

| Device | State | County | Town | Town with Village Power | City | Village |
|---|---|---|---|---|---|---|
| **Zoning** | | 59.69 | 60.61 | 61.35 | 62.23(7) | 61.35 |
| **Subdivision regulations** | 236.12<br>236.13<br>Trans 233 for State review of subdivisions | 236.10<br>236.45<br>236.46 | 236.10<br>236.45 | 236.10<br>236.45 | 236.10<br>236.45 | 236.10<br>236.45 |
| **Official mapping** | 84.295(10) | 59.69(3)<br>66.1031 | 60.61(2)(e) | 61.35<br>60.62 | 62.23(6) | 61.35 |
| **Sign controls** | 84.30 | 59.69 | 60.61 | 61.35 | 62.23(7) | 61.35 |
| **Floodplain zoning** | 87.30 | 87.30<br>59.692 | | 87.30 | 87.30 | 87.30 |
| **Farmland preservation** | Chap. 91 | Chap. 91 | Chap. 91 | | | |

No single land-use control is adequate to carry out the plan for interchange development and protection. Each type of control has a function and should be used in combination with other devices. In adopting and implementing these ordinances, the procedures specified by the enabling statutes must be followed.

**Zoning**

Zoning is the process of dividing a community into districts for the purpose of regulating the type of land use, density of population, and the height, bulk, and placement of structures. Each district specifies permitted uses, conditional uses that require special scrutiny by a public body, and prohibited uses as well as rules for building height, yard, open space, and parking. These regulations are contained in an ordinance that sets forth the written regulations and an accompanying map shows the location of the districts to which they apply.

Zoning can help achieve orderly development in the interchange area by:

- Setting up appropriate categories of compatible land uses;
- Designating within the interchange area the lands most suitable for each category of land use;
- Limiting the intensity of land use and thus the amount of traffic generated through minimum lot size and yard requirements to maintain the carrying capacity of the road system;
- Establishing adequate setback of structures from the road system;
- Requiring adequate space for off-street parking and loading;
- Regulating the number, size, location and type of signs; and
- Limiting access to designated points

Several special zoning techniques are suggested to guide land development in Wisconsin interchange areas. Many communities currently use these techniques. These are:

- *Interchange overlay districts*. Land within the interchange area is first assigned to the appropriate local zoning district(s) such as commercial, industrial, residential, conservancy and/or agriculture. An overlay district can apply to multiple zoning districts in a specified area. Additional access and land use controls in the form of an interchange overlay district are then added to each zoning classification. These additional controls are more restrictive than those for a similar zoning category not located in an interchange area. Overlay districts can also be used for gateway corridors to require specific landscaping, signage, and materials.

- *Highway service/business zoning districts*. These districts allow only those commercial and related uses that normally locate in highway areas and which serve the traveling public (e.g., truck stops or travel centers). Only a portion of the interchange area would be zoned for highway service. These districts would have to be supplemented by other zoning classifications to cover the entire interchange area.

- *The conditional use approach*. This technique makes most types of land uses within an interchange area a conditional use. This allows the local planning or zoning agency to have additional scrutiny of a proposal than would be followed for a permitted use. An application for a conditional use permit must be filed with the local planning or zoning agency for consideration by a plan commission or zoning committee and the governing body. This body investigates the effects of the proposed use and after a public hearing, the governing body decides whether to refuse, grant or conditionally grant the permit. A variety of conditions may be attached to the permit to ensure highway safety and compatible land use. Standards for the agency's investigation and conditions that may be attached to the permit are spelled out in the zoning ordinance. Lack of enforcement for the conditions set in the development's approval is one common pitfall for conditional use permits.

- *A combination of the above techniques*. A given zoning ordinance might employ one or more of these techniques. For example, land within the four quadrants of an interchange area could be zoned so that one quadrant was in the agricultural district, another designated for residential use, the third for industry and a portion of the remaining quadrant in the highway service commercial zone with the rest of the quadrant zoned for general commercial purposes. Special overlay zoning provisions for highway access, signs and off-street parking could apply to the whole interchange area. In addition, certain uses, such as shopping malls, which are heavy traffic generators, could be made a conditional use.

Permits

Regardless of the zoning control technique used, a permit is required before any land use change would occur or structure built. No structure or land use within an interchange area should be used, erected or structurally altered without a permit including any bridge/overpass constructed as part of the interchange. Under the conditional use procedure, the permit is the means of insuring proposal review by the local planning agency. The planning review agency, zoning board and/or plan commission may suggest modifications in a site plan proposal, and condition the permit on the basis of conformance to the specified and enforceable conditions. For permitted uses, if a proposal meets the specifications of the ordinance, a permit must be granted.

To facilitate the review of a conditional use, applications for a permit should be accompanied by the following information:

- The boundaries of the property involved;
- The proposed internal circulation roads, driveways and access points, to any public road; the distance from access points on the intersecting highway to the ramp taper point or centerline of interchange ramps; the location of access points on the opposite side of the highway or road and any median crossovers;
- A plan of any water or sewer connections or individual systems, and the distance of such systems from the water and sewer systems on adjoining properties;
- The location and size of existing and proposed buildings, stockpiles, equipment storage, parking and loading areas, signs, fences, screening, buffer strips, landscaping and other site plan details.

After any construction or alteration, there should be an inspection to ascertain that development has been in compliance with the approved application. The administrative device showing compliance is the certificate of occupancy, issued by the zoning administrator.

**Subdivision Control**

Subdividing is the process by which land is divided into building sites. While zoning addresses allowed lot use, density, and building mass, subdivision regulations address the need to provide subdivided lots with streets, sewers, solar access, and fire and street protection. Subdivision regulations typically spell out requirement for street connections, layout, and width, block size and orientation, and the provision of parks, sewers, water, and other public services.

In Wisconsin, the state subdivision statute requires preparation of a plat whenever five or more lots of one and one-half acres or less in area are created within a five-year period. A plat is a detailed and accurate map of the subdivided land. After the plat is prepared, it is

reviewed, prior to approval, by various state and local officials for compliance with state law and local ordinances.

The state statute also authorizes local units of government to adopt subdivision ordinances that are more restrictive than the provisions of the state law. These local ordinances may apply, therefore, to plats of fewer than five lots or lots larger than one and one-half acres. In addition, local ordinances may be tailored to include more detailed provisions concerning physical layout, standards of design and requirements for utility and street installations.

Some of the benefits of the use of local subdivision regulations in the interchange area are:

- Requiring dedication of land for road improvement and certain other public uses;
- Limiting property access to points on the subdivision's internal road system;
- Providing standards for the proper construction of street pavements, sewage systems, water systems, utilities, and other improvements;
- Insuring that interchange areas are developed in depth and that interior parcels are not land-locked; and
- Minimizing strip development.

Certified Survey Maps (CSMs) are also used as a local regulatory tool for the division of land for proposals that include the creation of five lots or less lots of any size. These land divisions can lead to applications for zoning changes and are quite common in rural areas.

Subdivisions along the State Highway System (Trans 233)

Trans 233 is part of the Wisconsin Administrative Code and defines requirements that must be met when subdividing lands abutting the state highway system. The Department utilizes Trans 233 to preserve traffic flow, enhance public safety, and ensure proper highway setbacks and storm water drainage.

The rule (as revised by a Wisconsin legislative committee in 2004) applies to landowners who intend to divide land abutting a state highway into five or more lots that are each 1.5 acres or less in size within a five-year period. State highways are all numbered highways including interstate, state and federal highways (such as I-90, WIS 73 or US 51).

More information on Trans 233 and the process used by the Department to control proposed land divisions abutting state trunk highways can be found at:

http://www.dot.wisconsin.gov/business/rules/trans233.htm

**Official Mapping**

An official map allows a community to protect the locations of future streets and reserve land for widening of existing streets. Officially mapping the location of future streets establishes a framework for future development.

Generally speaking, counties have limited official mapping authority and may adopt highway-width maps showing the location and width of proposed streets or highways and the widths of any existing streets or highways that are planned for expansion. However, the community affected by the street or highway must then approve the map. Counties may also prepare official maps for the future platting of lands, streets, highways, or parkland in the unincorporated areas of the county. A town can develop a town official map if the county it's located within does not have an official map. However, these maps do not conform to the extraterritorial plat approval of a city or village unless the municipality consents.

Official maps are not frequently used because many communities are not aware of the tool, or they simply choose not to apply it in the planning process. In the context of interchange areas, official mapping can be a valuable land-use control tool by: (1) Mapping service roads parallel to the intersecting highway, or mapping an alternative interior service road system, thus controlling access; (2) Mapping intersection locations to be positioned at safe intervals on the intersecting highway; and (3) mapping internal streets which will permit development in depth of the interchange area.

The Department's authority to designate and officially map the needed rights-of-way for future freeways and expressways is similar to municipalities official mapping authority. Section 84.295(10)(b) of the Wisconsin Statutes requires that property owners notify the Department of any building or altering of structures in the designated freeway/expressway mapped right-of-way.

### Driveway Permits

Driveway permits or curb cut regulations may be used to govern the number, placement, width and construction of access points from abutting properties to a public road. The permit may be conditioned upon such standards as angles of intersection, island areas, etc. The purpose of the design requirements is to promote safe and orderly movement into and out of private lands, and to control the use of drainage and other structures necessary to the maintenance of the highway.

### Controlled Access

A "controlled access" highway is a highway on which abutting property owners have no right of direct access. Highway authorities determine and control the type and location of all access connections along controlled access highways. State and county trunk highways with a traffic potential of 2000 vehicles per day may be designated as controlled-access highways (Wisconsin Statutes §84.25). No street, highway or private driveway may be connected to a controlled-access highway unless authorization is obtained from the controlling authority. On state trunk highways, WisDOT establishes controlled-access and issues authorizations for access. The county boards assign and administer controlled-access designations on county trunk highways under s.83.027(1) of the statutes.

### Extraterritorial Powers

Wisconsin legislation authorizes cities and villages to adopt zoning and official mapping ordinances as well as subdivision regulations for unincorporated areas outside their municipal boundaries. Cities and villages under Wisconsin Statutes s. 62.23(7a) are provided either a 3-mile (if pop. 10,000 or more) or a 1.5-mile extent of zoning control outside their corporate boundaries if the proper cooperative steps with the adjoining town are followed. This allows a city/village to exercise land use control over new development that otherwise might be incompatible with a city/village's future growth. The extraterritorial zoning power differs in that it must be exercised through a joint committee composed of three citizen members from the city or village plan commission and three members from each town affected. A majority of those representing the city/village and the affected town must vote in favor of the proposed extraterritorial zoning regulations before the city or village can adopt them.

An interim extraterritorial zoning ordinance to preserve existing zoning or uses may be enacted by the governing body of the city or village without following the above procedure for a period of up to two years.

### Design Guidelines

Design guidelines provide additional opportunities for the local planning agency to have oversight of the architectural and site design elements of proposal. These guidelines can be advisory or mandatory. Design guidelines can typically address:

- Grading
- Landscaping
- Building relationships including open space or viewscapes
- Lighting
- Utility location
- Signs
- Parking and service areas
- Building design (e.g., colors, materials, placement of mechanical elements)

Urban design guidelines (e.g., provided through the American Planning Association and the American Society of Landscape Architects) can be particularly helpful in achieving a unified appearance in a gateway area.

## Sources of Help

This guide cannot answer all the questions that may arise in interchange planning. There are several sources of planning assistance available to aid the local agency with specific problems

The first contact should be the county planning agency, if one exists. In addition, county assistance is available in the form of the county zoning administrator, the county highway commissioner, the county extension agent, and the local specialist of the Natural Resources Conservation Service at http://www.wi.nrcs.usda.gov/contact/office_search.html

The regional planning commission in the area should be contacted since one of their interests is in maintaining good land use-transportation relationships, to which an interchange area plan could be a useful refinement. A map and the addresses of the state's regional planning commissions appear at the back of this guide.

The Wisconsin Department of Transportation, particularly its Regional Offices and its Bureau of Planning in Madison, can provide traffic data and highway planning information, as well as guidance on access control, sign control, setbacks, and so forth. A map and the addresses of the WISDOT contacts appear at the back of this publication.

These agencies, together with the other sources of assistance mentioned throughout the guide, can be of considerable help to the local planning effort. Their services should be used when interchange area planning is initiated.

## Education and Information

A plan and its controls can only be effective if the public understands and supports them. It is very important, therefore, that the local planning agency publicizes and explains the interchange area planning program. Involving the communities in interchange planning can be a productive way to build support for controls that will be put in place in the interchange area. While the technical aspects of the controls will not be of interest to all, the reasons for the control should be made clear.

All local residents will be affected by interchange development. Therefore, the contents of the interchange area plan should be available to all through the local planning agency. In particular, property owners, developers and businessmen will be interested in the interchange area plan and in the data gathered during the planning studies.

This program of education and information is an important function of the planning agency. When landowners, developers and the public understand the land use opportunities and constraints posed by interchange development, they should also understand the positive role that local government plays in planning of interchange areas and the effect that this has on the local economy and quality-of-life issues involving the community.

## Section 5: Contacts

### Wisconsin Department of Transportation

#### Central Office

Chief, Planning Section
Bureau of Planning
4802 Sheboygan Ave.
PO Box 7910
Madison, WI 53707-7910
Phone: (608) 266-3662

Manager, Environmental Policy/Community Impacts Section
Bureau of Equity and Environmental Services
4802 Sheboygan Avenue, Room 451,
Madison, WI 53707-7910
Phone: (608) 264-7330

#### Regional Offices

Also, for an up-to-date listing of contacts by region and county involving transportation/land use issues, please visit the following link:

**http://www.dot.wisconsin.gov/localgov/land/contacts.htm**

**Southwest Region**
Columbia, Crawford, Dane, Dodge, Grant, Green, Iowa, Jefferson, Juneau, LaCrosse, Lafayette, Monroe, Rock, Sauk, Vernon counties

***LaCrosse Office***
Planning Chief
3550 Mormon Coulee Road
La Crosse, WI 54601
Phone: (608) 785-9022
Toll-free: (888) 368-5463
Fax: (608) 785-9969
E-mail: lacrosse.dtd@dot.state.wi.us

***Madison office***
2101 Wright Street
Madison, WI 53704-2583
Phone: (608) 246-3800
Fax: (608) 246-7996
TDD: (608) 246-5385
E-mail: madison.dtd@dot.state.wi.us

**Southeast Region**
Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington and Waukesha counties

Planning Chief
141 NW Barstow Street
P.O. Box 798
Waukesha, WI 53187-0798
Phone: (262) 548-5903
Fax: (262) 548-6424
E-mail: waukesha.dtd@dot.state.wi.us

## Northeast Region

Brown, Calumet, Door, Fond du Lac, Kewaunee, Manitowoc, Marinette, Oconto, Outagamie, Sheboygan and Winnebago counties

Planning Chief
P.O. Box 28080
Green Bay, WI 54324-0080
Phone: (920) 492-5643
Toll-free: (800) 233-5022
Fax: (920) 492-5640
TDD: (920) 492-5673
E-mail: greenbay.dtd@dot.state.wi.us
Or
944 Vanderperren Way
Green Bay, WI 54304-5344

## North Central Region

Adams, Florence, Forest, Green Lake, Iron, Langlade, Lincoln, Marathon, Marquette, Menominee, Oneida, Portage, Price, Shawano, Vilas, Waupaca, Waushara and Wood Counties

**Rhinelander Office**
Planning Chief
510 N. Hanson Lake Road
Rhinelander, WI 54501
Phone: (715) 365-3490
Toll-free: (888) 368-3478
Fax: (715) 365-5780
E-mail: rhinelander.dtd@dot.state.wi.us

***Wisconsin Rapids Office***
1681 Second Avenue South
Wisconsin Rapids, WI 54495
Phone: (715) 421-8301
Toll-free: (800) 238-5575
Fax: (715) 423-0334
E-mail: wisrapids.dtd@dot.state.wi.us

## Northwest Region

Ashland, Barron, Bayfield, Buffalo, Burnett, Chippewa, Clark, Douglas, Dunn, Eau Claire, Jackson, Pepin, Pierce, Polk, Rusk, Sawyer, St. Croix, Taylor, Trempealeau and Washburn counties

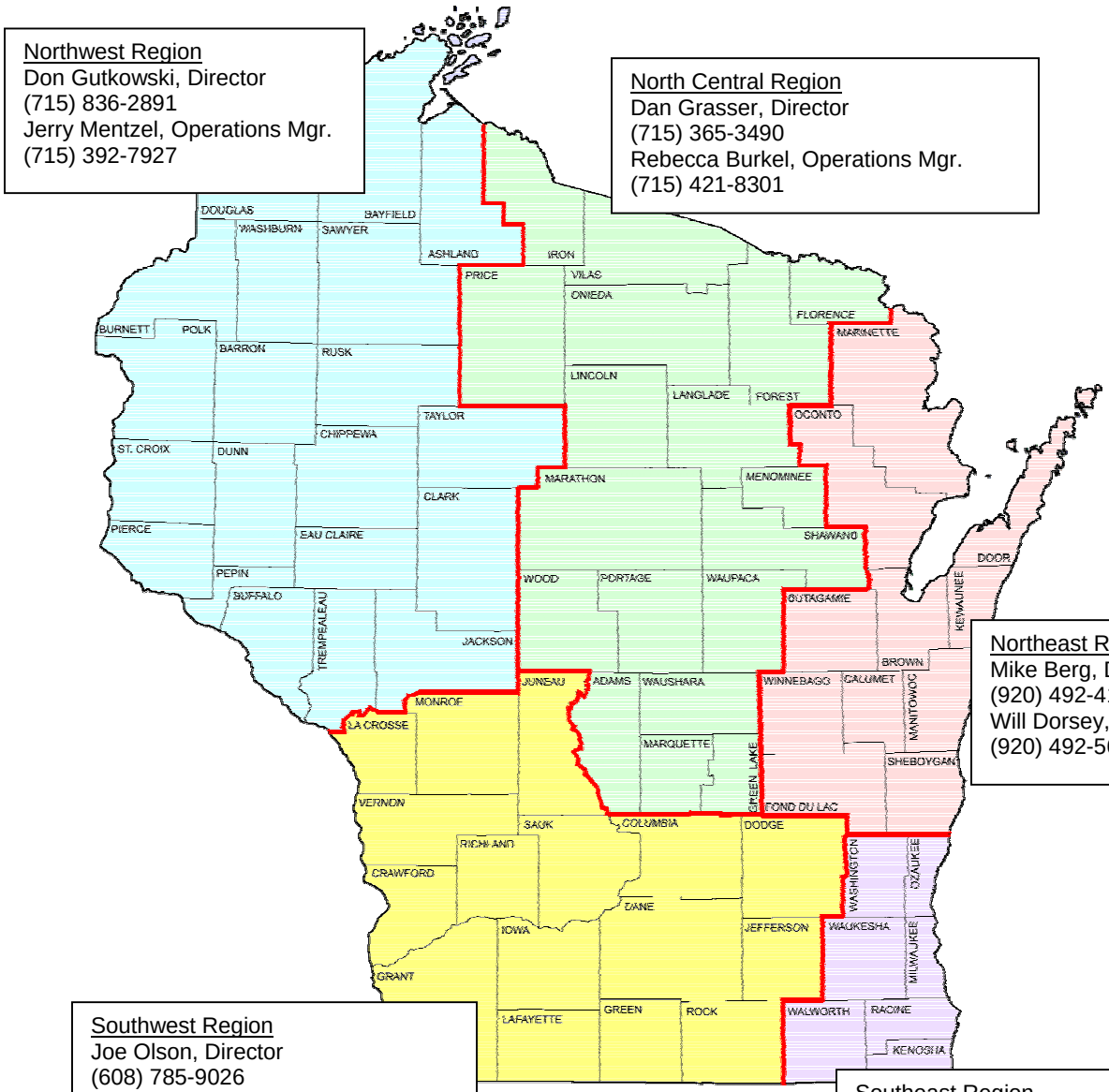
***Eau Claire Office***
Planning Chief
718 W. Clairemont Avenue
Eau Claire, WI 54701-5108
Phone: (715) 836-2891
Toll-free: (800) 991-5285
Fax: (715) 836-2807
E-mail: eauclaire.dtd@dot.state.wi.us

***Superior office***
1701 N. 4th Street
Superior, WI 54880
Phone: (715) 392-7925
Fax: (715) 392-7863
TDD: (800) 590-1868
E-mail: superior.dtd@dot.state.wi.us

Wisconsin Department of Transportation
New regional organization
Effective May 29, 2005 (updated January 24, 2007)

DIVISION OF TRANSPORTATION SYSTEM DEVELOPMENT (DTSD)
Kevin Chesnik, Administrator
Rory Rhinesmith, Statewide Bureaus Operations Director
Paul Trombino, Regional Operations Director

Statewide bureau managers (Madison)
Bureau of Equity & Environmental Services – Eugene Johnson, Director
Bureau of Highway Operations – David Vieth, Director
Bureau of Project Development – Don Miller, Director
Bureau of Structures –Beth Cannestra, Director
Bureau of Technical Services – Dan McGuire, Director




Northwest Region
Don Gutkowski, Director
(715) 836-2891
Jerry Mentzel, Operations Mgr.
(715) 392-7927

North Central Region
Dan Grasser, Director
(715) 365-3490
Rebecca Burkel, Operations Mgr.
(715) 421-8301

Northeast Region
Mike Berg, Director
(920) 492-4118
Will Dorsey, Operations Mgr.
(920) 492-5684

Southwest Region
Joe Olson, Director
(608) 785-9026
Rose Phetteplace, Operations Mgr.
(608) 246-3801

Southeast Region
Dewayne Johnson, Director
(262) 548-5682
Reggie Newson, Operations Mgr.
(262) 548-5884

## Metropolitan Planning Organizations (MPO)

### Appleton-Oshkosh

MPO Director
132 Main Street
Menasha, WI 54952-3100
Phone: (920) 751-4770
Email: staff@eastcentralrpc.org

Internet: http://www.eastcentralrpc.org/contacts.htm and

http://www.eastcentralrpc.org/inform/admin/staff.htm

### Beloit WI-Il

MPO Director
100 State Street
Beloit, WI 53511
Phone: (608) 364-6702
Email: Tfleschm@ci.beloit.wi.usT
Internet: Thttp://beloit.govoffice3.com/index.asp?Type=B_BASIC&SEC={0112CC00-DA16-4D34-A23D-3D42B497E7A2}

### Dubuque, WI-IL-IA

MPO Director
East Central Intergovernmental Association
3999 Pennsylvania Ave., Suite 200
Dubuque, IA 52002
Phone: (563) 556-4166
E-mail: cravada@ecia.org
Internet: http://www.ecia.org/Transportation.html

### Eau Claire-Chippewa Falls

MPO Director
800 Wisconsin Street, Mailbox #9
Eau Claire, WI 54703-3606
Phone: (715) 836-2918
Email: wcwrpc@wcwrpc.org
Internet: http://www.wcwrpc.org

### Fond du Lac

MPO Director
160 S Macy St, PO Box 150
Fond du Lac, WI 54936-0150
Phone: (920) 751-4770
Email: wraith@eastcentralrpc.org
Internet: http://www.eastcentralrpc.org/fonddulacmpo/

**Green Bay**

MPO Director
PO Box 23600
Green Bay, WI 54305-3600
Phone: (920) 448-6480
Email: lamine_cf@co.brown.wi.us
Internet: http://www.co.brown.wi.us/Planning/index.html

**Janesville**

MPO Director
18 N. Jackson St.
P.O. Box 5005
Janesville, WI 53547-5005
Phone: (608) 755-3085
Email: cantrellb@ci.janesville.wi.us
Internet: http://www.ci.janesville.wi.us/citysite/mpo.html

**La Crosse**

MPO Director
400 4th St. N., Room 2300
La Crosse, WI 54601-2300
Phone: (608) 785-5977
Email: faella.tom@co.la-crosse.wi.us
Internet: http://www.lapc.org/

**Madison**

MPO Director
121 S. Pinckney St., Suite 400
Madison, WI 53703
Phone: (608) 266-4336
Email: rmcdonald@ci.madison.wi.us
Internet: http://www.cityofmadison.com/mpo/

**Milwaukee, Racine, Kenosha**

MPO Director
Southeast Wisconsin RPC
W239 N1812 Rockwood Drive
P.O. Box 1607
Waukesha, WI 53188
Phone: (262) 547-6721
Email: sewrpc@sewrpc.org
Internet: http://www.sewrpc.org/

**Sheboygan**

MPO Director
441 South Jackson Street
Green Bay, WI 54301
Phone: (920) 448-2820
Email: mwalter@baylakerpc.org
Internet: http://www.baylakerpc.org

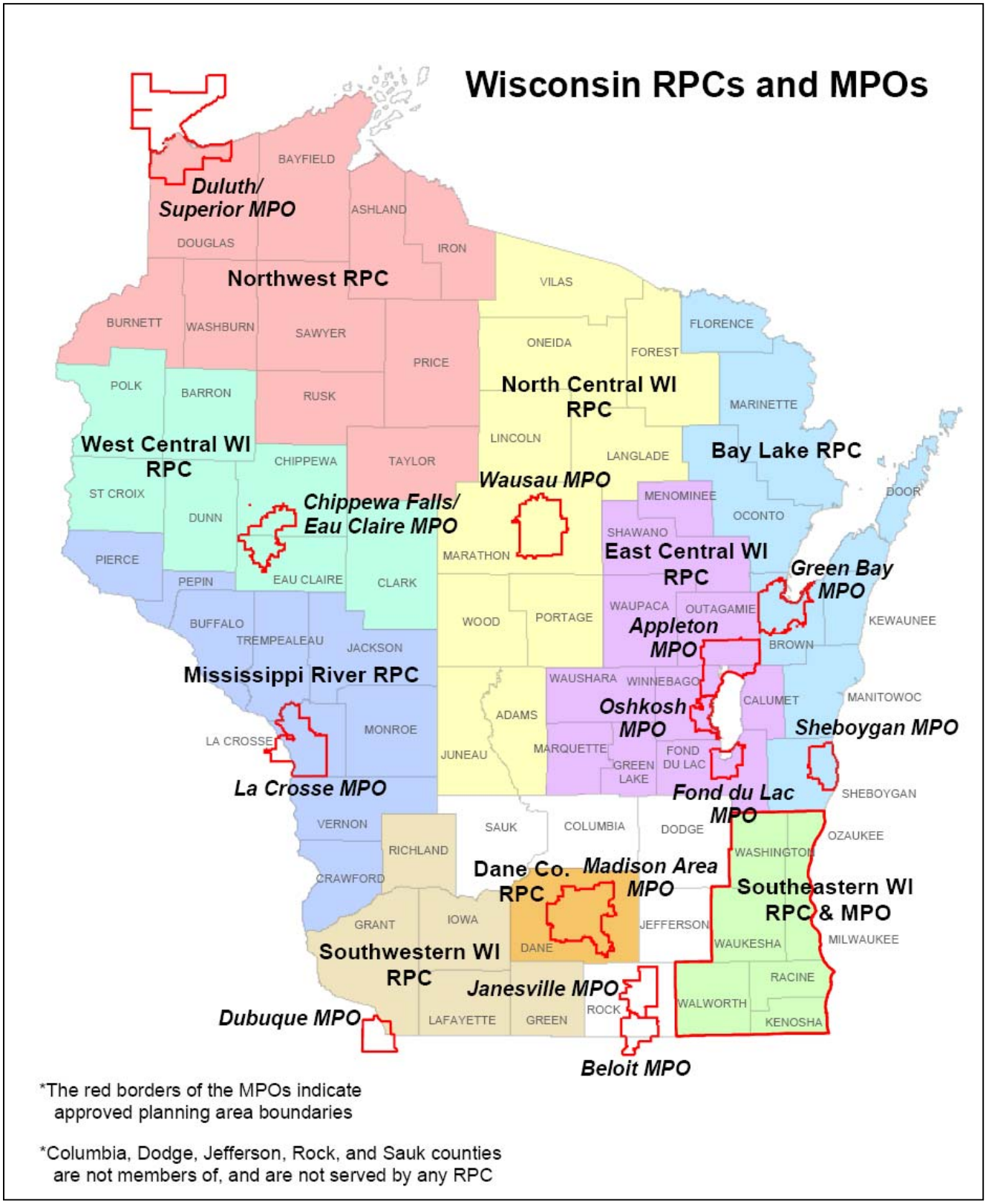
**Superior-Duluth, WI-MN**

MPO Director
Arrowhead Regional Development Commission
221 West 1st Street
Duluth, MN, 55802
Phone: (218) 529-7506
E-mail: rchicka@ardc.org
Internet: www.ardc.org

**Wausau**

MPO Director
Marathon County Planning Department
210 River Dr.
Wausau, WI 54403-5449
Phone: (715) 261-6043
Email: jehammer@mail.co.marathon.wi.us
Internet: http://www.cityofmadison.com/mpo/

## Regional Planning Commissions (RPCs) and MPOs




*The red borders of the MPOs indicate approved planning area boundaries

*Columbia, Dodge, Jefferson, Rock, and Sauk counties are not members of, and are not served by any RPC

**Bay-Lake Regional Planning Commission**
(Brown, Door, Florence, Kewaunee, Manitowoc, Marinette, Oconto, Sheboygan counties)

Planning Director
441 South Jackson Street
Green Bay, WI 54301
Phone: (920) 448-2820
Email: mwalter@baylakerpc.org
Internet: http://www.baylakerpc.org

**Dane County Community Analysis and Planning Division***
Division Administrator
30 W. Mifflin Street, Suite 402
Madison, WI 53703-3238
Phone: (608) 266-4137
Email: info@danecorpc.org
Internet: http://www.danecorpc.org/

*On October 1, 2004 the Dane County Regional Planning Commission (RPC) was dissolved. The Community Analysis and Planning Division (CAPD) of the Dane County Planning and Development Department was created by the County Board for an interim period through the end of 2005 to ensure continuity of the urban service area amendment process and water quality planning.

**East Central Wisconsin Regional Planning Commission**
(Calumet, Fond du Lac, Green Lake, Marquette, Menominee, Outagamie, Shawano, Waupaca, Waushara, Winnebago counties)

Planning Director
132 Main Street
Menasha, WI 54952-3100
Phone: (920) 751-4770
Email: staff@eastcentralrpc.org

Internet: http://www.eastcentralrpc.org/contacts.htm

**Mississippi River Regional Planning Commission**
(Buffalo, Crawford, Jackson, La Crosse, Monroe, Pepin, Pierce, Trempealeau, Vernon counties)

Planning Director
1707 Main Street, Suite 240
La Crosse, WI 54601
Phone: (608) 785-9396
Email: plan@mrrpc.com
Internet: http://www.mrrpc.com

**North Central Wisconsin Regional Planning Commission**
(Adams, Forest, Juneau, Langlade, Lincoln, Marathon, Oneida, Portage, Vilas, Wood counties)
Planning Director
210 McClellan Street, Suite 210
Wausau, WI 54403
Phone: (715) 849-5510
Email: info@ncwrpc dot org
Internet: http://www.ncwrpc.org

**Northwest Regional Planning Commission**
(Ashland, Bayfield, Burnett, Douglas, Iron, Price, Rusk, Sawyer, Washburn, Taylor counties)

Planning Director
1400 South River Street
Spooner, WI 54801
Phone:(715) 635-2197
Email: info@nwrpc.com
Internet: http://www.nwrpc.com/

**Southeastern Wisconsin Regional Planning Commission**
(Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, Waukesha counties)

Planning Director
W239 N1812 Rockwood Drive
P.O. Box 1607
Waukesha, WI 53188
Phone: (262) 547-6721
Email: sewrpc@sewrpc.org
Internet: http://www.sewrpc.org/

**Southwestern Wisconsin Regional Planning Commission**
(Grant, Green, Iowa, Lafayette, Richland counties)

Planning Director
One University Plaza, Room 719
Platteville, WI 53818
Phone: (608) 342-1713
Email: wardla@uwplatt.edu
Internet: http://www.swwrpc.org/

**West Central Wisconsin Regional Planning Commission**
(Barron, Chippewa, Clark, Dunn, Eau Claire, Polk, St. Croix counties)

Planning Director
800 Wisconsin Street, Mailbox #9
Eau Claire, WI 54703-3606
Phone: (715) 836-2918
Email: wcwrpc@wcwrpc.org
Internet: http://www.wcwrpc.org

No Commission Designated
(Columbia, Dodge, Jefferson, Rock, Sauk counties)

## University of Wisconsin - Extension

University of Wisconsin-Extension programs in Community, Natural Resource and Economic Development (CNRED) help Wisconsin communities deal with their own unique challenges. These include:

- Land use and smart growth initiatives
- Natural resource and water quality issues
- Local government operations and finance
- Economic development including labor force issues
- Community decision-making and leadership issues

Backed by University of Wisconsin research, CNRED educators work with local governments, civic organizations, businesses and community leaders to help people identify critical local concerns, set goals and work on solutions. Natural resource and environmental educators work with teachers and students, environmental and conservation groups and businesses that rely on the state's water and land resources.

Internet: http://www.uwex.edu/ces/cnred/

The UW- Center for Land Use Education
http://www.uswp.edu/cnr/landcenter/landcenter.html

## Section 6: Resources

### Wisconsin Comprehensive Planning Law

WisDOT's comprehensive planning legislation resources
Links to a variety of resources on Wisconsin's comprehensive planning law:
http://www.dot.wisconsin.gov/localgov/land/comprehensive.htm

Transportation Planning Resource Guide
WisDOT developed this guide in response to the Comprehensive Planning Legislation passed under the 1999-2001 Wisconsin State Biennial budget. The purpose of this guide is to provide basic transportation planning related information to help develop the Transportation Element of a community's comprehensive plan. This guide should help provide an understanding of the processes important to transportation planning.
http://www.dot.wisconsin.gov/localgov/land/resourceguide.htm

### Examples of Municipal Ordinances

www.municode.com
This website offers an online library of local ordinances from around the country, including the ordinances for over 40 Wisconsin counties and municipalities.

### Access Management

Access Management Manual (2003)
A comprehensive guidebook on access management published by the Transportation Research Board (TRB). See www.trb.org for information on ordering a copy.

www.accessmanagement.gov

A website devoted to access management created by TRB.

Land Development and Access Management Strategies for Florida Interchanges Areas
Available from:

http://www.cutr.usf.edu/research/access_m/ada70/Land_Development.pdf.