US-2/US-141/M-95 ACCESS MANAGEMENT ACTION PLAN

Central Upper Peninsula
Planning & Development Region

PREFERRED
Coordinated Review & Approval Process
MDOT or County Road Authority

- Receives Driveway Permit Application
- Approves, Denies or Conditionally Approves Permit Application
- Terms of permit approval are mutually agreed upon before issuance

Coordinated Review of Permit Application

Local Government
- Receives Development Plan and Application for Review
- Approves, Denies or Conditionally Approves Permit Application

September 30, 2005

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Under Contract to the Central Upper Peninsula Planning and Development Region (CUPPAD)
With funding from the Michigan Department of Transportation
With the assistance of the Advisory Committee
Listed on the next page

The opinions, findings and conclusions expressed in this publication are those of the authors and not necessarily those of CUPPAD, the Michigan Transportation Commission, the Michigan Department of Transportation or the Federal Highway Administration
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APPENDICES

Appendix A – Resolution and Memorandum of Understanding

Appendix B – Sample Access Management Ordinance

Appendix C – Sample Master Plan Amendment
EXECUTIVE SUMMARY

The US-2/US-141/M-95 Access Management Action Plan documents existing driveway, traffic safety, land use, and zoning conditions along the US-2/US-141/M-95 corridor within Dickinson County. Existing traffic and safety problems associated with too many driveways, improperly designed and located driveways, the lack of parallel roads and alternative means of access, including connections between existing parking lots, are noted in a detailed list of recommended improvements. These problems and a variety of recommendations to address these problems are presented in the Plan. A series of detailed tables, maps, figures and photos are used to illustrate key points and recommendations.

This Plan was created through close cooperation by representatives of Breitung, Norway and Waucedah Townships, the Cities of Kingsford, Iron Mountain and Norway, the Dickinson County Planning Commission, the Dickinson County Economic Alliance, the Dickinson County Road Commission and the Michigan Department of Transportation. This cooperation occurred at the initiative of and under the guidance of the Central Upper Peninsula Planning and Development Region and with funding support from the Michigan Department of Transportation. Each of the above listed communities passed a resolution of support to participate in the creation of this Plan (see Appendix A). It is intended that the goals, objectives and recommendations of this Plan will be implemented through a common intergovernmental development review process and coordination between the jurisdictions and agencies who were involved in the creation of this Plan. A uniform procedure for the coordinated review and approval of future site plans and development permits along the corridor is described in Chapter Six.

To facilitate a uniform local planning approach to access management, a sample Master Plan amendment was created and is attached as an Appendix. Also in the Appendix is a sample set of access management amendments to the local zoning ordinance. These regulations are the minimum necessary to achieve the recommendations in this Plan. They are based on the Michigan Access Management Guidebook prepared for use by local governments by the Michigan Dept. of Transportation in 2001. It is expected that within the next 6-9 months all of the local governments which participated in the preparation of this Plan will adopt the sample access management regulations and begin coordinated development permit reviews with MDOT and other adjacent jurisdictions.

An overview of the specific contents of each of the chapters in this Plan can be found on the eighth page of Chapter One. Any questions on this Plan should be directed to one of the local government representatives noted on the back of the title page, or to the MDOT Transportation Service Center in Crystal Falls.
Chapter One
INTRODUCTION

BACKGROUND

Introduction
This Chapter provides an overview of the US-2/US-141/M-95 corridor and its importance to the region, state and nation. It defines basic terms and explains the purpose and benefits of access management plans. It briefly explains the relationship of this Plan to local master/comprehensive plans and zoning ordinances and the process used to create this Plan.

Importance of Preserving the US-2/US-141/M-95 Corridor
The portion of US-2/US-141/M-95 included in this study is the highway lifeline that runs through three cities and three townships in Dickinson County (see Figure 1-1). It connects the communities, and their residents to jobs, shopping, education, entertainment and major recreation opportunities. It also helps to bind and bond them to historic and contemporary features of the area such as mining, agriculture and forest products activities.

Figure 1-1
Location of Jurisdictions Along US-2/US-141/M-95 Study Area
But the US-2/US-141/M-95 corridor is much more than a local lifeline. It serves as a major east/west route across not only the Upper Peninsula, but the northern United States. See Figure 1-2.

Since the two principal purposes of US-2/US-141/M-95 are: 1) to provide a highway on which vehicles can safely move at design speeds (as long as weather permits), and 2) to link communities along the route, if measures are not vigilantly taken to preserve these functions, then one or both of these highway functions will be lost.

It is natural for local governments and land owners along a state trunkline to view the functions of the highway more narrowly. The opportunity for new economic development and the associated jobs and tax base is often great when highway improvements are made. But if these activities take place in a manner which undermines the integrity of the principal highway functions, then the investment the motorists, trucking firms and other users of the highway have made in the highway can be compromised. If capacity or traffic movement is severely compromised by congestion, or by local traffic “fixes” that undermine the through traffic function of the highway, then at some point the road may have to be moved. Bypasses usually have predictable negative economic impacts on communities. These include:

- Businesses along the old route may suffer as traffic moves to the new bypass.
- The number of jobs and property tax values along the old route may fall.
- Bypasses inevitably move traffic further away from the established community center and all the existing links to the center become challenged as traffic shifts.
- Bypasses are also expensive to plan for, acquire right-of-way for, and build, plus the old route will still need to be maintained.

If a bypass includes no access to abutting property, then through traffic will be diverted and the potential exists to create a more pedestrian-friendly downtown area. However,
this is difficult to achieve unless the bypass is constructed at a freeway standard or all the development rights are purchased when the right-of-way is purchased.

What is needed is a mechanism to balance national, state, regional, and local interests in a manner which protects the function of the highway as well as the existing and future investments in it, along with allowing reasonable economic development opportunities. This Plan sets forth a series of proposed improvements to US-2/US-141/M-95 and a strategy for implementation that seeks to define an achievable balance among what otherwise could be competing state and local objectives. All of these improvements are designed to preserve and enhance the existing location of the highway since no bypasses are proposed.

**DEFINITIONS & BENEFITS**

**Definition of Access Management**

The Michigan Department of Transportation publication entitled *Reducing Traffic Congestion and Improving Traffic Safety in Michigan Communities: The Access Management Guidebook* defines access management as:

“Access management is a set of proven techniques that can help reduce traffic congestion, preserve the flow of traffic, improve traffic safety, prevent crashes, preserve existing road capacity and preserve investment in roads by managing the location, design and type of access to property.”

New conflict points, such as driveways and intersections, can rapidly increase the crash rate along a corridor. Traffic safety on roadways with inadequate spacing of driveways, poorly designed driveways, or improper sight distances for driveways can be improved through the use of appropriate access management techniques.

Roadways with congestion due to too many driveways or driveways too close together, can also be improved through various access management techniques. Remedial access management efforts can be accomplished through alternative driveway design and applied during site plan review for a parcel as it goes through the redevelopment review process. However, the best time to institute access management is when there are few land uses frequently accessing the roadway, or when new roadway improvements are being made.

**Access Management**

This Plan is an access management plan. An access management plan is concerned with improving traffic safety and efficiency of traffic movement with a focus on access to abutting properties. Access management plans usually involve multiple jurisdictions, as there is a recognition that planning and regulating land use in one part of the corridor, needs to be coordinated with other jurisdictions along the same corridor, or the benefits will be marginalized.

**Benefits of an Access Management Plan**

An access management plan identifies driveway closures, consolidations, parking lot cross access options, and alternative means of access such as frontage roads and rear service roads. Implementation of the recommendations in this Plan will improve traffic safety and efficiency of traffic flow. These benefits are most directly realized by motorists. There will be fewer traffic crashes than otherwise would have occurred and congestion will be less severe.
When an access management plan is prepared on an inter-jurisdictional basis, as this one was, it also enhances the likelihood of coordinated land use decisions that both protect and enhance the new investments to be made in the corridor. This is especially true with regards to decisions concerning future access to the highway.

For the eastern portion of US-2 and all of US-141 south of US-2, there is little existing development, so access management is focused on preventive actions. Preventive access management actions are far easier and less expensive to implement than remedial actions. They preserve the function of the corridor and they provide added safety for motorists. If a community is able to put access management plans, review procedures and regulations in place before a corridor develops, then there is a good chance that when development does occur, the roadway function will be preserved, instead of a typical cycle of improve and expand (see Figure 1-3). In this Figure, increased development deteriorates the road capacity and safety due to numerous driveways and creates a seemingly endless cycle of road modifications linked to the new roadway conflict points. This is very costly in time and money for everyone.

![Figure 1-3](Traffic_Improve_and_Expand_Cycle.png)

The Transportation Land Use Cycle

For areas that are already developed, the focus is on remedial access management techniques. Remedial access management focuses on reducing congestion, improving safety and improving aesthetic conditions on arterials that have developed into the familiar strip pattern with numerous separate driveways. Closing or consolidating driveways, sharing driveways, improving on-site circulation, linking adjoining parking lots, and constructing parallel access roads are common access management techniques applied in existing developed areas. Remedial recommendations are largely targeted at the portions of the corridor in the City of Iron Mountain, the City of Kingsford, the City of Norway and parts of Breitung Township.
Preventative and remedial access management objectives are often achieved through site plan review as property is proposed for development or redevelopment. Expansion of roadway capacity or simply reconstructing an existing road also present good opportunities to redefine access points, improve driveway entry and exit geometry along the corridor and to establish turning lanes where appropriate. Older development may take a long time to retrofit, but if the local zoning ordinance requires access improvements as rehabilitation and redevelopment takes place, over time there will be improvement.

If all jurisdictions along a corridor have the same basic access management regulations that are consistent with MDOT’s driveway permit regulations, then the chances of retaining existing highway function go up dramatically. Coordinated regulations are especially important because local governments have all the land use authority, and control key aspects of access decisions, such as parking lot design, location, connections, parallel access and rear service roads, and other features of access that are outside the right-of-way and hence outside the scope of MDOT to regulate. This is especially significant where a roadway has one community on one side of a road and another on the other side. See Figure 1-4.

**Figure 1-4**

**Land Use & Transportation Agency Authority**

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**Benefits of Access Management**

The MDOT Access Management Guidebook identifies the following five benefits of access management.

- Access management improves traffic safety and can prevent vehicular crashes.
- Access management results in shorter travel times and reduces motorist costs.
- Access management extends the function and capacity of roadways.
- Access management improves access to property while enhancing the value of private land development.
- Access management results in nicer communities.

All these benefits are expected from implementation of this Plan.
Poorly Planned and Regulated Land Use Creates Unnecessary Traffic Congestion and Crashes

Figure 1-5 illustrates that how land is used adjacent to roadways has a tremendous impact on roadway function and operations. If unrestricted driveways are permitted, unnecessary traffic crashes and congestion will result, especially if the land is developed for commercial purposes.

Figure 1-5
Cumulative Impact of Increased Roadside Development...

What happens when unrestricted development takes place...

over time...

RELATIONSHIP TO LOCAL MASTER PLANS AND ZONING ORDINANCES

Obviously, the relationship between US-2/US-141/M-95 and abutting land is more important than simply being adjacent. If abutting land develops in a way which undermines the integrity of the public investment in the highway, then future highway improvements will be necessary, that otherwise would not have been (see Figures 1-3 and 1-5). Since local governments have authority through the local planning and zoning statutes to plan and zone for future land use, their decisions can create or prevent future highway problems. It is important therefore, that local governments incorporate key considerations from this Plan into the local master plan (also known as comprehensive plan) and zoning ordinance.

Local master plans set forth, in both text and on maps, land use and public infrastructure improvements for the next twenty years. Statutorily, local master plans are required in order to provide a strong legal basis for local zoning. In December 2001, the Michigan Legislature enacted changes to the planning enabling acts to beef up the relationship between the plan and local zoning, to require communities to review, and as necessary, to update local master plans every five years, and to coordinate plans with neighboring jurisdictions through new mandatory review and comment procedures. When a community has a current future land use map and accompanying text embodied in a local master plan, it is much easier for road authorities to plan future road improvements that are compatible with adopted local master plans.

A local zoning ordinance classifies land for various uses by means of zones or districts which establish permitted uses, and dimensional standards for lots and structures. The zoning map should reflect existing use of land. Land is often rezoned into a different zoning class when consistent with the local master plan and when the necessary infrastructure is in place to accommodate the proposed new use.

In order for local master plans and zoning ordinances to achieve the goals and objectives of this Plan, it will be important for those documents (in addition to the usual elements described above), to be consistent with the access management recommendations in this Plan. It will also be important for local governments along the corridor to adopt nearly identical access management regulations and to coordinate land use and zoning decisions along the corridor. All of the communities along the corridor have already committed to this coordination and to meet periodically to review proposed projects along the corridor (see Chapter Six).

PROCESS FOLLOWED TO CREATE THIS PLAN

The Michigan Department of Transportation and the six cities and townships along the portion of US-2/US-141/M-95 included in this study have worked together for about nine months to complete this plan and associated regulations. Other project partners included the Dickinson County Road Commission and the Dickinson County Planning Commission. The local units of government have undertaken the following actions leading to the adoption of this Plan:

• signed a common Memorandum of Understanding to work on the project (see Appendix A),
• sent representatives to MDOT sponsored training on access management,
• worked with the MDOT consultant to refine the model MDOT access management ordinance to fit local circumstances,
• identified access management problems and corridor improvement needs,
• assisted in its analysis of substantial information,
• worked closely with the consultant and local advisory committee to prepare and refine the Plan,
• assisted with sharing ideas with the public and refining Plan elements,
• committed to assisting in the review of proposed site plans for projects along the corridor, and
• committed to incorporating the final Plan elements into the local master plan and implementing this Plan’s recommendations through future planning, zoning, subdivision and infrastructure decisions.

For its part, MDOT provided substantial leadership, staff and financial assistance to these communities and worked closely with the consultant in the preparation of this Plan. This is the kind of partnership MDOT has promoted since publication of the MDOT Access Management Guidebook as an effective way to plan and implement highway improvements and access management regulations in Michigan. CUPPAD served as project sponsor and manager and provided much of the data used in this study.

OVERVIEW OF CHAPTERS IN THIS PLAN

This Plan has six chapters and an Appendix. Following is a brief summary of the remaining chapters:

• Chapter Two defines the most basic goals and objectives of this Plan.
• Chapter Three presents a detailed description of the corridor, and identifies the key problems and opportunities along the corridor.
• Chapter Four presents a detailed description of both major and minor traffic, safety and access management improvements along the corridor. Associated bus, bicycle, pedestrian and snowmobile issues are also discussed.
• Chapter Five compares existing land use to existing zoning and adopted plans to identify additional existing and future access management issues that should be addressed. Changes to local master plans and zoning ordinances that would be beneficial to implement this Plan are also identified.
• Chapter Six presents the key steps that need to be taken to implement this Plan.
• Appendix: Memorandum of Understanding.
Chapter Two
GOALS AND OBJECTIVES OF PLAN

INTRODUCTION

This Chapter restates the principal challenge of this Plan, and presents basic goals and objectives. The remaining chapters provide the rationale for these goals and the specific recommendations necessary to implement the objectives of this chapter.

ACHIEVING THE PROPER BALANCE

How highways are used, and the improvements they need change over time. However, local governments and MDOT have interrelated responsibilities for land use and highway decisions. This creates special challenges when it comes to meeting competing interests in highways and abutting lands. Following is a concise statement of the principal challenge of this Plan.

To identify improvements to US-2/US-141/M-95 and local regulation of access to the highway that maintain an appropriate balance between safely meeting the mobility needs of through travelers and local highway users in a manner that reflects mutual respect and recognition of the important role that local governments and MDOT each play when making decisions that affect the corridor. In taking the above actions, it is important to always factor in the needs and impacts of each decision on all highway users, with special consideration given to buses, pedestrians, bicyclists, and intersecting trail users.

GOALS

There are five principal goals inherent in achieving the proper balance described above:
1. Maintain and improve (where feasible) the traffic carrying capacity of the highway.
2. Improve traffic safety.
3. Maintain the local economic development benefits of the highway.
4. Maintain a coordinated mechanism for future planning and zoning along the highway.
5. Maintain a coordinated mechanism for state investments in the highway and local infrastructure investments along the highway.

OBJECTIVES

The principal objectives consistent with these goals are listed below:
1. Periodically identify the cause of existing or projected congestion along the highway and following examination of alternatives, select improvements that safely preserve the traffic carrying capacity of the highway.
2. When selecting from among alternative capacity improvements, give special consideration not only to cost-effectiveness, but also to uniformity in design so driver confusion is minimized.

3. When selecting from among alternatives, give special consideration to those that help preserve the investment in existing and planned improvements to the road, such as those that incorporate access management into the design.

4. Design and implement improvement projects in a way which minimizes disruption not only to existing traffic, but also to abutting residences, businesses and other actively used lands.

5. Plan traffic capacity improvement projects to roads managed by MDOT sufficiently far ahead, and in a manner which permits local governments and the County Road Commission, to most effectively coordinate associated infrastructure improvements on intersecting roadways and to accommodate cost-effective utility expansions or replacement.

6. Implement only traffic or intersection improvements that are consistent with this Plan.

7. Periodically update this Plan to ensure that it continues to guide coordinated land use and highway improvement decisions along the corridor.

8. Ensure that land planned and zoned for intensive economic development activities is both well suited for such use, and that such use is compatible with uses on adjoining lands and the physical characteristics and capacity of the segment of the highway providing access.

9. Ensure that prior to approval of intensive new land uses along the corridor, that appropriate traffic impact studies are done and review is coordinated between MDOT, the County Road Commission, the local government in which the development is proposed, and affected units of government in adjoining jurisdictions.

10. Ensure that prior to site plan approval for any land use along the corridor, that the proposed site plan is first reviewed by the Corridor Advisory Committee so that consistent access management decisions can be made along the corridor.

11. Encourage all local units of government along the corridor to adopt and thereafter maintain (with a thorough review at least once each five years), a future land use plan, master plan or comprehensive plan of future land use that serves as the basis for future zoning and infrastructure decisions along the highway, and is carefully coordinated with similar plans in adjoining jurisdictions.

12. Encourage all local units of government along the corridor to maintain (with a thorough review at least once each five years), a zoning ordinance which appropriately manages access to the highway consistent with regulations based on MDOT's model regulations and those of adjoining jurisdictions, and is consistent with the communities future land use, master or comprehensive plan.
13. Encourage all local units of government along the corridor to prepare and thereafter annually update a community wide capital improvement program that lists proposed infrastructure spending by location, cost, source of revenue and timing, with a special focus on coordinating such spending plans with MDOT and the County Road Commission where US-2/US-141/M-95 and county roads are concerned.

14. Encourage MDOT to plan future road and access management improvements along the highway in a manner that is consistent with this Plan, that permits local input prior to final decision-making and that serves as a model of intergovernmental cooperation.

15. Educate citizens, businesses and property owners about the basic contents of this Plan and seek their input prior to adopting any Plan updates.
Chapter Three
ROAD DESCRIPTION, PROBLEM AND OPPORTUNITY ANALYSIS

INTRODUCTION

This Chapter gives an overview of the physical, as well as traffic and safety issues associated with the US-2/US-141/M-95 highway corridor in Dickinson County. The study area for this Plan is described as US-2 from the west Menominee County boundary to the west Dickinson County boundary at the Wisconsin state-line; US-141 from the Wisconsin border south of Quinnesec to the junction with US-2; and M-95 from the Wisconsin border north through Kingsford and Iron Mountain to the intersection of US-2/US-141. The corridor, which is approximately 28 miles in length affects the cities of Iron Mountain, Kingsford, and Norway, and the Townships of Breitung, Norway, and Waucedah.

US-2 and US-141 are classified as U.S. Routes while M-95 is classified as a State Route. All three serve as primary highways for local citizens in the region, but US-2 also serves as a thoroughfare for those traveling across the Upper Peninsula. See Figure 3-1.

Figure 3-1
Location Map
CORRIDOR ROADWAY DESCRIPTION

Roadway Geometry and Speed

From the western edge of Dickinson County and Breitung Township, heading southeast on US-2/US-141 towards the City of Iron Mountain, the speed limit changes several times. Entering into Michigan from Wisconsin, US-2/US-141 is a two lane rural highway with a 55 MPH speed limit until just before its intersection with M-95 where it divides into a four-lane divided highway. After US-2/US-141 merge with M-95, the four-lane divided highway continues a short distance, then becomes a four-lane highway for a mile before widening to five-lanes near the Iron Mountain City limits. At the city limits, the speed limit decreases to 45 MPH and at Grand Boulevard the speed limit decreases to 35 MPH. The speed limit remains 35 MPH until crossing over Chapin Pit where it then decreases to 25 MPH. The five-lane highway ends at Ludington Street where it then becomes four-lane. At the D Street intersection, the speed limit returns to 35 MPH. The four lane highway continues from the intersection of D Street to the intersection of Michigan Avenue, however this segment is under re-construction and will become a five-lane highway by fall of 2005. From the Michigan Avenue intersection to the US-141 intersection, the highway is five-lanes with a speed limit of 45 MPH until passing Iron Mountain Plaza and Dickinson County Hospital where the speed limit increases to 55 MPH.

Just before intersecting US-141 the five-lane highway goes to a four-lane divided highway at the intersection and then continues at the 55 MPH speed limit as a five-lane road until reaching the City of Norway where the highway becomes a four-lane highway and the speed limit decreases to 40 MPH, 600’ east of Belgium Town Road intersection. The speed limit decreases again to 30 MPH 600’ east of intersection at W 9th Street, just before the bend in the road. The speed limit remains 30 MPH through downtown Norway then increases to 40 MPH at the intersection of Walnut Street and goes back up to 55 MPH at E 7th Street intersection, just after the railroad crossing.

As soon as one leaves the City of Norway, the four-lane highway merges into a two-lane rural highway and returns to a 55 MPH speed limit. This speed limit remains until passing Ball Road and traveling 1000’. Here the speed limit reduces to 50 MPH until one is approximately 1000’ past County Road 573 where it increases back to 55 MPH and continues that way to the Dickinson County line.

In the City of Iron Mountain, where M-95 splits off of US-2/US-141 at the East Ludington Street intersection, M-95 (also called Carpenter Avenue) is a four-lane highway with a 25 MPH speed limit until reaching the intersection of Hamilton Street where the four-lane highway becomes a five-lane highway and the speed limit increases to 35 MPH. Continuing traveling 35 MPH heading south on M-95, the five-lane highway continues to Breen Avenue and then narrows to a two-lane highway. From here the speed limit goes up to 45 MPH until just before reaching the Wisconsin border where it slows down to 35 MPH.

Where US-141 and US-2 split, US-141 is a two-lane highway heading southeast to the Wisconsin border at a speed limit of 55 MPH.
Traffic and Safety Analysis

Volumes
According to 24 Hour AADT (average annual/daily traffic) volumes from 1994 to 2003 provided by the Michigan Department of Transportation and analyzed by Traffic Engineering Associates, Inc., US-2/US-141 in Iron Mountain has the highest traffic volume in Dickinson County, with close to 22,000 vehicles counted between H Street and Park Avenue. Looking at a greater area, starting from Margaret Street to the eastern city limits of Iron Mountain, this stretch of US-2/US-141 has the greatest concentration of vehicles per day on the corridor, with approximately 19,000 vehicles counted per day. If one keeps traveling east from the Iron Mountain city limits, the average declines steadily from 13,868 to 3,954 at the eastern edge of Dickinson County. Likewise north of Margaret Street the average number of vehicles per day steadily declines from 16,688 to 6,669 at the Wisconsin border. (See Table 3-1).

M-95 also experiences a large volume of daily traffic with the peak of 17,505 vehicles between Woodward Avenue and H Street. Moving south this peak declines to 5,548 vehicles per day, while north it declines to 5,035 vehicles where Ludington meets US-2. (See Table 3-1).

Table 3-1
MDOT 1994-2003 Average AADT Traffic Volume 24 Hour Count

<table>
<thead>
<tr>
<th>US-2</th>
<th>From</th>
<th>To</th>
<th>1994-2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wisconsin State Line</td>
<td>Pine Mountain Rd.</td>
<td>6,996</td>
<td></td>
</tr>
<tr>
<td>Pine Mountain Rd.</td>
<td>W Jct. M-95</td>
<td>7,036</td>
<td></td>
</tr>
<tr>
<td>W Jct. M-95</td>
<td>Moon Lake Rd.</td>
<td>11,800</td>
<td></td>
</tr>
<tr>
<td>Moon Lake Rd.</td>
<td>NCL Iron Mountain</td>
<td>12,081</td>
<td></td>
</tr>
<tr>
<td>NCL Iron Mountain</td>
<td>Lake Antoine Rd.</td>
<td>15,148</td>
<td></td>
</tr>
<tr>
<td>Lake Antoine Rd.</td>
<td>Margaret St.</td>
<td>16,688</td>
<td></td>
</tr>
<tr>
<td>Margaret St.</td>
<td>Third St.</td>
<td>19,875</td>
<td></td>
</tr>
<tr>
<td>Third St.</td>
<td>E Jct. M-95</td>
<td>19,668</td>
<td></td>
</tr>
<tr>
<td>E Jct. M-95</td>
<td>H St.</td>
<td>18,891</td>
<td></td>
</tr>
<tr>
<td>H St.</td>
<td>Park Ave.</td>
<td>21,915</td>
<td></td>
</tr>
<tr>
<td>Park Ave.</td>
<td>ECL Iron Mountain</td>
<td>19,972</td>
<td></td>
</tr>
<tr>
<td>ECL Iron Mountain</td>
<td>Dawns Lake Rd.</td>
<td>13,868</td>
<td></td>
</tr>
<tr>
<td>E Jct. US-141</td>
<td>Lake Antoine/Quinnesec Rd.</td>
<td>10,536</td>
<td></td>
</tr>
<tr>
<td>Lake Antoine Rd.</td>
<td>WCL Norway @ Pine Creek Rd.</td>
<td>10,247</td>
<td></td>
</tr>
<tr>
<td>WCL Norway @ Pine Creek Rd.</td>
<td>9th St.</td>
<td>10,409</td>
<td></td>
</tr>
<tr>
<td>9th St.</td>
<td>Jct. US-8</td>
<td>10,269</td>
<td></td>
</tr>
<tr>
<td>Jct. US-8</td>
<td>7th Ave., East of the Railroad</td>
<td>10,010</td>
<td></td>
</tr>
<tr>
<td>7th Ave., East of the Railroad</td>
<td>Cedar St.</td>
<td>6,732</td>
<td></td>
</tr>
<tr>
<td>Cedar St.</td>
<td>Kellerman Rd.</td>
<td>6,272</td>
<td></td>
</tr>
<tr>
<td>Kellerman Rd.</td>
<td>Co. Rd. 569 to Foster City</td>
<td>4,548</td>
<td></td>
</tr>
<tr>
<td>Co. Rd. 569 to Foster City</td>
<td>WCL Powers</td>
<td>3,954</td>
<td></td>
</tr>
</tbody>
</table>
CRASH ANALYSIS

Crash analysis of the years 1994 to 2003 yielded the following top fourteen crash locations on the corridor. The data was provided by MDOT, and sorted and analyzed by Traffic Engineering Associates, Inc. Table 3-2 illustrates the areas with the highest number of crashes during this nine year period. All crash locations are in the cities of Kingsford and Iron Mountain with the highest concentration along US-2/US-141 from A Street in Iron Mountain southeasterly to Jackson/Michigan Avenue. This is a 0.6 mile section of roadway with 244 crashes. These locations are generally mapped on Maps 4-1 through 4-6 in the next chapter.

### Table 3-2
**Serious Crash Locations Along US-2/US-141/M-95**

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Number of Crashes</th>
</tr>
</thead>
<tbody>
<tr>
<td>US-2/US-141 @ “H” Street</td>
<td>85</td>
</tr>
<tr>
<td>US-2/US-141 @ Jackson</td>
<td>54</td>
</tr>
<tr>
<td>US-2/US-141 @ Michigan Avenue</td>
<td>51</td>
</tr>
<tr>
<td>US-2/US-141 @ Margaret/Lake Antoine</td>
<td>49</td>
</tr>
<tr>
<td>US-2/US-141 @ “G” Street</td>
<td>42</td>
</tr>
<tr>
<td>M-95 @ Breitung</td>
<td>40</td>
</tr>
<tr>
<td>M-95 @ “C” Street</td>
<td>39</td>
</tr>
<tr>
<td>US-2/US-141 @ “F” Street</td>
<td>36</td>
</tr>
<tr>
<td>US-2/US-141 @ Third Street</td>
<td>36</td>
</tr>
<tr>
<td>US-2/US-141 @ M-95</td>
<td>32</td>
</tr>
<tr>
<td>US-2/US-141 @ “D” Street</td>
<td>26</td>
</tr>
<tr>
<td>M-95 @ East Boulevard</td>
<td>25</td>
</tr>
<tr>
<td>M-95 @ Hughitt</td>
<td>21</td>
</tr>
<tr>
<td>US-2/US-141 @ “A” Street</td>
<td>18</td>
</tr>
</tbody>
</table>

KEY ACCESS MANAGEMENT CONCEPTS

The following sections provide an introduction to some of the concepts that will be recommended for implementation on the US-2/US-141/M-95 corridor within Chapter Four. The concepts in this section outline methods to create a uniform treatment in access management to minimize potential conflicts between drivers.

Limit the Number of Driveways

A key to keeping crash levels low is restricting the number, location and spacing of driveways along the US-2/US-141/M-95 corridor. Numerous driveways along a corridor can cause driver confusion as drivers struggle to figure out exactly which driveway they need to turn into. The most basic fact associated with access related traffic crashes is that more driveways along a roadway result in more crashes. Driveways create conflicts between vehicles on the roadway and vehicles entering or leaving the roadway. Research shows that the more driveways per mile the higher the crash rate. See Table 3-3.

<table>
<thead>
<tr>
<th>Driveways per Mile</th>
<th>Representative Crash Rate per Mile for a Multi-lane, Undivided Roadway</th>
<th>Increase in Crashes Associated with Higher Driveway Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 20</td>
<td>3.4</td>
<td>-</td>
</tr>
<tr>
<td>20 to 40</td>
<td>5.9</td>
<td>+ 74%</td>
</tr>
<tr>
<td>40 to 60</td>
<td>7.4</td>
<td>+ 118%</td>
</tr>
<tr>
<td>Over 60</td>
<td>9.2</td>
<td>+ 171%</td>
</tr>
</tbody>
</table>

Source: MDOT Access Management Guidebook, 2001

Average lot widths on both sides of a road would be about 225 feet at 40 driveways per mile and about 170 feet at 60 driveways per mile. This is substantially more than is common in Iron Mountain, Kingsford, Norway, and Vulcan.

Whenever possible, communities and road authorities should limit the number of driveways per lot. This can be done through restrictions within the zoning ordinance and by using other techniques like shared access and connected parking lots. Recommendations will be made in Chapter Five.

Speed Progression

Poorly spaced signals hamper traffic progression. At least one-half mile between signals is typically desirable. Signals can provide the necessary break in traffic flow to permit vehicles to egress from properties lining the arterial. If signals are located too close, unnecessary traffic congestion can occur from through traffic which competes for road space with vehicles exiting driveways between signals. Irregularly spaced signals destroy the signal progression and therefore hamper traffic flow by increasing travel time and reducing capacity. After the relocation of one signal from downtown Iron Mountain to F Street in Summer of 2005, there will still be three signals one-block apart downtown. At an appropriate time, consideration should be given to removing at least one of those signals or possibly relocating one to Lake Antoine Road if warranted. Numerous
driveways can also limit speeds because ingress and egress vehicles cause traffic to slow down.

**Left-turn Movements**

Many of the access management techniques focus on reducing the number of driveways and eliminating left-turn movements into driveways. Medians and restricting turns can reduce the number of left-turn crashes to and from driveways. This is important because many studies show nearly 75% of all access related crashes are left-turns. See Figure 3-2. The left-turn movement into a driveway, without the benefit of a signal, accounts for 47% of the crashes associated with driveways. Twenty-seven percent of the crashes are turning left out of the driveway. Only 26% of driveway crashes are right-turns (with 16% in and 10% out).

![Figure 3-2: Driveway Crashes by Movement](source.png)

**Existing Land Use, Zoning and Future Land Use**

The land uses developed along a corridor can greatly affect the capacity, safety and operation of the roadway. Commercial development along a corridor can often be characterized by a long row of separate narrow lots with individual driveways to each business, sometimes called “strip commercial development.” The large number of driveways which typically characterize this form of commercial development can result in increased congestion and traffic crashes because of the higher number of turning movements associated with commercial land uses compared to residential or other uses. There are also several entrances and exits to businesses along the US-2/US-141/M-95 corridor that are not well defined. An example is illustrated in Photo 3-1. These are commonly characterized as a large areas of pavement without curbing or pavement markings to direct traffic coming in and going out (see Photo 3-1).
By planning and zoning for mixed uses along arterials, by clustering multiple commercial uses around a single access road, and by limiting driveways on arterials, then commercial development can be accommodated without the attendant access management problems of strip commercial development. Mixed-use development might also link residential uses with commercial, so that people do not need to always use their car to go shopping. Mixed-use development could also provide office buildings with restaurants and shopping so workers could link potential lunchtime or after work trips. Linking day care establishments with office developments have been popular mixed-use developments which allows children to be near parents and reduces two daily trips from the roadway. Specific land use and zoning recommendations for the US-2/US-141/M-95 corridor will be introduced within Chapter Five.

**Environmental Features and Conditions**

Environmental features, such as the topography of an area, can have an impact on the safety of a road. Slopes along US-2/US-141/M-95 vary greatly and may be a factor in some of the crashes along the corridor particularly in inclement weather. Intersections with significant slopes are of particular concern because adequate sight distance is very important at an intersection. In several cases, a steep slope is combined with an angular intersection to make it even more challenging. See Photo 3-2 and Figure 3-6. Recommendations for individual intersections are presented in Chapter Four.
Scenic and Aesthetic Considerations
Typically improving signage, views and landscaping is thought of as an aesthetic improvement. But these improvements can also help improve safety on the corridor as well. Creating uniform signage for traffic and pavement markings can help driver orientation to the road, and simple, uncluttered signs for private businesses can also help improve driver safety. This involves establishing maximum height, area and location standards for signs. Also important is limiting the number of signs, which can be distracting to the driver. The consolidation of sign marques can provide a neater appearance as well as a safer corridor. See Figure 3-3.

Figure 3-3
Consolidated Sign

Community “Welcome” signs can provide the driver information on where they are, but they need to be placed in an area where they can be easily viewed, and if at all possible, should be located at a focal point of entry to the community where there are no sight distance problems.

Landscaping and street trees are very important to “soften” the built environment and reduce the amount of pavement. However, these plantings need to take into account the road right-of-way as well as sight distances in and out of driveways. See Chapter Five for specific recommendations for aesthetics on the corridor. See Photo 3-3.

Photo 3-3
Landscaping Along Highway

Source: Thyra Karlstrom, CUPPAD, 2004

PRINCIPAL ROADWAY AND DRIVEWAY DESIGN STANDARDS

Capacity Improvements
Additional Lanes
Adding lanes is a traditional solution implemented by many local governments and road agencies facing traffic congestion. However, particularly in urban areas where there is a lot of development adjacent to a highway, implementing access management strategies is often more cost effective than adding lanes due to the extremely high cost of purchasing additional right-of-way, moving utilities, and relocating parking, signs and any structures. Widening often also results in businesses and homes being very close to the new lanes, causing sight distance problems for motorists and noise problems for residents and shoppers.

Yet, where traffic volumes warrant widening a road and adding lanes, the investment will be maximized by also consolidating driveways, installing parallel access roads, and implementing other appropriate access management techniques as a part of the
The investment in added capacity should be protected by regulating the number and spacing of driveways that access the roadway.

**Boulevard Designs**

Raised medians separate opposing traffic and reduce conflict points by eliminating left-turns into and out of driveways along an arterial. In fact, when properly designed, a roadway with limited median crossovers is the safest design with the maximum traffic carrying capacity. Medians are also effective at intersections to guide traffic while also separating it from opposing traffic. Separation allows for quicker turns and less traffic backups. US-2 from Norway to US-141 and from Iron Mountain to the border with Wisconsin are good candidates for boulevard designs.

**Standard Median**

The standard MDOT 50-60 foot median requires about 270 feet of total right-of-way. The standard median design also does not allow left-turns at intersecting roads. Figure 3-4 illustrates a standard Michigan median with an indirect left-turn. This is a safe design that has been widely copied around the world.

**Narrow Width Medians**

Narrow width medians, center islands that vary from 20 to 40 feet have been utilized in urban or suburban areas in Michigan where the right-of-way did not allow a standard median width. The narrow width median may require special turn-around lanes for trucks and buses because the narrow width geometry cannot adequately accommodate the large vehicles. See Photo 3-4 for an example. If boulevards were constructed on US-2, there are places where narrow width medians would be necessary because of inadequate space for a standard MDOT boulevard design.
Roundabouts
Roundabout design is beginning to be popular in America because of the safety benefits, better traffic progression, and because roundabouts can create an “entry” point to a community by creating a more interesting intersection design. They are also typically easy to maintain in the winter because the snow plows can turn-around so easily. There are several roundabouts in Wisconsin north of Green Bay. One is in Howard and another is on Highway 22 at US-141 by Lena.

A roundabout is often used for intersections as an alternative to signalization. Roundabouts are designed with yield signs at entry points, which allow drivers to flow around the circle without stopping at a traffic light. Geometry of a roundabout is limited to speeds of 10-20 MPH within the circle. The diameter must be large enough to accommodate logging trucks and other large vehicles that commonly use the intersection. Roundabouts have been documented as safer than old traffic circles and traffic light controlled intersections because of the reduced number of conflict points from drivers making left-turns. “The injury crashes are documented to be 35 to 78% lower than a typical signaled intersection. Overall, the average delay at a roundabout is estimated to be less than half of that at a typical signalized intersection.” However, roundabouts typically require more space than a standard intersection and must have well designed approaches and exits to function properly. They are also expensive. See Figure 3-5. Two intersections on the corridor may be worthy of study for a roundabout design. These are the north and south junctions (US-141 at US-2 on the east side of Iron Mountain, and M-95 at US-2 in Breitung Township north of Iron Mountain, respectively). If a roundabout design was the desired preferred intersection alternative for either of these intersections, each such location would require a feasibility study to determine if the roundabout design could be achieved in a safe and cost-effective way that retained,

if not improved, traffic flow (without decreasing level of service or causing additional user delay). If the analysis demonstrated feasibility and cost-effective results compared to alternative intersection designs with the same benefits, then the specifics of the roundabout design would be decided upon during the design phase. See Figure 3-5.

**Figure 3-5**
*Roundabout Example*

Source: Planning and Zoning Center, Inc. May 2000

**Other Intersection Safety Improvements**

**Improve Turning Radius**
Because there are many oblique intersections along US-2/US-141/M-95, and such intersections create visibility and safety issues for drivers, creating “T intersections” is a primary recommendation in Chapter Four. Creating a “T intersection” involves realigning the intersecting road so it is perpendicular to the main roadway. This allows for better, safer turning angles. See Figure 3-6.

**Figure 3-6**
*Creating a “T Intersection”*

Source: MDOT Traffic and Safety Note VII-640A “Turned-In Roadways” 2-4-91
Right-turn Lanes
Right-turning vehicles can be removed from the arterial traffic with dedicated right-turn lanes. This allows through traffic to proceed without much slowing, preserving capacity and reducing the potential for crashes. MDOT guidelines suggest the use of right-turn lanes at any intersection where a capacity analysis determines a right-turn lane is necessary to meet a desired level of service.

Access Management Improvements
This section provides a brief introduction to access management terminology which is used to describe recommendations within Chapter Four.

Close or Alter Driveways
A common problem along US-2/US-141/M-95 is properties with too many driveways. Sometimes there are three or four driveways when one well designed driveway is all that is needed. When there is not more than one driveway per parcel, and when driveways are properly spaced between properties, the roadway is safer, there are fewer crashes, and traffic flows better. As a result, one of the most effective access management techniques is driveway closure and/or redesign. An existing driveway to a parcel can not be closed unless there will still be reasonable access provided in another way, such as from a shared driveway or, an alternative access point as for example, from the rear or side of the property. Closing driveways requires careful education of property owners and should be a key part of any plan to rebuild or expand capacity on a roadway.

Driveway alterations can be a fairly inexpensive fix that provides a large benefit through reduction of crashes. Most commonly, driveway closures and alterations occur as part of a road reconstruction project, or when a property is proposed for redevelopment or new use. In these instances, site plan review is used as the process to ensure appropriate driveway design.

Combine or Consolidate Driveways
Close driveway spacing is a problem for two reasons: 1) for drivers turning out of adjacent driveways, competing for the same roadway; 2) for drivers that have to react to the turning movements from ingress and egress traffic at several points simultaneously. Consolidating driveways can remove a conflict point from the road and if the driveways are too closely spaced, consolidating driveways can result in the redesign of a safer driveway for both businesses. Patrons frequently go in the “wrong” driveway because of the poor design. Figure 3-7 illustrates how driveways may link together.

Two or more adjacent properties can often share driveways and limit access points to an arterial. Sharing driveways is particularly valuable when lot frontages are narrow and alternative access is not available. In newer commercial developments, shared driveways are very common. Shopping plazas often provide one or two driveways for all the stores within them. Abutting shopping plazas can also often be linked together by connecting parking lots so that drivers can avoid exiting onto main arterials when going to adjacent properties.
Frontage Roads and Rear Service Roads

Frontage roads and rear service roads can be utilized to keep traffic off of the main arterial. They can greatly reduce turning movements and direct traffic to collectors where a traffic signal can facilitate safer turns. However, frontage roads have come under some scrutiny, because they often have little stacking space near the arterial and can create confusing turning movements, if used with high traffic generation uses. Adequate space may also be unavailable for a frontage or rear service road. Frontage roads can be most effectively utilized with low traffic generators like residential and small office uses or service uses like dental and eye care. Rear service roads can usually be designed to handle larger volumes of traffic and are better for servicing commercial and industrial uses.

Frontage roads or rear access between parcels can also aid connections between properties on a smaller scale. Rear access roads should be used whenever possible to more effectively move truck traffic around a commercial site and provide alternative access connections for automobile traffic between businesses. These connections can allow traffic to circulate between adjacent commercial properties without going onto the main arterial. See Figure 3-8 which illustrates front and rear access roads.
Note: Rear access roads are usually safer and more effective than frontage roads and should be used whenever possible. Frontage roads should not be too close to the roadway or used where the volume of traffic is too great for safe vehicle use. Source: MDOT Michigan Access Management Guidebook, page 3-25, 2001

**Improved Local Street Connections**
Secondary streets can be a very effective means of access management when they function to keep local vehicles off of the main roadway. This requires an interconnected design with streets running parallel to the main road and intersecting streets at appropriate intervals. There are very few places along the corridor where this design exists and functions well. Chapter Four includes recommendations for extending local streets, particularly in areas where commercial development could be accommodated away from the arterial.

**Closing Local Streets**
Sometimes a low volume local street contributes to congestion and unsafe turning movements. Where there are alternate streets nearby, closing such streets is often a useful traffic management technique. I Street in Iron Mountain will be closed in summer 2005. Washington Street should be considered for closure in the future.

**Lock-In Driveways**
In rural undeveloped areas, it is important to limit the number of points of access from future land divisions. This can be accomplished by a short ordinance requirement that “locks-in” not more than one access point per parcel as of the date of the ordinance. Future land divisions must take access off of the locked-in access and cannot have separate access. See description and graphic in Chapter 5.
Chapter Four
PROPOSED IMPROVEMENTS AND RATIONALE

INTRODUCTION

This Chapter provides recommendations for corridor improvements within the study area. It begins by summarizing the proposed major improvements and then detailed improvements for each stretch of highway. Recommendations range from adding lanes, improving intersections, adding boulevards, converting diagonal intersections to T-intersections, closing or consolidating driveways, and other access management solutions. The final section in this chapter includes pedestrian, trail and transit observations.

RECOMMENDED IMPROVEMENTS

The US-2/US-141/M-95 Corridor Advisory Committee assisted the Planning and Zoning Center, Inc. with the identification of specific traffic flow and safety improvements along the corridor. The following list of recommended improvements is presented in three different sections. The first section is the stretch of US-2 starting at the Wisconsin/Michigan state line heading east from the western border of Dickinson County (recommendations 1-122). The second section is the stretch of M-95 starting at the Wisconsin/Michigan state line north through Kingsford to US-2/US-141 (recommendations A-T) and the last section is the stretch of US-141 starting at the Wisconsin/Michigan state line heading north to US-2 (recommendations a-c).

The recommendations are listed per highway section. Each issue or recommendation is numbered or lettered as outlined above and is visually represented on the attached Maps 4-1 to 4-6. The numbering is not a representation of importance of one issue over another issue; it is merely a means to organize the issues and recommendations. The list represents a collection of issues, ranging from pedestrian oriented concerns, driveway closures, and intersection improvements.

In addition to these recommendations, future consideration should be given to the following road connections within Iron Mountain that lie outside of the 1,000’ corridor study area; extend Terminal Avenue east to Hydraulic Falls Road and also extend west to connect with Woodward Avenue at the M-95 intersection; extend Knight St. west to connect with East Boulevard at the Nelson Drive intersection and create a new road from the intersection of South Park Avenue and South Jackson Street heading east to intersect with Hydraulic Falls Road and East Breitung Avenue; and construct a road from the newly extended Terminal Avenue and Hydraulic Falls intersection south and “T” into Breitung Avenue. These new roads are represented as dashed lines on Map 4-2, as well as a few others. The locations are generalized and exact locations would depend upon topographic limitations, property ownership, funding and opportunity. The key is that an interconnected road system, and especially new roads paralleling US-2 will do the most in the future to retain the movement functions of US-2 and the public investment that exists in that road.
Future driveways should be planned to share access from a limited number of access points. All new driveways should be spaced in accordance with the MDOT Guidelines for Driveway Spacing as shown in Table 4-1 below. These standards will be included in the model access management ordinance in Appendix B.

### Table 4-1

**Guideline for Unsignalized Driveway Spacing**

<table>
<thead>
<tr>
<th>Speed on Roadway (MPH)</th>
<th>MDOT Spacing Guidelines (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>130</td>
</tr>
<tr>
<td>30</td>
<td>185</td>
</tr>
<tr>
<td>35</td>
<td>245</td>
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<tr>
<td>50</td>
<td>455</td>
</tr>
<tr>
<td>55</td>
<td>455+</td>
</tr>
</tbody>
</table>

Source: “Spacing for Commercial Drives and Streets,” MDOT Traffic & Safety Division Note 7.9, Table 1.

**US-2 from the West Dickinson County line (Wisconsin/Michigan border) east to Dickinson/Menominee County line**

There are 122 identified specific sites, or areas with recommendations within this stretch of highway. Some recommendations address safety issues, including reducing the number of access points to US-2/US-141/M-95, better defining entrances and exits from businesses to eliminate confusion, constructing rear service roads and frontage roads, and eliminating oblique angles at several intersections. See Maps 4-1 and 4-6 for the location of each of the following recommendations.

**Map 4-1**

1) Create shared private driveway or relocate existing driveway on east for two driveways too close together, to create recommended 455’ of separation distance.

2) Sign U-shaped drive for use by maintenance and police vehicles (from Wisconsin) so it is not confused as a driveway or other access.

3) Preserve visibility at Pine Mountain Road and US-2 intersection. Do not plant trees or place other obstructions in this intersection.

4) Consider constructing a channelizing island at Bass Lake Road Intersection and US-2 to give some protection to vehicles turning left onto US-2 as visibility is somewhat limited due to the curve, or square up intersection to reduce turning radius. Another alternative is to close Bass Lake Road and re-route so it is directly across from Pine Mountain Road.

5) Either extend two west-bound traffic lanes from western edge of current boulevard section, west of US-2/M-95, to west of Pine Mountain Road, or choke to 2 lanes at the west median crossover (several hundred feet to the east). In order to extend two westbound lanes to west of Pine Mountain Road, the bridge over the railroad and Bass Lake Road will need to be widened. Any major work on a bridge over a railroad requires that the bridge meet the minimum railroad under-clearance as a part of the project. The bridge would need to be raised
about two feet to meet minimum under-clearance criteria. This will impact grades for driveways and Bass Lake Road. Another option would be to lower the tracks a couple feet.

6) The intersection of US-2 and M-95 here (north junction) and at #65 (Map 4-3) the south junction on the east side of Iron Mountain could both benefit from redesign to improve safety of turning movements, to reduce traffic delays and reduce confusion at night. Several options should be considered. However, no decision on an option should be made without first putting into the context of a possible new US-141 route into Michigan. This will require careful coordination with the Wisconsin DOT. Should the route location change to US-8 in Norway, or to the Spread Eagle Plains or Florence in Wisconsin, then the traffic volume at the north and south junction would be greatly affected and different design options may emerge. Since the route of US-141 through Niagara is so twisting, slow and easily congested, an alternate route should be considered. If no US-141 route location change were expected for more than ten years, then improvements to the north and south junction should be considered much sooner. Each option should be considered in tandem for each junction at the same time, and some preference should be given to the Wisconsin DOT. Should the route location change to US-8 in Norway, or to the Spread Eagle Plains or Florence in Wisconsin, then the traffic volume at the north and south junction would be greatly affected and different design options may emerge. Since the route of US-141 through Niagara is so twisting, slow and easily congested, an alternate route should be considered. If no US-141 route location change were expected for more than ten years, then improvements to the north and south junction should be considered much sooner.

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1. Construction of a standard five-lane roadway with a standard signalized intersection;
2. Consider redesigning the intersection as a roundabout and eliminate the traffic signal; and
3. Consider creation of a proper indirect U-turn with fewer median cross-overs and a traffic signal in each direction.

7) Reduce from three to two driveways or use T frontage road with a single driveway.

8) Close little used driveway access to US-2. Use existing driveway access on Timber Line Road.

9) Consolidate two driveways into one. Either provide one new driveway to be centrally located or provide two widely separated driveways; both options should have driveways located directly across from the property on the west side of US-2, (if not closed, see #8 above).

10) Consolidate two driveways into one; unless semi-truck use requires two driveways, then move the southern driveway farther south and mark each for one-way use only. Use existing driveway aligned with Moon Lake Drive for ingress and egress.

11) Consolidate four driveways into two. (Riverside Auto).

12) Consolidate two driveways into one (between the two existing ones).

13) Construct a shared driveway for two to three homes or create a short residential frontage road at the edge of the right-of-way to Sunset Drive serving seven to eight properties.

15) Consolidate two driveways into one.

16) Carefully plan for a single access into the new community college site.

17) In future development of this property, restrict adding new driveways. Either use shared driveway with abutting property to the north, or gain access from Frank Pipp Drive on south.

18) Consider changing from four to five lanes from Frank Pipp Drive west to M-95 or construct as a boulevard section.

19) Close northern most driveway and consolidate two driveways into one; or close both driveways and use the existing driveway located 200’ south of Frank Pipp Drive for ingress and egress.

20) Consider closing two driveways and have five properties share two accesses and a frontage road to US-2. Remaining driveways should be aligned with existing driveways on the east side of US-2.

21) Consolidate two driveways into one. Use the existing driveway located off of Pine Street for ingress and egress.

Map 4-1 & 4-2
22) Install traffic signal at Lake Antoine Road/Railroad Street and US-2 when traffic meets warrants. Also study need for and best options for safe crossing of US-2 at Lake Antoine Road/Railroad Street for pedestrians and bicyclists. At a minimum, consider a ramped overpass or tunnel since the crossing is so wide. If a tunnel is used, integrate use by snowmobiles into the design. If a pedestrian push button signal design is used, be sure pavement markings clearly depict pedestrian crossing area.

23) Consider closing long driveway neck and consolidating two driveways into one.

24) Consolidate three driveways into two. Use the northern most and southern most driveways for ingress and egress to US-2.

25) Consider closing driveway located 150’ south of Spring Street. Use Spring Street for ingress and egress.

26) Use shared driveways and connected parking lots as the vacant lot develops so there are only two driveways serving the three parcels and the design continues to accommodate semi-trucks at the motel.

27) Consolidate two driveways into one. Use the existing driveway located 650’ south of Spring Street for ingress and egress to US-2.
28) Explore the possibility of constructing a rear service road on old rail line. Rear service road to run parallel to US-2 from at least Railroad Street to Hamilton Road.

29) Close driveway, located 100’ southwest of North Millie Street. Use shared driveway across from N Millie Street and US-2 intersection.

30) When property is developed, align a single new driveway with one of the existing driveways across US-2 and close existing driveway.

31) Consolidate two driveways into one. Use the existing driveway located 150’ southwest of East Grand Boulevard.

32) If possible, align existing driveway with East Stanton Street and US-2 intersection to eliminate offset. If Quarry property is redeveloped carefully manage access as part of redevelopment.

33) Define driveway access (install a proper driveway) off of West Main Street at southwest corner of West Main Street and US-2.

34) Access too close to Chapin Street, close and relocate if feasible.

35) Consolidate to a single access to US-2.

36) Close driveway access to US-2. Use 4th and 3rd Streets for ingress and egress if feasible.

Map 4-2

37) Consolidate four driveways into two. Use the existing northern-most and southern-most driveways for ingress and egress to US-2.

38) Add landscaping along the west side of US-2 from West Fleshiem Street to East Ludington Street to beautify entry to downtown. Be sure the design does not adversely affect the field of vision for the motorist.

39) Examine traffic signs related to the signals and street turning movements to ensure there is no driver confusion and/or no unintentional incentive to rush thru to the next signal. (Signs are scheduled for replacement in 2007.) Conduct traffic signal timing study from East Ludington St. to West B Street. Determine if current sequence of traffic lights matches the current standard, and if changing the sequence would decrease traffic congestion between East Ludington Street through West B Street. Also determine feasibility and desirability of reducing speed thru downtown Iron Mountain to make the area more pedestrian friendly. Note: these are generally incompatible objectives and MDOT should work with the city to decide on either the objective with the most credibility or a balanced alternative. Also, as part of improvements underway in the summer of 2005, the signal at Hughitt and US-2 is being removed and a new signal at F Street is being installed. Consideration should be given to removing another downtown signal if warrants are no longer met. According to MDOT, warrants are currently not met for the signal at A Street. If the signal at A Street were removed, pedestrians should be encouraged to use B Street and Ludington Street.
40) Improve paint striping at all pedestrian crossings located at traffic signals in the downtown, and consider adding messages warning drivers of pedestrians crossing the streets and encourage pedestrians to use the signalized locations. Currently, striping of crosswalk markings is done every other year. It may need to be annually in downtown Iron Mountain.

41) Close Washington Street at US-2 (if it is not accomplished as part of 2005 improvements).

42) Connect parking lots and install a shared driveway between Family Video and Damian’s located at the northeast corner of Washington Street and US-2 intersection. Improve alley access on this block for rear access.

43) Relocate sign and use a consolidated sign panel to advertise all three businesses.

Following the extensive reconstruction of US-2 from Washington to Michigan Avenue in 2005, it may be appropriate to periodically evaluate new traffic movements and consider (regarding points 44-54):

44) Either aligning Mid-Town Mall main driveway with East G Street or realigning East G Street to line up with the Mid-Town Mall entrance. If so, redesign parking lot to match new openings on East F Street and East G Street and improve alleys between F, G and H Streets to make it easier to channel traffic to signalized intersections.

45) Close continuous opening at northwest corner of East G Street and US-2 intersection. Create driveway off of alley and as mentioned above, improve current alley conditions from East F Street to East H Street.

46) Upon redevelopment of McDonald’s site, relocate driveways at McDonald’s, located on the west corner of H Street and US-2 intersection so the northern-most one is from within the Mid-Town Mall and the western-most access off East H Street are used and existing accesses are closed. In the meantime, convert the driveways located closest to the intersection of H Street and US-2 to right-out only if feasible.

47) Consolidate driveways into one. Use the existing driveway at the traffic signal at the intersection of East H Street and US-2 for ingress and egress.

48) Square up the access to Jackson by using one existing shared driveway at the South Jackson Street and US-2 intersection for ingress and egress onto US-2.

49) Better define not more that two driveways accessing South Jackson Street.

50) Interconnect parking lots on northwest corner of Park Avenue and US-2 intersection (paint store, Chinese Restaurant, motel and new pizza shop, plus lots to north when they develop).
51) Close exiting driveways at Pomps Tire Place that intersect with US-2. Remodel building for rear entrance access off of Park Avenue. Also consolidate five driveways to three, north of Pomps to north side of Pasty Shop. Some of this recommendation is included in the 2005 reconstruction project.

52) Improve alley behind the Holiday Gas Station between Michigan Avenue and Park Street so more vehicles gain access there from signaled intersections instead of directly from US-2.

53) Relocate existing entrance to Taco Bell drive thru to furthest possible location from the intersection of US-2 on the private road leading to Econo Foods and connect parking lot with Best Western using a shared driveway. Consider acquiring the road segment leading to Econo Foods for a public street if Terminal Road is extended east to K-Mart (see below).

54) Consolidate two driveways accessing US-2 into one, located on the Best Motel and the restaurant at the northwest corner of Michigan Avenue and US-2. Use existing driveway located 200’ from intersection for ingress and egress to both.

55) Re-examine the speed limit on US-2 from Park Avenue east to US-141. Determine if reducing speed will promote safety and reduce traffic incidents.

56) Extend Terminal Avenue East to K-Mart Road and Hydraulic Falls Road intersection. This would provide a parallel access road to US-2 with access to the mall.

57) Extend Oslo Avenue, following the contour behind Best Motel to the Hospital parking lot.

58) Realign and extend Hydraulic Falls Road to the west side of the Hospital parking lot and close off existing portion of Hydraulic Falls Road.

59) Examine extending a new connecting road perpendicular to the K-Mart parking lot road to US-2, intersecting at the center Hospital drive (which was originally planned when the Mall was created). Then relocate traffic signal from its location a few hundred feet to the east (in front of Wells Fargo Bank) to this new entry location. Do not allow the existing parking lot east of the new connecting road to connect to the new connecting road or there won’t be enough stacking space for left turning vehicles. When examining signal spacing relative to the signal at Michigan Avenue, consider moving signal to Park, extending Park over the railroad tracks to the south and connecting Terminal Avenue to the Econo Foods entry to US-2 at Michigan Avenue.

60) Install rotary at existing K-Mart parking lot intersection where the road accessing US-2 and K-Mart parking lot intersect. This will help reduce the congestion on the intersecting streets within the Mall area.

61) If current use of this site changes, consolidate driveways to two, or put in frontage road.
62) If railroad line behind Home Depot is abandoned, consider converting into a rear service road parallel to US-2 connecting at least as far as West H Street.

**Map 4-3**

63) Extend Lakeview Drive in the mobile home park to the Home Depot parking lot and extend eastern access road to Home Depot south all the way to Breitung Avenue.

64) Lock-in driveways (to one per parcel) from Dawns Lake Road east to US-141 intersection on both sides of the road.

65) See discussion and options for #6 on Map 4-1. In addition consider: 1) constructing a standard five-lane roadway with a standard signalized intersection by moving US-2 as far north as possible; 2) constructing a roundabout; or 3) constructing an indirect-U on eastbound and westbound US-2 by extending the boulevard to the cemetery entrance on the west side and creating a proper U-turn at the east end; or 4) constructing a bridge for left-turns using a modified cloverleaf while not disturbing thru traffic on US-2. This last option is very expensive and considerably more traffic on US-141 would likely be necessary to justify it. If US-141 were rerouted in Wisconsin, it would not be necessary.

66) Consolidate four driveways into two and connected with a frontage road (if existing use can be adequately serviced). Use the existing driveway located 500’ west of Baler Road on the east side and the furthest existing driveway on the west side.

67) Align intersection at Baler Road / 3rd Street and US-2 intersection to eliminate offset.

68) Construct a rear service road from Baler Road to Lake Antoine Road to serve properties along US-2.

69) Create a T-intersection with US-2 and Pine Street.

70) As long as the two parcels remain in one ownership and one use, close driveway located 50’ west of Bluff Street. Use Bluff Street and Pine Street for ingress and egress.

71) Close continuous opening on northwest corner of Lake Antoine Road and US-2 intersection. Use existing driveway on north side of property connecting to Lake Antoine Road for ingress and egress onto US-2. Also consolidate dual u-shaped drive on property along US-2 to the north into a single drive furthest from the intersection. MDOT should consider purchase as clear vision corner.

72) Close continuous opening on the northeast corner of Lake Antoine Road and US-2 intersection. Use alley for ingress and egress onto US-2. Properly define all driveway openings. MDOT should consider purchase as clear vision corner.

73) Close continuous opening on the southeast corner of Lake Antoine Road and US-2 intersection. Use alley for ingress and egress onto US-2. Properly define all driveways. MDOT should consider purchase as clear vision corner.
74) If site is developed, consider extending Brule Street parallel to US-2.

75) Once property is developed, align driveways with existing driveways on the south side of US-2 and delete temporary driveways.

76) Lock-in driveways to one per parcel (on especially the north side of the road) from east of Lake Avenue to Norway city limits and require future splits to share a common driveway. Where feasible, use rear service roads to access property when these lands develop.

77) Align new Breitung Township park driveway with existing drive on the south side of US-2.

78) Consolidate two driveways into one, using the western-most driveway to align with road to the south.

79) Close western-most driveway so there is only one.

_map 4-4_

80) Consolidate two driveways into one on each of these u-shaped drives. Use eastern-most driveway for ingress and egress onto US-2 for the property on the south side and the western-most driveway for the property on the north side. Be sure drives align when done.

81) Consolidate from three driveways to one driveway, those driveways 600’ and 700’ east of Upper Pine Creek Road and use existing frontage road for access to US-2.

82) Lock-in driveways to one per parcel on both sides of US-2 from Murray Road east to City of Norway.

83) Close openings on the southeast corner of C Street and US-2 intersection. Properly design driveway access onto US-2 using the eastern most drive.

84) Align driveway (or future street) on south side of US-2 with Belgium Town Road to eliminate existing offset.

85) Connect existing private road to Belgium Town Road as a public street.

86) Consolidate two driveways into one or eliminate both and connect parking lots if similar uses. Use the eastern-most driveway and side street driveway for ingress and egress on the eastern property.

87) Realign West 9th Street, north of US-2 and create a T-Intersection.

88) Consolidate driveways to doctor’s office into a single drive.

89) Consolidate three driveways into two and narrow their existing width.
90) Close continuous opening at the parking lot located southwest of Stephenson Street and US-2 intersection. Construct one driveway for ingress and egress to US-2.

91) Allow new access from side street or alley, not from US-2 on almost all properties from Stephenson Street east through City of Norway.

92) Better define two points of access into gas station located on the southwest corner of Brown Street and US-2. Also the sign at Citgo blocks left-turning traffic. Keep alley open.

93) Add a traffic signal when warrants are met at US-2 and US-8/Brown Street where the intersection is frequently congested from special events.

94) Improve line-of-sight at northwest corner of Main Street and US-2. This may require building modifications on the first floor. Improve line of sight on southwest and northeast corners as well.


96) Close continuous opening located on the northeast corner of Oak Street and US-2 intersection. Use existing driveway connecting to Oak Street for access to US-2.

97) Provide buffer strip between parking lot and US-2 to increase sight distance of existing driveway and keep cars out of the right-of-way.


99) Square up Railroad Avenue at US-2 intersection to reduce sight problems caused by the current acute and obtuse angles.

100) Realign Rochon Lane to intersect with E 7th Avenue. Rochon is too close to the railroad tracks.

101) Lock-in driveways to one per parcel on north side of US-2 from Curry Road east to Belrose Street in Vulcan, and on the south side of US-2 to Brandt Street.

102) Consider right-in-only and right-out-only on 8th Avenue at Brandt Street intersection or close 8th Avenue at Brandt as it intersects too close to US-2. Also realign north Brandt Street at US-2 to form a better T-intersection.

103) Align Summit Drive/Main Street and US-2 intersection to eliminate current offset and reduce slope of Main Street at US-2 (south side).

104) Lock-in driveways south of US-2 from Brandt Road to East Main Street in Vulcan.
Map 4-5
105) Close off the driveway closest to the southwest intersection of US-2 and Main Street on the east side of Vulcan where the bear sculpture is.

106) Realign Main Street at US-2 intersection to eliminate acute and obtuse angles.

107) Consolidate three driveways into two. Use two outermost driveways for ingress and egress to US-2.

108) Consolidate two driveways into one.

109) Realign Elm Street to form a T-intersection with US-2.

110) Close all three driveways extending off of Maple Street to US-2. Use Cedar Street and Maple Street for access to US-2.

111) Lock-in driveways to one per parcel from Cedar Street intersection east to eastern border of Dickinson County on each side of US-2.

112) Realign Cherry Street and US-2 to form a T-intersection.


114) Consolidate both driveways to create only one point of ingress and egress.

115) Eliminate current offset of driveway north of US-2, to put in alignment with Ball Road.

116) Close one leg of u-shaped drive 200’ west of Jefferson Street.

117) Realign County Road 573 to form a perpendicular intersection with US-2. There is currently poor vision looking both ways on US-2 from County Road 573.

Map 4-6
118) Realign Swede Settlement Road to form a T-intersection at US-2.

119) Relocate driveway to eliminate driveway offset on both sides of US-2.

120) Consolidate both driveways to create only one point of ingress and egress.

121) Realign Unknown Road and US-2 to form a T-intersection.

122) Close driveway on western edge of property. It appears to lead nowhere and does not meet the minimum separation distance.
Photo 4-1
at H Street in Iron Mountain

Photo by Mark Wyckoff, Planning and Zoning Center, Inc., January 2005

Photo 4-2
Highest Crash Intersection: Looking North on H Street at

Photo by Mark Wyckoff, Planning and Zoning Center, Inc., January 2005
Map 4-5
Southeast Norway and Southwest Waucedah Townships

Map 4 - 5
US-2 / US -141 / M-95 Corridor
Scale= 1":1,360'
Map 4 - 5
0
0.5
Miles
July 2005

Property Lines
Lakes
Rivers
Jurisdictions
Possible Future Roads
High Crash Location
Speed Limit
Flashing Beacon
Traffic Signal

Numbered/Lettered Observation Areas and proposed new roads by Planning & Zoning Center, Inc.
Base Data Source: CUPPAD and MCGI, Dept of Information Technology
Map Prepared by Land Information Access Association
Map 4-6
Southeast Waucedah Township

Map Prepared by Land Information Access Association
M-95 from Wisconsin/Michigan State Line North through Kingsford to US-2
There were 20 issues identified along M-95. Many driveway closures are recommended, as well as utilization and preservation of existing alleys for ingress and egress to cut back on the number of access points along M-95. See Map 4-2 for these locations.

**Map 4-2**

A) Breitung Township and the City of Kingsford should prevent future driveway access from Wisconsin border to West Breen Avenue, on the north side of Carpenter Avenue. Use access from Fox Drive.

B) Preserve existing access to Carpenter Avenue on the east side between the Wisconsin border to Morin Street.

C) Close one drive on u-shaped driveway accessing M-95.

D) Close driveways on southeast corner of East Breen Avenue and M-95 intersection. Both are located within 50’ of the intersection and do not meet minimum separation distance standards. Use access from Skidmore Drive.

E) Consider closing drive at northeast corner of East Breen Avenue and Carpenter Avenue.

F) Close continuous opening at southeast corner of East Sagola Avenue and M-95 intersection. Construct shared driveway for ingress and egress on M-95.

G) Require shared access and parking lot cross-access at four lots on southeast corner of Breitung Avenue and Carpenter Avenue. When future land is developed require a frontage road for shared access to Carpenter Avenue.

H) In between West Breitung Avenue and East Boulevard on the east and west side of Carpenter Avenue, there is a lot of undeveloped land. In future site plan reviews, to ensure safety, prohibit additional drives to Carpenter Avenue if possible. Use West Breitung Avenue and East Boulevard for access or access off of current business access. A frontage road may be desirable depending on the uses being served.

I) Use old rail line ROW for new connecting streets and extend Pinehurst Street to East Boulevard.

J) Consolidate both parking lot entrances off of M-95. Use northern-most entrance and create a shared driveway with adjoining property to the south. In future site plan reviews, to ensure safety, prohibit additional drives onto M-95. Encourage a frontage road or rear service road for access.

K) Close driveway accessing M-95 and create a shared driveway with adjoining property to the south.

L) Close driveway on northeast side of Hamilton Avenue and Carpenter Avenue intersection. Use existing Hamilton Avenue driveway for ingress and egress.

M) Create right-in only and a right-out only from the west side of Carpenter Avenue in the block from Hamilton Avenue to Cass Avenue….or eliminate direct access to
Carpenter Avenue and use Hamilton Avenue and Cass Avenue for ingress and egress.

N) Put proper driveways in and if possible use Milwaukee Street for access.

O) Narrow curb openings and share access from Woodward Avenue to Detroit Avenue on the west side of Carpenter Avenue.

P) Preserve and restore existing alleys from West F Street to Woodward Avenue. Use these alleys as much as possible for ingress and egress.

Q) Use alley, West D Street, and West C Street for access to existing buildings along Carpenter Avenue and preserve intersecting alleys from West F Street to West B Street.

R) Limit access by installing curbing to define driveway at vacant lot on the east corner of West B Street and Carpenter Avenue.

S) Preserve intersecting alleys on both sides of Carpenter Avenue, from West Ludington Street to West F Street, in order to preserve access to adjacent buildings and prohibit additional access to Carpenter or intersecting streets.

Photo 4-3
M-95 Southbound in Kingsford
Parking Lot Snow is Properly Setback from the Highway

Photo by Mark Wyckoff, Planning and Zoning Center, Inc., January 2005
US-141 from Wisconsin/Michigan State Line North to US-2

There were three issues identified along US-141. Realigning an existing intersection to eliminate obtuse angles, increase line-of-sight and limiting future access by allowing only one driveway per parcel. See Map 4-3 for the location of these issues.

Map 4-3

a) Lock-in driveways to one on each parcel from river at US-141 to US-2 so that future splits must use a single common access.

b) Realign East Breitung Avenue and US-141 intersection to create a perpendicular intersection if feasible, and consider adding a center turn lane at the intersection.

c) Consolidate two driveways into one. Use existing driveway located 300’ from US-2 and US-141 intersection.

Photo 4-4

US-141 at Breitung Avenue Looking South
PROPOSED BUS, BICYCLE, PEDESTRIAN, TRANSIT AND SNOWMOBILE IMPROVEMENTS

Pedestrian Systems
Pedestrians are not well served along most of the corridor, even in the cities. Creating more pedestrian facilities along US-2/US-141/M-95 is needed; however, new pedestrian facilities must be designed so that the safety of the pedestrians is foremost. Presently, there are not many sidewalks along the corridor. And where sidewalks are available, they are often too close to the road. See Photo 4-6. There are “raised curbs” adjacent to the road in various locations along the corridor that pedestrians reportedly utilize as a sidewalk when they are not being used for snow storage. There are also many parking lots close to the road, but these are not proper sidewalks. There should be sidewalks on both sides of the road in urbanized parts of the corridor. Pedestrian crossings should be clearly marked at major intersections and crossing signals should be provided at every signalized intersection. Pedestrians should be clearly guided to the safest crossing locations. See Photo 4-7.

Pedestrian overpasses, or tunnels are options that protect the pedestrian from having to cross the highway at grade. See Photo 4-8. These are preferred alternatives where traffic speed is high, and/or traffic flow or mix issues make it difficult to safely site a crosswalk at grade; however, they are expensive. Sidewalk connections are also needed for any new overpasses or tunnels across US-2/US-141/M-95.
Photo 4-6
Sidewalk too Close to Street

Photo by Thyra Karlstrom, CUPPAD, 2004

Photo 4-7
Raised Curbs Instead of Sidewalks

Photo by Thyra Karlstrom, CUPPAD, 2004
Breitung Township, City’s of Iron Mountain, Kingsford, and Norway
Iron Mountain, Kingsford, Norway, and Breitung Township should have the most extensive pedestrian systems and investment in them along the corridor, because they have the majority of the population and the land uses with the most desired pedestrian destinations along the corridor. While historically there has been a significant lack of accommodation for pedestrians along US-2/US-141/M-95, in both Iron Mountain and Norway there has been a recent effort to implement traffic calming on adjoining streets and more pedestrian orientation in local planning and street design.

In downtown Iron Mountain, Kingsford, and Norway there are pedestrian cross walks at a few major intersections. It is recommended that these cross walks receive new paint striping and where appropriate at unsignalized intersections, add signs warning drivers of pedestrians crossing the streets. Each city and Breitung Township should also consider a plan that links pedestrian, bike, and transit accessibility improvements for the US-2/US-141/M-95 corridor. Landscaping should also be incorporated into any new sidewalk designs.

Waucedah and Norway Townships
Predominately rural, Waucedah and Norway Townships have no pedestrian crosswalks due to the low population density and limited development. However, where pedestrian crossings take place (as in Vulcan and Loretto) there should be warning signs and clear pavement markings.

Recreation Trails
There are proposed multi-use pathways and walking/bike trails in Iron Mountain and Norway that cross and/or parallel US-2/US-141/M-95. Map 4-7 shows the network of proposed recreational trails along the corridor. Photo 4-9 shows at least some bicyclists are on streets even when the temperature is zero degrees.
The main proposed multi-use trail in Iron Mountain begins at the southern end of the city along M-95 continuing north along US-2 through the northern city limits of Iron Mountain. There are two other proposed multi-use trails in Iron Mountain that intersect with the US-2/US-141/M-95 corridor. During construction of these multi-use trails, pedestrian tunnels should be seriously considered, for this is by far the safest type of pedestrian crossing.

The main walking/bike trail proposed around Norway closely follows along the US-2/US-141/M-95 corridor and crosses over at several locations. Again, underground pedestrian crossings should be considered when constructing these trails for maximum safety to both users and motorists.

**Snowmobile Trails**

Dickinson county snowmobile trails connect to the rest of the Upper Peninsula and northern Wisconsin. According to the Recreational Trails Map (see Map 4-7) there are four snowmobile crossings along the corridor. Snowmobiles are used in the winter for recreational trips as well as for short trips within the outlying areas.

From west to east, the first snowmobile crossing is near Lake Antoine Road in Iron Mountain. This portion of the corridor is five lanes and has a blinking traffic signal. A rubber surface has been applied across the highway to protect the asphalt at this crossing. The second crossing is on the western side of the City of Norway. This portion of the corridor is four lanes and does not have a traffic signal. Coupled with the high traffic volumes in each area, these are potentially difficult areas for snowmobilers to safely cross the highway. The third snowmobile crossing is located on the eastern edge of Norway Township, just east of the Sturgeon River Bridge. This two-lane crossing, also with a rubber surface, is along a 55-MPH zone. The final snowmobile crossing is located in the central part of Waucedah Township. This trail passes under the corridor via a culvert.

Snowmobile groups are encouraged to meet with MDOT and local government officials to identify the best solutions to these and related issues along the corridor.
Transit
Dickinson County currently has no form of local transit however, Iron Mountain is serviced by Greyhound every Monday through Saturday. Greyhound stops at US-2 and Margaret Street and travels either northbound to Calumet, eastbound to Mackinaw City, southbound to Green Bay, Wisconsin, or westbound to Duluth, Minnesota.

If a local transit system were to be established, the route must be carefully planned and flow with current traffic. Bus pull-out lanes would need to be constructed as well as sidewalks to promote ease of dropping off and picking up passengers at the curb which is more cost effective than dropping off passengers in a parking lot. Speed limits would also have to be studied to determine safe locations for bus pull-out lanes.

A local transit system would allow Dickinson County and especially the City of Iron Mountain to cater to both residents and tourists. Tourists that come into the county for recreation events would be able to navigate by visible information on services, such as a downtown kiosk. Bus shelters and signs would also assist those new to the system. Bus stop signs with schedules for the route and maps of where it goes are particularly helpful. Adding bike racks on buses would also provide an opportunity to capture riders who may wish to continue a trip on a bicycle.

Display of Goods and Signs in Right-of-Way
Many business establishments along the corridor display signs, goods, products or vehicles for sale inside the right-of-way of US-2/US-141/M-95. This is an infringement on the public right-of-way and often impedes clear vision at driveways and intersections. Local zoning officials and law enforcement officials should work with MDOT to prohibit such infringement of the right-of-way and then routinely enforce all applicable laws (e.g., Michigan Vehicle Code 257.676). See Photo 4-10 for an example.

Photo 4-10
Display of Sign in Right-of-Way

Photo by Thyra Karlstrom, CUPPAD, 2004
Chapter Five
COORDINATING LOCAL PLANNING AND ZONING STANDARDS

INTRODUCTION

This Chapter examines the existing land use, existing zoning, and future land use for land in jurisdictions along the US-2/US-141/M-95 corridor. The land use and zoning are also compared on the border areas between jurisdictions to determine if planned and existing uses are compatible. The land use and transportation relationship is examined through analysis of the usual character of planned uses and how they relate to the preservation of the road function.

Description of Zoning Elements to Examine

This Chapter also examines specific elements from each of the zoning ordinances for jurisdictions along the US-2/US-141/M-95 corridor with relation to roadway function, including lot size, setbacks, sign regulation, landscaping, lighting, existing access management standards and other standards that affect the function and aesthetic of the US-2/US-141/M-95 corridor.

COMPARISON OF CURRENT LAND USE, ZONING, AND FUTURE LAND USE MAPS FOR JURISDICTIONS IN US-2/US-141/M-95 STUDY AREA

Three sets of maps were examined for the analysis in this chapter.

1. Current Land Use: Maps 5-1 through 5-6 depict existing land use along the corridor. The data from these maps was gathered and updated by staff at the Central Upper Peninsula Planning and Development Region (CUPPAD). Staff began with the 1978 land use/cover maps prepared from analysis of air photos taken in 1978 and retained as a part of the State of Michigan Resource Inventory System, (a computerized data bank). This data was then updated by CUPPAD based on air photo interpretation of photos taken in 2004. The resulting data was mapped by LIAA in the form presented on Maps 5-1 through 5-6. There are eight categories depicted on the maps: agriculture (light green); forested (dark green); commercial, service, institutional (light pink); industrial (purple); residential (yellow); other urban (cream); upland field (teal); and wetlands (brown).

2. Composite Zoning: Maps 5-7 through 5-12 depict existing zoning for each of the six jurisdictions along the corridor. In order to make the maps comparable, zoning districts have been simplified into six categories: Commercial (red), industrial (purple), residential (light yellow), rural residential (yellow), resource production such as agriculture, forestry or mining (green), and “other” which includes all other zoning districts (like institutional, or governmental) not covered elsewhere (light green).

3. Future Land Use: Only the Cities of Iron Mountain, Kingsford, and Norway have adopted Future Land Use Maps. They are presented as Maps 5-13, 5-14, and 5-15 respectively.
Planning Efforts Along the Corridor
The jurisdictions with the most recent adopted or updated Comprehensive Plans are the City of Iron Mountain (2005) and the City of Norway (2004), followed by City of Kingsford (2001), Dickinson County (1999), Breitung Township (1998), Waucedah Township (1995), and Norway Township (1993). Since statutory amendments in 2001 all plans older than five years should be reviewed and updated if necessary.

A Comprehensive Plan should include goals, objectives and policies, as well as a Future Land Use Map, which illustrates how the community vision will be carried out. It should show the location for each category of future land use twenty years into the future. The Future Land Use Map should guide rezoning changes and infrastructure decisions in the future. The Cities of Iron Mountain, Kingsford, and Norway have future land use maps in their plans. None of the three townships, nor the county, have future land use maps within their comprehensive plans.

Comparison of the Current Land Use Maps, Composite Zoning Map, and Future Land Use Maps
Current land use along the US-2/US-141/M-95 corridor is illustrated on Maps 5-1 through 5-6 and then compared to the Composite Zoning Maps, 5-7 through 5-12. Significant differences between the two are identified and discussed below by jurisdiction. These maps are then compared to the Future Land Use Maps, 5-13 through 5-15, for the three cities that have them. This comparison provides a context for the present planned relationship of land use to the highways examined in this study. Following are observations that result from comparing all of these maps.

Existing land use along the corridor is a complex mix of uses, with commercial, residential and industrial uses the predominant uses in the cities and forested or agricultural the predominant uses in the undeveloped areas and for most land in the townships. In contrast, a lot of the undeveloped land is zoned for commercial or residential uses and some industrial use. If all the undeveloped land is developed as zoned, there will be substantially more traffic on the corridor unless new parallel roads are also developed, and there will be considerably more crashes caused by turning movements at new driveways, unless there is a coordinated effort to manage access using uniform access management regulations.

City of Iron Mountain (Maps 5-1 & 5-2, 5-7 & 5-8, and 5-13)
- There are many segments along the corridor in Iron Mountain that are zoned commercial but are currently in residential use. These areas are either directly on the US-2/US-141/M-95 corridor or directly behind existing commercial zones. The Future Land Use Map identifies one area, US-2 west to M-95 (Carpenter Ave) down to H Street, to be infilled with commercial development and phase out intermingled residential areas. If all this land is converted to commercial use, there will eventually be much more traffic on US-2 and M-95 unless an efficient transit program is developed and widely used.
- The eastern portion of the corridor in Iron Mountain, on the south side of US-2/M-95 from Campbell Street east, is identified in the Future Land Use Plan for infill with commercial and light industrial. Current land use is a mixture of residential, vacant land, industrial, and commercial uses. The residential areas and a portion of the vacant land would need to be rezoned in order for this to happen.
There is one large area (north of the Railroad and west of East Grand Boulevard) in Iron Mountain that is zoned for industrial use but is currently undeveloped. This area is adjacent to residential neighborhoods and commercial areas. It will need to be carefully developed to prevent incompatibility. Access from a new road on the abandoned railroad right-of-way would greatly reduce negative impacts on US-2/US-141/M-95.

City of Kingsford (Maps 5-2, 5-8, and 5-14)
- An area adjacent to the south side of Hamilton Avenue west of Carpenter Avenue is zoned for residential use but is lightly used for commercial. If this use is converted then it could increase traffic at the Hamilton Avenue and US-2/US-141/M-95 intersection.
- An area east of Carpenter Avenue, between East Boulevard and West Breitung Avenue, is zoned commercial but is currently undeveloped. Considerable new traffic could come from development of this area.
- A large area of undeveloped land on the east side of south M-95 is planned for residential development. If no new driveways are permitted (only subdivision streets) the carrying capacity and safety of the road will be preserved.
- The major difference between the Current Land Use Map and the Future Land Use Map is that the Future Land Use Map identifies approximately 130 acres of existing forested and upland field area (located along the Menominee River) to become a future growth area with both residential and commercial uses. This is west of the M-95 corridor and should not have a negative impact on the corridor.

City of Norway (Maps 5-4, 5-10, and 5-15)
- Much of the western portion of Norway is zoned commercial but is currently undeveloped and residential.
- There is an area zoned commercial, located on the southern side of the corridor, around the C Street intersection. This area is currently wetlands and contains some residential.
- East of the railroad there is an area of land that is zoned for commercial use but the current land use is largely undeveloped.
- There are no significant differences between the Current Land Use Map and the Future Land Use Map.

Breitung Township (Maps 5-1, 5-2, 5-3, 5-4, 5-7, 5-8, 5-9, and 5-10)
- Heading south on US-2/M-95, just before entering Iron Mountain, there is a large area of land on the east of the corridor that is zoned for commercial use but is currently forested or other urban uses.
- East of the US-2/US-141 intersection, there is a drastic difference between what the land is zoned for and what the current land use is. A majority of the land is zoned commercial, however, most of this land is currently forested with a few areas of upland fields, residential, and other urban uses. If all this land develops commercially, there will be considerably more traffic on US-2/US-141 and driveway access will need to be rigorously restricted or many new crashes could result.
- There is no Future Land Use Map for this Township.
**Norway Township (Maps 5-4, 5-5, 5-10, and 5-11)**
- East of the City of Norway in Norway Township there are a few large parcels of land that are currently forested. However, the zoning map identifies these areas as being zoned commercial. Locking-in access rights should be a high priority to prevent creation of many narrow frontage lots on the corridor.
- There is a considerable amount of land zoned residential east of Vulcan that is currently forested. Again locking-in access will be a crucial priority.
- There is no Future Land Use Map for this Township.

**Waucedah Township (Maps 5-5, 5-6, 5-11, and 5-12)**
- A majority of the land along the US-2/US-141/M-95 corridor is zoned for residential use, however this land is presently almost all forested. Locking-in access is critical, as is carefully planning future subdivision design in this area.
- An area around Waucedah is zoned commercial but is currently forested, residential, upland fields, or other urban uses.
- There is no Future Land Use Map for this Township.

**Compatibility of Zoning Ordinance**
The Zoning Maps of the six jurisdictions were reviewed for compatibility at the border areas between jurisdictions along US-2/US-141/M-95. Zoning is reviewed at the border to identify any “neighboring” jurisdiction conflicts that can arise when one jurisdiction zones for a more intensive use or conflicting use at a jurisdiction border. Overall, the zoning at borders along the corridor is generally compatible. Generally when one jurisdiction zones residential, the neighboring jurisdiction has zoned residential as well, and the same can be said for commercial. However:

- Breitung Township, Norway Township, Waucedah Township, the cities of Iron Mountain, Norway, and Kingsford all have extensive existing commercial districts along US-2/US-141/M-95. Expansion of “strip” commercial development along the corridor will negatively impact traffic safety and the traffic flow along the corridor unless access is severely restricted and parallel access roads are also built.
- There are a few areas along borders that may not have compatible borders. In most cases these are commercial areas abutting next to residential areas. Buffering between these properties should be strictly required as properties are developed or changed, to reduce noise, light, and other nuisance impacts.

**Density and Frontage**
The density of future development and lot widths are particularly important because if numerous lots are allowed on the US-2/US-141/M-95 corridor, more driveways are required to serve those lots. Smaller lot sizes along the corridor can be problematic if all of the lots have separate driveways, because the driveways will be too close to one another for safe access. MDOT can not restrict this, only each jurisdiction can. Typically 350-450 feet are needed between driveways to achieve the proper driveway spacing on a 45-55 MPH road. The minimum lot width standards in the Zoning Ordinance should be enough (at least 300-400 feet) to accommodate these driveway distance separations, or shared driveways need to be required. Refer to Table 5-1 for current zoning lot restrictions in each US-2/US-141/M-95 corridor study area jurisdiction. Other relevant observations follow:
• Densities vary greatly from jurisdiction to jurisdiction and within each jurisdiction. Minimum lot sizes range from 5,000 square feet to 40 acres.
• Minimum lot widths along the corridor range from 50’ to 660’.
• The City of Iron Mountain allows the smallest residential, commercial and industrial lots.
• Norway has no minimum lot size requirements for industrial lots and the City of Iron Mountain has no minimum lot size for general business. This is a particularly bad practice along state highways.
• Front yard setbacks on the corridor for all districts are 20-40’. Typically they should be 50’-75’ along 55 MPH segments.
• Rear yards allowed along the corridor are 10’-75’.
• Almost all jurisdictions require site plan review for commercial and industrial construction and some require a site plan review for any type of construction. See Table 5-1. Site plan review is essential for successful implementation of access management regulations.
Map 5-3
Southeast Breitung Township

Property Lines
Current Land Use
- Agricultural
- Commercial, Service, Institutional
- Residential
- Upland Field
- Urban
- Forested
- Industrial
- Wetland
- Water
- Railroad
- Lakes
- Rivers
- Jurisdictions

Scale: 1:1,360'

Base Data Source: CUPPAD, CDPMC, Dept of Information Technology
Map Prepared by Land Information Access Association

US-2/US-141/M-95 Corridor
July 2005

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September 30, 2005
Map 5-5
Southeast Norway and Southwest Waucedah Townships

Property Lines
Lakes
Rivers
National Park Boundaries
Property Boundaries
Railroad
Jurisdictions

Current Land Use
Agricultural
Commercial, Service, Institutional
Forested
Industrial
Other Urban
Residential
Upland Field
Wetland

Base Data Source: CUPPAD and MCGI, Dept of Information Technology
Map Prepared by Land Information Access Association

Page 5-10
September 30, 2005
Map 5-10
Norway City and Southwest Norway Township

Base Data Source: CEPW/ED and MCGI, Dept of Information Technology
Map Prepared by Land Information Access Association

US-2 / US-141 / M-95 Corridor
Scale = 1":1,360'
July 2005

Property Lines
Lakes
Homes
Highways
Composite Zoning
Commercial
Industrial
Residential
Resource Production
Rural Residential

Commercial - Overlay

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Map 5-13
Iron Mountain Future Land Use Map

Source: City of Iron Mountain Comprehensive Plan, 2004
Map 5-14
Kingsford Future Land Use Map

Source: Kingsford Comprehensive Plan Update, 2001
Map 5-15
Norway Future Land Use Map

Source: Norway Comprehensive Plan, 2001
## Table 5-1
### Zoning Comparisons

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Zoning Districts</th>
<th>Min. Lot Size</th>
<th>Min. Lot Width</th>
<th>Front Setback</th>
<th>Rear Yard</th>
<th>Site Plan Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Iron Mountain</td>
<td>R-1 Single Family Residential</td>
<td>9,000 SF</td>
<td>80’</td>
<td>30’, or equal to the established setback line of existing homes on that same side of the street within 100’</td>
<td>30’</td>
<td>Generally No</td>
</tr>
<tr>
<td></td>
<td>R-2 Moderate Density Residential</td>
<td>6,000 SF Single Family Detached</td>
<td>50’ Single Family Detached</td>
<td>25’, or equal to the established setback line of existing homes on that same side of the street within 100’</td>
<td>30’ Single Family 40’ Two Family</td>
<td>Generally No</td>
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<tr>
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<td>R-3 Multiple Family Residential</td>
<td>6,000 SF Single Family Attached</td>
<td>50’ Single Family Detached</td>
<td>25’ for one-two story bldgs. with an additional one foot setback required for each additional one foot the bldg. exceeds 40’</td>
<td>40’ with an additional foot for each additional foot the height of the bldg. over 40’</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>O-S Office Service</td>
<td>5,000 SF</td>
<td>50’</td>
<td>30’</td>
<td>10’ or 20’ when adjacent to a residential district</td>
<td>Yes</td>
</tr>
<tr>
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<td>B-1 Neighborhood Business</td>
<td>5,000 SF</td>
<td>50’</td>
<td>20’</td>
<td>10’</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>B-2 General Business</td>
<td>None</td>
<td>None</td>
<td>20’ or equal to the minimum distance established by existing buildings within 200’</td>
<td>10’ or 20’ when adjacent to a residential district</td>
<td>Yes</td>
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<td>I-1 Light Industrial</td>
<td>12,000 SF</td>
<td>100’</td>
<td>25’</td>
<td>10’ or 25’ when adjacent to a residential district</td>
<td>Yes</td>
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<td>I-2 General Industrial</td>
<td>15,000 SF</td>
<td>100’</td>
<td>25’</td>
<td>10’ or 50’ when adjacent to a residential district</td>
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<td>Municipality</td>
<td>Zoning Districts</td>
<td>Min. Lot Size</td>
<td>Min. Lot Width</td>
<td>Front Setback</td>
<td>Rear Yard</td>
<td>Site Plan Req’d</td>
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<tr>
<td>O-R Open Space Conservation</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>Yes</td>
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<td>City of Kingsford</td>
<td>R-1A and R-1B One Family Residential</td>
<td>9,000 SF to 6,000 SF</td>
<td>80’ 50’</td>
<td>25’ 25’</td>
<td>35’ 35’</td>
<td>No, except for related nonresidential uses</td>
</tr>
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<td>R-2 Two Family Residential</td>
<td>6,000 SF</td>
<td>25’</td>
<td>25’</td>
<td>35’</td>
<td>No, except for related nonresidential uses</td>
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<tr>
<td>City of Kingsford</td>
<td>RM-1 Multiple Family Residential</td>
<td>5,000 SF</td>
<td>None</td>
<td>25’</td>
<td>35’</td>
<td>Yes, where abutting a residential district, main thoroughfare or collector street</td>
</tr>
<tr>
<td>City of Kingsford</td>
<td>O-S Office Service</td>
<td>None</td>
<td>None</td>
<td>20’</td>
<td>20’</td>
<td>Yes, where abutting a residential district, main thoroughfare or collector street</td>
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<td>City of Kingsford</td>
<td>B-1 Community Business</td>
<td>None</td>
<td>None</td>
<td>60’</td>
<td>10’</td>
<td>Yes, where abutting a residential district, main thoroughfare or collector street</td>
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<td>City of Kingsford</td>
<td>B-2 General Business</td>
<td>None</td>
<td>None</td>
<td>30’</td>
<td>None</td>
<td>Yes, where abutting a residential district, main thoroughfare or collector street</td>
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<tr>
<td>City of Kingsford</td>
<td>I-1 Industrial</td>
<td>None</td>
<td>None</td>
<td>60’</td>
<td>None</td>
<td>Yes, where abutting a residential district, main thoroughfare or collector street</td>
</tr>
<tr>
<td>City of Kingsford</td>
<td>I-2 General Industrial</td>
<td>None</td>
<td>None</td>
<td>30’</td>
<td>None</td>
<td>Yes</td>
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<tr>
<td>City of Kingsford</td>
<td>RSV Reserve</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>Yes</td>
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<tr>
<td>City of Norway</td>
<td>R-1 Residential One District</td>
<td>6,000 SF</td>
<td>50’</td>
<td>25’</td>
<td>20’</td>
<td>No</td>
</tr>
<tr>
<td>City of Norway</td>
<td>R-2 Residential Two District</td>
<td>15,000 SF</td>
<td>100’</td>
<td>25’</td>
<td>35’</td>
<td>No</td>
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<td>Municipality</td>
<td>Zoning Districts</td>
<td>Min. Lot Size</td>
<td>Min. Lot Width</td>
<td>Front Setback</td>
<td>Rear Yard</td>
<td>Site Plan Req’d</td>
</tr>
<tr>
<td>-------------------------</td>
<td>--------------------------</td>
<td>---------------</td>
<td>----------------</td>
<td>---------------</td>
<td>-----------</td>
<td>----------------</td>
</tr>
<tr>
<td>RR Rural Residential</td>
<td></td>
<td>5 Acres</td>
<td>300’</td>
<td>50’</td>
<td>50’</td>
<td>No</td>
</tr>
<tr>
<td>RP Resource Production District</td>
<td></td>
<td>10 Acres</td>
<td>300’</td>
<td>50’</td>
<td>50’</td>
<td>No</td>
</tr>
<tr>
<td>B-1 Essential Business District</td>
<td></td>
<td>6,000 SF</td>
<td>50’</td>
<td>10’</td>
<td>20’</td>
<td>Yes</td>
</tr>
<tr>
<td>B-2 Central Business District</td>
<td></td>
<td>6,000 SF</td>
<td>50’</td>
<td>10’</td>
<td>20’</td>
<td>Yes</td>
</tr>
<tr>
<td>B-3 General Business District</td>
<td></td>
<td>10,000 SF</td>
<td>100’</td>
<td>50’ / 30’ L</td>
<td>20’</td>
<td>Yes</td>
</tr>
<tr>
<td>I-1 Industrial One District</td>
<td></td>
<td>20,000 SF</td>
<td>150’</td>
<td>50’ / 30’ L</td>
<td>30’</td>
<td>Yes</td>
</tr>
<tr>
<td>I-2 Industrial Two District</td>
<td></td>
<td>1 Acre</td>
<td>150’</td>
<td>50’ / 30’ L</td>
<td>30’</td>
<td>Yes</td>
</tr>
<tr>
<td>P Park District</td>
<td></td>
<td>None</td>
<td>None</td>
<td>25’</td>
<td>25’</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Breitung Township</strong></td>
<td><strong>R-1 Residential</strong></td>
<td>20,000 SF</td>
<td>100’</td>
<td>30’</td>
<td>10’ B</td>
<td>Yes</td>
</tr>
<tr>
<td>RR-1 Rural Residential One</td>
<td></td>
<td>1 Acre</td>
<td>150’</td>
<td>40’</td>
<td>30’ C</td>
<td>Yes</td>
</tr>
<tr>
<td>RR-2 Rural Residential Two</td>
<td></td>
<td>5 Acres</td>
<td>300’</td>
<td>40’</td>
<td>30’ C</td>
<td>Yes</td>
</tr>
<tr>
<td>LS/R Lake Shore and River</td>
<td></td>
<td>30,000 SF</td>
<td>150’</td>
<td>40’</td>
<td>75’ D</td>
<td>Yes</td>
</tr>
<tr>
<td>SP Scenic Preservation</td>
<td></td>
<td>10 Acres</td>
<td>300’</td>
<td>40’</td>
<td>35’ E</td>
<td>Yes</td>
</tr>
<tr>
<td>RP Resource Production</td>
<td></td>
<td>10 Acres</td>
<td>300’</td>
<td>40’</td>
<td>30’</td>
<td>Yes</td>
</tr>
<tr>
<td>C-1 General Retail</td>
<td></td>
<td>20,000 SF</td>
<td>100’</td>
<td>30’</td>
<td>30’</td>
<td>Yes</td>
</tr>
<tr>
<td>C-2 Commercial/Light Industrial</td>
<td></td>
<td>20,000 SF</td>
<td>100’</td>
<td>30’</td>
<td>30’</td>
<td>Yes</td>
</tr>
<tr>
<td>I Industrial</td>
<td></td>
<td>1 Acre</td>
<td>150’</td>
<td>40’</td>
<td>20’</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Norway Township</strong></td>
<td><strong>R-1 Residential One</strong></td>
<td>20,000 SF</td>
<td>100’</td>
<td>30’</td>
<td>35’</td>
<td>No</td>
</tr>
<tr>
<td>Municipality</td>
<td>Zoning Districts</td>
<td>Min. Lot Size</td>
<td>Min. Lot Width</td>
<td>Front Setback</td>
<td>Rear Yard</td>
<td>Site Plan Req’d</td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------------------------</td>
<td>---------------</td>
<td>----------------</td>
<td>---------------</td>
<td>-----------</td>
<td>-----------------</td>
</tr>
<tr>
<td>R-2 Residential</td>
<td>Two</td>
<td>20,000 SF</td>
<td>100’</td>
<td>30’</td>
<td>25’</td>
<td>No</td>
</tr>
<tr>
<td>RR Rural</td>
<td>Residential</td>
<td>1 Acre</td>
<td>100’</td>
<td>30’</td>
<td>30’</td>
<td>No</td>
</tr>
<tr>
<td>AP Agricultural</td>
<td>Production</td>
<td>1 Acre</td>
<td>100’</td>
<td>30’</td>
<td>30’</td>
<td>No</td>
</tr>
<tr>
<td>TP Timber</td>
<td>Production</td>
<td>5 Acres</td>
<td>300’</td>
<td>30’</td>
<td>30’</td>
<td>No</td>
</tr>
<tr>
<td>RP Resource</td>
<td>Production</td>
<td>5 Acres</td>
<td>300’</td>
<td>30’</td>
<td>30’</td>
<td>No</td>
</tr>
<tr>
<td>PL Public Land</td>
<td></td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>Yes</td>
</tr>
<tr>
<td>TD Town District</td>
<td></td>
<td>20,000 SF</td>
<td>100’</td>
<td>30’</td>
<td>20’</td>
<td>Yes</td>
</tr>
<tr>
<td>I Industrial</td>
<td></td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Waucedah Township**

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Zoning Districts</th>
<th>Min. Lot Size</th>
<th>Min. Lot Width</th>
<th>Front Setback</th>
<th>Rear Yard</th>
<th>Site Plan Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>R Residential</td>
<td>Two</td>
<td>2 Acres</td>
<td>200’</td>
<td>30’</td>
<td>30’</td>
<td>No</td>
</tr>
<tr>
<td>RR-5 Rural</td>
<td>Residential</td>
<td>5 Acres</td>
<td>300’</td>
<td>30’</td>
<td>30’</td>
<td>No</td>
</tr>
<tr>
<td>LS/R Lake</td>
<td>Shore/River</td>
<td>20,000 SF</td>
<td>100’</td>
<td>30’</td>
<td>30’</td>
<td>No</td>
</tr>
<tr>
<td>SR Scenic</td>
<td>Resource</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>No</td>
</tr>
<tr>
<td>AP-20 Agricultural</td>
<td>Production</td>
<td>20 Acres</td>
<td>470’</td>
<td>30’</td>
<td>30’</td>
<td>No</td>
</tr>
<tr>
<td>RP-10 Resource</td>
<td>Production Ten</td>
<td>10 Acres</td>
<td>300’</td>
<td>30’</td>
<td>30’</td>
<td>No</td>
</tr>
<tr>
<td>RP-20 Resource</td>
<td>Production Twenty</td>
<td>20 Acres</td>
<td>470’</td>
<td>30’</td>
<td>30’</td>
<td>No</td>
</tr>
<tr>
<td>TP-40 Timber</td>
<td>Production</td>
<td>40 Acres</td>
<td>660’</td>
<td>30’</td>
<td>30’</td>
<td>No</td>
</tr>
<tr>
<td>TD Town</td>
<td>Development</td>
<td>20,000 SF</td>
<td>100’</td>
<td>30’</td>
<td>35’</td>
<td>Yes</td>
</tr>
</tbody>
</table>

NOTES:
A. Site plan review approval is required for these uses requiring special use permit review, as specified and for all land uses, except single-family detached dwellings, two-family dwellings and nonresidential uses requiring less than five parking spaces.
B. An accessory building or structure may be located 6 feet from rear lot line.
C. An accessory building or structure may be located 20 feet from a rear lot line
D. Customary accessory buildings or structures may be located 30' from a rear (waterside) lot line. Where the property abuts a water course or a body of water, the waterside is the rear lot line.
E. Customary accessory buildings or structures may be located 30' from a rear (waterside) lot line. Where the property abuts a water course or a body of water, the waterside is the rear lot line. Where property abuts a water course or body of water, the rear setback shall be 250'.
F. No site plan is required for single-family dwellings, two-family dwellings, mobile homes on individual lots, and agricultural buildings.
G. The minimum lot size may be reduced to one acre by application for and issuance of a Conditional Use Permit meeting the standards set out in Sec. 312 (D) and Sec. 704. The minimum lot width shall be 150 feet.
H. The determination of lot size when adjoining a road shall be made as if the road was a part of the lot in question. For example, a 20 acre parcel fronting on a road will lose approximately one-half acre in the road right-of-way. This will then take the parcel size 19.5 acres, however, it will still conform to the 20 acre minimum lot size requirement.
I. The minimum landscaped open space ratio shall be twenty-five (25) percent in the Town Development District.
J. An accessory building or structure may be located twenty (20) feet from a rear lot line.
K. If more than 50% of the structures in the same block on the same side of the street are at different front setback line, then other structures may be built at the average setback line of the majority of structures on the block.
L. Where parking is in the front, the front setback shall be a minimum of 50 feet; where the parking is in the rear or side yard, the front setback shall be a minimum of 30 feet.
Sign Requirements
Sign requirements were also examined in each jurisdiction. See Table 5-2 for the comparison information between jurisdictions. Particularly important to roadway function is the setback of signs out of the right-of-way and the consolidation of signs to minimize driver confusion. Other observations include:
- There are setback requirements for signs in most of the jurisdictions. 10-50’ setback from ROW line is the typical range.
- Some jurisdictions have regulations allowing larger signs if setback further from the road.
- Some jurisdictions have different sign regulations for the different districts.

Parking Lot and Driveway Requirements
Parking lot requirements were examined in each jurisdiction for their relevance to access management. See Table 5-2 for the comparison information between jurisdictions. No jurisdictions regulate the allowable distance to another driveway or to an intersecting road. However, restrictions on driveways will be covered within the recommended local access management ordinances.

Landscaping Requirements
Landscaping requirements were examined in each jurisdiction for relevance to access management. See Table 5-3 for the comparison information between jurisdictions. Landscaping was considered as a part of the zoning analysis for improved corridor aesthetics.
- Over half of the communities along the corridor have landscaping requirements either within specific zoning districts, or as a separate element within their zoning ordinance.
- Parking lot landscaping is addressed in several zoning ordinances. See Table 5-3 for specific information from each jurisdiction’s zoning ordinance.

Lighting Requirements
Lighting requirements were examined in each jurisdiction for relevance to access management. See Table 5-3 for the comparison information between jurisdictions. Lighting was considered as a part of the analysis for improved safety and aesthetics.
- Lighting was not a provision within many of the ordinances.
- Sign lighting was regulated in half of the jurisdictions.

Access Management Requirements
The US-2/US-141/M-95 Corridor Advisory Committee agreed to adapt the MDOT sample Access Management Ordinances to fit local conditions along the corridor study area in 2004. The Committee drew from three “Sample Access Management Ordinances” that were developed within MDOT’s, Reducing Traffic Congestion and Improving Traffic Safety in Michigan Communities: The Access Management Guidebook for each jurisdiction. All of the jurisdictions along US-2/US-141/M-95 have committed to adding access management provisions via a new Highway Overlay Zone in their zoning ordinance. This process of ordinance adoption is expected to be complete during the winter of 2006. See Table 5-3 for the current status of access management regulations in the study communities.

Some of the jurisdictions along the corridor are considering adopting access management regulations in a manner that makes them applicable to all arterials in the
community, not just US-2/US-141/M-95. This is common in other parts of the state as the safety benefits of access management regulations certainly deserve to be achieved along county primary roads and major city streets as much as they do along a state highway. If this is done, the sample access management ordinance in Appendix B needs to be modified to accommodate the additional arterials.
## Table 5-2
Sign and Parking Requirements

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Minimum Sign Setback</th>
<th>How Measuring Setback?</th>
<th>Temporary Signs</th>
<th>Comments on Signs</th>
<th>Parking Lot Setback</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Iron Mountain</td>
<td>Prohibited in ROW and Public Easements (Residential District)</td>
<td>From ROW</td>
<td>Yes</td>
<td>Restrictions on sign sizes vary per district</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>10’ from ROW or Front Property Line (General Business District)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>25’ (Industrial District)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| City of Kingsford    | • May not locate in, project into, or overhang the public ROW or easement without special approval.  
                       | • No freestanding signs or pylons within 100’ of a residential district and no billboards within 200’ of a residential district.  
                       | • No sign exceeding 2’ in height shall be permitted within the triangular area formed at the intersection of any street ROW lines by a straight line drawn between ROW at a distance along each line 25’ from their point of intersection | From ROW               | Yes, in front yard not ROW                                                       | • Not within front or side yard setback unless otherwise provided for in ordinance  
<pre><code>                   |                                                                                  |                        |                 | • Restriction vary per district                                                    |                     |
</code></pre>
<p>|                      |                                                                                  |                        |                 | • Larger signs may be permitted with deeper setbacks                              |                     |
|                      |                                                                                  |                        |                 |                                                                                  |                     |
| City of Norway       | A minimum of 5’ when the road right-of-way width from the centerline of the road to the property is less than 50’, or located at the lot line when the road right-of-way width from the centerline of the road to the property is greater than 50’ | From ROW               | Yes             |                                                                                  | No                  |</p>
<table>
<thead>
<tr>
<th>Municipality</th>
<th>Minimum Sign Setback</th>
<th>How Measuring Setback?</th>
<th>Temporary Signs</th>
<th>Comments on Signs</th>
<th>Parking Lot Setback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breitung Township</td>
<td>Not in the ROW and not to interfere with traffic (Residential District)</td>
<td>From ROW</td>
<td>Yes</td>
<td>Not applicable</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>5’ when ROW width from the centerline of the road is less than 50’ or on the lot line when the width from the centerline of the road is more that 50’ (Retail/Commercial/Light Industrial District) (40’ for Industrial District)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Norway Township</td>
<td></td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Waucedah Township</td>
<td>Not in ROW and not to interfere with traffic (Residential District)</td>
<td>From ROW</td>
<td>Yes</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>5’ when ROW width from the centerline of the road is less than 50’ or on the lot line when the width from the centerline of the road is more that 50’ (Town Development District)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Table 5-3
Access Management, Landscaping and Lighting Regulations

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Adopted Access Management Regulations?</th>
<th>Lighting</th>
<th>Landscaping</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Iron Mountain</td>
<td>No</td>
<td>For sign illumination and parking lots</td>
<td>Yes, parking lot landscaping requirements</td>
</tr>
<tr>
<td>City of Kingsford</td>
<td>No</td>
<td>For sign illumination</td>
<td>● Plant materials in greenbelts</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>● Lists prohibited species</td>
</tr>
<tr>
<td>City of Norway</td>
<td>No</td>
<td>For sign illumination</td>
<td>Yes, required planting screens (with specifications-spacing of plantings)</td>
</tr>
<tr>
<td>Breitung Township</td>
<td>No</td>
<td>For sign illumination</td>
<td>Yes, required planting screens (with specifications-spacing of plantings), parking lot landscaping requirements</td>
</tr>
<tr>
<td>Norway Township</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Waucedah Township</td>
<td>No</td>
<td>For sign illumination</td>
<td>Yes, required planting screens</td>
</tr>
</tbody>
</table>

RECOMMENDATIONS

Planning and Zoning
The jurisdictions without current Comprehensive or Master Plans should prepare or update the Plans within the next few years. Jurisdictions without any Future Land Use Map should incorporate one when next updating the Comprehensive Plan. Appendix C includes sample master plan amendment language to adopt this Plan by reference as part of the Master Plan. The US-2/US-141/M-95 Corridor Advisory Committee should review new Comprehensive Plans before adoption to assure that the US-2/US-141/M-95 corridor function is protected and preserved in a manner that is consistent with this Plan. See also the section on coordinated permit reviews beginning on page 6-4.

The primary zoning recommendation for each jurisdiction is to seriously reconsider the amount of commercial zoning directly adjacent the corridor as much more is planned than can be absorbed in the next 20 years. It is much better to plan commercial nodes rather than commercial strips as there is far less negative impact on the highway providing access and greater opportunities for efficient transit. Jurisdictions should consider that the regional commercial uses can be accommodated within existing downtowns or adjacent and behind (away from the highway) existing commercial development. Also before rezoning more land for commercial development, keep in mind that any new commercial development may pull market share from the already existing businesses within neighboring jurisdictions making existing commercial areas less viable. A lower intensity zoning like forestry or resource production is a much better classification for undeveloped land along the rural segments of US-2/US-141/M-95.

Access Management
Limit the Number of Driveways
One of the most effective ways to prevent a proliferation of new driveways is to limit the number of new access points to existing parcels before extensive land division occurs. This is most effective in suburban and rural areas before large parcels are fragmented into many smaller ones. There are several areas along US-2/US-141/M-95 that have not fully developed yet, and should take advantage of this technique. It is accomplished by adding a short provision to the zoning ordinance that effectively limits to one, all future driveways in the area identified. As smaller lots are created, common driveways, access easements, or service drives are required to provide access to any new parcels. This is referred to as “locking-in” driveways. See Figure 5-1.

Proliferation of driveways along an arterial is a major access management problem. This occurs most often in areas with many narrow lots. Thus it is important to prevent the creation of narrow lots, or to provide an alternative means of access to them. If it is inappropriate in an area to require wide lots, then narrow lots should be required to have access by means of a frontage road, rear service drive, or other forms of shared access. If there are double frontage lots, they should be permitted access only from a service drive or a local street, rather than from the arterial.
Figure 5-1
Limit the Number of Driveways by “Locking In” Driveways

Figure A: Represents an arterial highway in a semi-rural area; one which still has rural characteristics, but is experiencing development pressures. The large parcels present numerous opportunities for careless land divisions, long, narrow lots with minimal road frontage will likely be created, and each will have its own driveway. There are some commercial land uses and a few driveways onto the roadway, but they are not substantial enough to inhibit traffic movement and safety.

10 driveways for 10 lots

Figure B: This is the same arterial after typical commercial strip development. Misguided development and unregulated land divisions have led to too many long, narrow lots and “flag” lots and consequently too many driveways. Numerous driveways substantially increase the number of turning, accelerating, and decelerating cars, which serves to undermine the traffic movement function of the roadway and pose traffic safety hazards.

23 driveways for 28 lots

Figure C: This is the same strip after development with controlled land division and access. All of the original parcels were allowed one driveway each onto the roadway. All subsequently created lots obtained their access to the road from the single access points. Traffic congestion and hazards are minimized and the road retains its traffic movement function as an arterial.

10 driveways for 29 lots

The Land Division Act (PA 288 of 1967) requires that new lots not exceed a depth of four times the width, unless otherwise permitted by a local government. However, one place where deep lots are beneficial is along major arterials, because of the potential that is provided for front or rear access roads and for deep building setbacks. They also provide room for a buffer from abutting residential property. Deep lots are advantageous if the possibility exists for future road widening. Right-of-way acquisition is often impractical or very expensive if lots are shallow or buildings are located close to the roadway.

Jurisdictions along the US-2/US-141/M-95 corridor that have not adopted an Access Management Ordinance should do so based on the sample ordinance in Appendix B of this Plan. However, lot requirements along US-2/US-141/M-95 may need to be altered within the jurisdictions’ Zoning Ordinance to preserve the current and future function of the roadway. At least 330-400 feet are optimal in rural areas where roadway speeds are 55 MPH. However, current lot patterns often result in a decision to use 300 feet as the lot width.

**Lot Requirements**

Minimum lot widths along US-2/US-141/M-95 should be revised, particularly in areas that have not yet developed. Use Tables 3-1 and 4-1 in Chapters 3 and 4 to set appropriate minimum lot widths that provide enough width for appropriate distance between driveways. Lot widths can be less than 300 feet if there is shared access, connected parking lots, frontage roads and/or rear service drives, but this needs to be provided in the ordinance (the sample ordinance in Appendix B does).

Building setbacks should also be more uniform throughout the corridor. Larger setbacks provide space if future expansion of the roadway occurs. At least 50 feet from the right-of-way is needed.

**Aesthetics**

**Landscaping**

Most of the jurisdictions along the corridor already have provisions within their ordinances for landscaping. See Table 5-3. However, to give the US-2/US-141/M-95 corridor a more uniform appearance, common landscaping guidelines, could be agreed to by the US-2/US-141/M-95 Corridor Advisory Committee. The Committee could draft uniform landscaping requirements that require landscaping in parking lots and between different land uses. The guidelines would include providing the proper setback from US-2/US-141/M-95 to assure that proper sight distance for driveways and intersections is maintained.

Also included in the landscaping guidelines could be the appropriate street trees and plantings to use along the US-2/US-141/M-95 Corridor. Any plantings and trees would need to be salt tolerant species. The Committee could identify a “theme” for the species, such as a specific type of evergreen or bush. This could be planted along the entire corridor to provide a uniform landscape. Most jurisdictions currently list accepted trees within their landscaping plan; these trees include Scotch Pine, Spruce, Jack Pine, Oak, etc.

**Signs**

Several jurisdictions along US-2/US-141/M-95 have provisions for signs. See Table 5-2. Sign aesthetics are already addressed in many of these zoning provisions; however, a
more uniform approach along the corridor for private signs may, over time, enhance the visual quality of the corridor and reduce driver confusion.

Uniform aesthetic guidelines could include private sign provisions that might call for more "cluster" signs that group together several businesses signs rather than having individual signs for every business. See Figure 3-3 in Chapter 3 for an illustration of this technique. Uniform signs along the corridor could provide a much more pleasing scene for drivers.

**Lighting**
Few of the jurisdictions along the US-2/US-141/M-95 corridor have lighting provisions within their zoning ordinance. See Table 5-3. Uniform lighting options might be included as part of US-2/US-141/M-95 aesthetic guidelines. The lighting might include decorative roadway lighting to enhance the road’s visual appeal and pedestrian scale lighting to be implemented in downtown areas in conjunction with sidewalk improvements.

**Clear View Triangles**
The City of Iron Mountain has adopted “Clear View Triangles” at intersections, which restrict private signs and landscaping to 30 feet from the intersection. It creates a triangle of clear vision that helps motorists sight distance at intersections. Figure 5-2 illustrates the idea. This concept should be included in the zoning ordinances of other jurisdictions along the corridor. It is included in the sample ordinance in Appendix B.

![Figure 5-2](image_url)

INTRODUCTION

This Chapter briefly reviews the principal steps that need to be taken to implement this Plan. Actions are described first for major road improvements and second for access management activities. The most important activities in each category relate to continued coordination between MDOT and local governments along the corridor.

ROAD IMPROVEMENTS

Chapter Three sets forth the rationale for some road improvements along the US-2/US-141/M-95 corridor and Chapter Four detailed specific access management improvements to address congestion and safety issues. In a few cases, especially with regard to major intersection improvements, multiple options were presented. The next step needs to be a more refined analysis of the options and dialogue between MDOT and the affected local units of government concerning the preferred option. In most cases, the selected option will probably be funded using traditional funding sources. In other cases, special funding may need to be pursued. This is most likely with regard to the roundabout options for the north and south junctions of US-2/US-141/M-95 outside Iron Mountain, because the cost of these improvements is likely to be significantly more than the other options. These are not high priority recommendations and should be pursued as the opportunity arises, or the need increases.

The first seven objectives in Chapter Two could serve as guidelines in selecting sets of potential improvements and for choosing among options for particular improvements to make in a given year. These objectives are reproduced below:

1. Periodically identify the cause of existing or projected congestion along the highway and following examination of alternatives, select improvements that safely preserve the traffic carrying capacity of the highway.
2. When selecting from among alternative capacity improvements, give special consideration not only to cost-effectiveness, but also to uniformity in design so that driver confusion is minimized.
3. When selecting from among alternatives, give special consideration to those that help preserve the investment in existing and planned improvements to the road, such as those that incorporate access management into the design.
4. Design and implement improvement projects in a way which minimizes disruption not only to existing traffic, but also to abutting residences, businesses and other actively used lands.
5. Plan traffic capacity improvement projects to roads managed by MDOT sufficiently far ahead, and in a manner which permits MDOT, local governments and the County Road Commission, to most effectively coordinate associated infrastructure improvements on intersecting roadways and to accommodate cost-effective utility expansions or replacement.
6. Implement only traffic or intersection improvements that are consistent with this Plan.
7. Periodically update this Plan to ensure that it continues to guide coordinated land use and highway improvement decisions along the corridor.”

Once the final set of improvements are decided upon, they need to be inserted into MDOT’s Five-Year Transportation Plan, which is updated annually. There is no need, nor any realistic likelihood that all the improvements identified in this Plan will all be implemented at the same time, or even that they will all be undertaken. In most cases, improvements will need to be staged over time, probably by common geographic area in order to take advantage of some economies of scale. In some cases, projects in the same area could be staged over several years, such as improvements in the commercial mall area of Iron Mountain/Breitung Township.

By far the most important consideration as local governments work with MDOT and representatives of any other funding sources to implement the improvements in this Plan, is to maintain a united front and to be mutually supportive of improvements in various parts of the corridor. Very often, projects that might not be highly rated when proposed by a single jurisdiction are much more highly rated when part of a larger plan, and when supported by a variety of jurisdictions. To this end, cooperation among the six participating local governments and MDOT in reaching agreement on priorities and a multi-year schedule for corridor improvements will likely pay off with success for all parties.

ACCESS MANAGEMENT

Chapter Three presented common access management techniques necessary to protect the investment in existing and planned improvements to US-2/US-141/M-95. Chapter Four identified specific locations in which some access management improvements are necessary; most of these are to improve safety. Chapter Five detailed existing planning and zoning provisions of the six local governments along the corridor and the kinds of actions each could take to strengthen individual future land use plans and zoning ordinances in a manner that would assist with the implementation of this Plan. While these measures are very important, there are other important steps that will need to be taken by each of the local governments individually, and then the group of six local governments together in concert with MDOT.

Most of these steps are addressed in objectives 8-12 in Chapter Two. Together they represent effective guidelines for implementing the access management and intergovernmental coordination measures presented in this Plan. These objectives are reproduced below:

“8. Ensure that land planned and zoned for intensive economic development activities is both well suited for such use and that such use is compatible with uses on adjoining lands and the physical characteristics and capacity of the segment of the highway providing access.
9. Ensure that prior to approval of intensive new land uses along the corridor, that appropriate traffic impact studies are done and review is coordinated between MDOT, the local government in which the development is proposed, and affected units of government in adjoining jurisdictions.
10. Ensure that prior to site plan approval for any land use along the corridor, that the proposed site plan is first reviewed by the Corridor Advisory Committee so that consistent access management decisions can be made along the corridor.

11. Encourage all local units of government along the corridor to adopt and thereafter maintain (with a thorough review at least once each five years), a future land use plan, master plan or comprehensive plan of future land use that serves as the basis for future zoning and infrastructure decisions along the highway, and is carefully coordinated with similar plans in adjoining jurisdictions.

12. Encourage all local units of government along the corridor to maintain (with a thorough review at least once each five years), a zoning ordinance which appropriately manages access to the highway consistent with regulations based on MDOT's model regulations and those of adjoining jurisdictions, and is consistent with the communities future land use, master or comprehensive plan.”

More specifically, the following remedial, preventive and coordinated actions need to be taken by local governments along the US-2/US-141/M-95 corridor to successfully implement this Plan.

Remedial Measures
In the already developed parts of the corridor, there are a number of access related remedial measures that were identified in Chapter Four. Most focus on driveway consolidation, driveway closure, sharing of driveways or linking of parking lots. There are two common ways in which these measures are typically implemented. Both are opportunity driven. The first occurs as other road improvements are made. Even simple resurfacing, or rebuild projects in which no capacity improvements are made, present excellent opportunities to close unnecessary driveways and to consolidate and/or share driveways. This requires a coordinated effort between the local unit of government and MDOT to plan far enough ahead so that a representative of each entity can visit with each of the landowners with excess driveways and explain the benefits of driveway closure and reconstruction of a contemporary driveway that meets MDOT standards. If MDOT offers to pay for the removal of the driveways to be closed and to install a new driveway in the most appropriate location and up to current standards, many landowners will agree to the closure and/or consolidation. MDOT can achieve significant cost savings when such measures are coordinated with road resurfacing or reconstruction projects. Landowners often benefit by freeing space in front for parking, snow storage and/or landscaping as well. Obviously, the same effort should be made when capacity improvements are to be undertaken in an area targeted for driveway closures.

The second common opportunity arises when a landowner comes to the local government with a project which requires local site plan approval. This is the process whereby drawings and accompanying information are reviewed to ensure conformance with local zoning requirements, as well as the requirements of county, state or federal agencies. The project could be adaptive reuse of an existing building, expanding an existing building, tearing down an existing building and constructing a new one, or constructing on undeveloped land. As long as the local government has adopted access management standards, then approval of the site plan can be conditioned upon conformance with the access management standards. In situations involving adaptive reuse or expansion of an existing facility, this could provide an opportunity to consolidate or close driveways, connect parking lots, or shift primary access to a side street where one is available. In situations where a new use or structure is involved, a single driveway, properly spaced, with a deceleration lane and correct geometry could be
required. Where multiple new uses are involved, a single driveway serving multiple uses
could be required instead of separate driveways for each use. In any of these situations,
these are substantial ways in which the access management objectives of this Plan can
be implemented.

The site plan review process can be enhanced and potential conflicts avoided by
coordinating review of the site plan with MDOT and/or the County Road Commission
and adjoining units of local government. A coordinated site plan review procedure is
described a little later in this Chapter.

**Preventive Measures**

Since large segments of the corridor have not been developed, perhaps the greatest
opportunity for successful application of access management techniques is in these
areas. Typically that means ensuring wide minimum lot widths to keep driveways widely
separated and restricting each existing parcel to only a single access point, even if it is
divided in the future. This also ensures adequate driveway spacing which reduces the
number of potential conflict points and turning movements, as well as helps ensure the
highway traffic is able to move at design speeds—which in turn prevents future
congestion. These measures are embodied in the first MDOT model access
management ordinance option which is targeted for use in rural townships. It is a simpler
approach than the second MDOT model access management ordinance which is
targeted for use in cities and suburbanizing townships.

Of course the most effective means of minimizing new access points and preserving the
traffic carrying function of a road is to plan and zone abutting land for low intensity
resource-based land uses like forestry, agriculture, and mining. Much of the land in the
eastern part of the corridor is already zoned that way, and the longer it stays that way,
the better the goals and objectives of this Plan will be achieved. The worst scenario for
achieving the goals and objectives of this Plan is to zone more land for strip commercial
or even strip residential development. Future commercial or residential development
should be planned and built in clusters with the primary access by means of a single
access drive, rather than separate driveways for each commercial use or residence. This
will require careful coordination of both zoning and land division decisions. But first,
those communities on the corridor that do not have a current future land use plan and an
updated zoning ordinance with full site plan review provisions, need to get these adopted
or there will be little ability to guide future land use and access management decisions
consistent with this Plan. Once adopted, it is important to review and if necessary update
the local future land use plan and zoning ordinance at least once each five years (which
is now required for local plans).

**Coordinated Permit Reviews**

The "glue" that works best to ensure consistent application of access management
standards over time, is a coordinated review process involving all the local government
units along the corridor with each of the road authorities. The typical and preferred
process are illustrated in Figure 6-1.

This process is very familiar to the communities along this corridor as each has entered
into a Memorandum of Understanding (MOU) to undertake the creation of this Plan and
to coordinate review and approval of development projects along the corridor. That MOU
provides in part:
“The parties to this Memorandum of Understanding agree that they will not authorize site plan approvals, rezonings, special land uses and/or conditional uses, new Planned Unit Developments, or similar projects requiring Planning Commission action in the planning area [1000 feet either side of US-2/US-141/M-95] unless and until they have met jointly to discuss and review the impact of the proposal—favorable or unfavorable—on the future development of the US-2/US-141/M-95 Corridor.”

The MOU goes on to establish a procedure for calling meetings and puts a 30-day time limit on reviews. A complete copy of the MOU is in the Appendix.

The Corridor Advisory Committee should continue to meet bi-monthly (unless a local project requires a meeting in-between) and review all the pending permits and prospective development projects proposed along the corridor. The Corridor Advisory Committee includes the six local governments, CUPPAD, MDOT as well as a representative of the County Road Commission, and the County Planning Commission.

**Figure 6-1**

**Typical Separate Review & Approval Process**

- MDOT or County Road Authority
  - Receives Driveway Permit Application
  - Reviews Permit Application
  - Approves, Denies or Conditionally Approves Permit Application

- Local Government
  - Receives Development Plan and Application for Review
  - Reviews Permit Application
  - Approves, Denies or Conditionally Approves Permit Application

Where there is little or no coordination, chances for problems increase.

**Preferred Coordinated Review & Approval Process**

- MDOT or County Road Authority
  - Receives Driveway Permit Application
  - Approves, Denies or Conditionally Approves Permit Application
  - Terms of permit approval are mutually agreed upon before issuance
  - Coordinated Review of Permit Application

- Local Government
  - Receives Development Plan and Application for Review
  - Approves, Denies or Conditionally Approves Permit Application

In a coordinated process, comments are shared and necessary site plan modifications to conform with each set of regulations are agreed upon before final decisions are made. Approval of each permit is conditioned on receipt of required permits issued by the other approving authorities.

Coordinated permit reviews allow zoning jurisdictions to condition site plan approval on receipt of a driveway permit from MDOT and/or the County Road Commission and those agencies can condition their permits on receipt of zoning approval from the local government. Not only does this prevent developers from sidestepping important access management standards, it also typically results in a higher level of review of pending site plans, as many experienced persons may spot important considerations than any one alone may miss. It can also point out emerging traffic safety or capacity problems that otherwise might not come to the attention of the road authority for some time. Developers typically benefit from the coordination by not having to take matters back and forth between key agencies as often, since those agencies are already sitting down together in review of the same site plans.

Coordinated permit reviews also reduce the need for a separate monitoring and enforcement activity as all the responsible parties meet monthly, and if a permittee is not properly following through with an issued permit, it is likely that several members of the group will have observed it in their travels on the corridor. It is also a beneficial forum for discussion of any needed changes to access management standards. If over time, a particular standard is recognized as problematic in multiple jurisdictions, then it may need to be changed. If it is changed in one jurisdiction, it most likely will need to be changed in all. By keeping a uniform set of access management standards along the corridor, the development community will more quickly become familiar with the standards and will not be faced with multiple sets of standards with slight differences that are otherwise hard to keep track of.

Another benefit of the coordinated site plan review procedure becomes evident when permit applicants request a variation or deviation from particular access management standards. By sharing experiences and carefully reviewing the merits of such requests, each community will benefit from the thinking that goes into the conclusion, making it less likely that one community will err from an independent analysis and create a situation that becomes cited by permit applicants in other communities as justification for a deviation on their project.

The current MOU could be strengthened by adding MDOT commitments not to issue driveway permits in conflict with locally adopted access management standards, for all parties to condition approval of permits on the receipt of approval of permits from the other, and by establishing a periodic interval for reviewing and updating the MOU if necessary. The MOU could also be strengthened by incorporating review of site plans that do not go before local planning commission’s but instead are approved administratively by local zoning administrators. These and other elements are found in the model MDOT MOU for Access Management in the Appendices to the MDOT Access Management Guidebook.

**COORDINATED CAPITAL IMPROVEMENT PLANNING**

The last important implementation measure concerns coordinating capital improvements along the corridor. Objectives 13-15 in Chapter Two address coordinated capital improvement planning and public input into decision making. These objectives are reproduced below:
“13. Encourage all local units of government along the corridor to prepare and thereafter annually update a community wide capital improvement program that lists proposed infrastructure spending by location, cost, source of revenue and timing, with a special focus on coordinating such spending plans with MDOT and the County Road Commission where US-2/US-141/M-95 and county roads are concerned.

14. Encourage MDOT to plan future road and access management improvements along the highway in a manner that is consistent with this Plan, that permits local input prior to final decision-making and that serves as a model of intergovernmental cooperation.

15. Educate citizens, businesses and property owners about the basic contents of this Plan and seek their input prior to adopting any Plan updates.”

Each of the Planning Enabling Acts make the local Planning Commission responsible for preparing and annually updating a list of proposed capital improvements consistent with the adopted local future land use, master or comprehensive plan. This is usually embodied in a local capital improvement program or CIP. Capital improvements are physical facilities like sewer or water lines, roads, or parks; or buildings, like fire halls, police stations, and township halls. Each project proposed over the next six-years is listed by type, location, cost, means of financing, and year proposed to be constructed. As one year is finished, another is added during the annual updating process.

CIP’s are an excellent tool for implementing local master plans and when coordinated with neighboring jurisdictions and road authorities, they can prevent duplicate expenditures (like tearing the same section of road up two years in a row, as for a resurfacing project one year, and then to make a sewer line extension the next year), and are a great aid in phasing work so as to avoid conflicts and take advantage of economies of scale (where they exist). Coordinated local CIP’s also facilitate scheduling road improvement projects, and assist the development community by interjecting clear timetables and greater predictability into infrastructure improvement decisions.

While not all jurisdictions along the corridor currently have annual CIP’s, nor do they routinely coordinate with MDOT as it prepares phasing plans for improvements on the US-2/US-141/M-95 corridor consistent with this Plan now—it is a great time to start. Eventually, if all jurisdictions prepare a CIP and coordinate their preparation to coincide with local, MDOT and County Road Commission budgeting, available infrastructure money will be spent in the wisest, most efficient manner that least disrupts the lives of citizens in Dickinson County and users of US-2/US-141/M-95.
APPENDIX A

Resolution and Memorandum of Understanding
RESOLUTION AND MEMORANDUM OF UNDERSTANDING

The following Resolution and Memorandum of Understanding is offered in view of the need for a cooperative and coordinated effort on the part of the following Dickinson County local governments; the City of Iron Mountain, the City of Kingsford, the City of Norway, the Charter Township of Breitung, the Township of Norway, and the Township of Waucedah, along the US2 corridor from the Menominee County boundary to the Wisconsin Border, the US141 corridor from the Wisconsin Border to the Wisconsin Border, and the M95 corridor from the Wisconsin border to the intersection of US2/141. This study area shall be known as the US2/141/M95 highway corridor. The memorandum should be viewed as a community commitment to participation in the area wide planning and development of the US2/141/M95 corridor, and name the Dickinson County Planning Commission as their lead organization, to act on their behalf to facilitate this study.

RESOLUTION

WHEREAS the City of Iron Mountain, the City of Kingsford, the City of Norway, the Charter Township of Breitung, the Township of Norway, and the Township of Waucedah, located in Dickinson County, Michigan recognizes the need to participate in a coordinated planning effort for the US2/141/M95 highway corridor; and

WHEREAS the City of Iron Mountain, the City of Kingsford, the City of Norway, the Charter Township of Breitung, the Township of Norway, and the Township of Waucedah, recognizes the need to implement controlled land use development and access control standards in the interest of all parties; and

WHEREAS the City of Iron Mountain, the City of Kingsford, the City of Norway, the Charter Township of Breitung, the Township of Norway, and the Township of Waucedah, reviewed the Memorandum of Understanding which is attached hereto and made part hereof; and

WHEREAS the City of Iron Mountain, the City of Kingsford, the City of Norway, the Charter Township of Breitung, the Township of Norway, and the Township of Waucedah, recognize that in order to facilitate such a study for this area it is necessary to name a lead agency and therefore desire to name the Dickinson County Planning Commission as their lead agency to facilitate this study with the Michigan Department of Transportation, and

WHEREAS the City of Iron Mountain, the City of Kingsford, the City of Norway, the Charter Township of Breitung, the Township of Norway, and the Township of Waucedah, recognize that it will be necessary to name two persons to a US2/141/M95 highway corridor study team consisting of two representatives from
their community; one representing the Community’s Council or Board and one representing the Community’s Planning Commission, Planning Board or Zoning Board to act as an advisory committee working with the Dickinson County Planning Commission to facilitate this study, and

WHEREAS in order to participate in this project, it will not be necessary for the participating communities to provide a local financial contribution.

NOW, THEREFORE, BE IT RESOLVED, that the City of Iron Mountain, the City of Kingsford, the City of Norway, the Charter Township of Breitung, the Township of Norway, and the Township of Waucedah, hereby adopts the said Memorandum of Understanding as a policy document and instructs the staff and affected Boards and Commissions of the City of Iron Mountain, the City of Kingsford, the City of Norway, the Charter Township of Breitung, the Township of Norway, and the Township of Waucedah, to implement the provisions thereof.

Adopted this _______ day of ___________________________, 2005.

Yeas:
Nays:
Absent:
MEMORANDUM OF UNDERSTANDING

In furthering the objectives of the US2/141/M95 highway corridor, the Corridor Study Team will seek to:

Advise the local municipalities concerning the effects of the zoning and planning changes and access design features along the US2/141/M95 Corridor and as a means of discussing development change on the highway and adjacent lands within the corridor area.

Further, the City of Iron Mountain, the City of Kingsford, the City of Norway, the Charter Township of Breitung, the Township of Norway, and the Township of Waucedah, jointly and mutually agree to participate in a comprehensive, cooperative, and continuing planning process for the US2/141/M95 highway corridor planning area and agree to participate on the US2/141/M95 highway Corridor Study Team.

For purposes of this memorandum, the planning area is defined as:

1,000 feet on both sides of the centerline of the following roads; US2; from the Menominee County boundary to the Wisconsin Border, US141; from the Wisconsin Border to the Wisconsin Border, and M95; from the Wisconsin border to the intersection of US2/141.

Parties to this agreement recognize that the comprehensive character of the planning process requires an inventory, analysis, and continual updating of the following basic elements as they pertain to future development activity:

Land use, development proposals, population, economic factors, natural features, public utilities, traffic volumes and travel patterns, traffic control facilities, access control standards, financial resources, state and federal grant programs, codes, ordinances, and regulations.

Once the study is completed and implementation strategy is developed which will include access control measures that can be adopted as an amendment to the community's zoning ordinance or as a stand alone ordinance, the following policies are encouraged to be implemented:

1. The parties to this Memorandum of Understanding agree that they will not authorize site plan approvals, except existing single family dwellings, re-zonings, special land uses and or conditional uses, new Planned Unit Developments, or
similar projects requiring Planning Commission action in the planning area unless and until they have met jointly to discuss and review the impact of the proposal favorable or unfavorable – on the future development of the US2/141/M95 Corridor.

2. The US2/141/M95 Corridor Study Team will meet upon request of a local member government to review and comment on any plans or development changes which effect the US2/141/M95 Corridor. In order to assure timely action on a proposal, discussions and/or recommendations must take place within a 30 day period from notification to the US2/141/M95 Corridor Study Team, else the local member government may act upon such proposal.

3. The US2/141/M95 Corridor Study Team will develop a review process that deals with development activity within the study area corridor, which could include a tiered program depending on development scope within the study area.

Signature to this Memorandum of Understanding jointly and mutually agree to participate in this comprehensive planning process and to participate on the US2/141/M95 Corridor Study Team.

Dated: _________________________

Attest:
APPENDIX B

Sample Access Management Ordinance
BACKGROUND
Three sets of amendments follow to add basic access management regulations to the local zoning ordinances of Breitung, Norway and Waukedah Townships, and the Cities of Kingsford, Iron Mountain and Norway as a means to implement the US-2/US-141/M-95 Access Management Action Plan. These amendments are based on the sample ordinance language in Chapter 8 of the MDOT Access Management Guidebook (please see that chapter for more background) and in the US-31 Access Management Study (near the City of Manistee) recently completed for MDOT in 2004.

1. The first set of amendments are to be added to the General Provisions section (or Article) of the Zoning Ordinance to add authority for an escrow fee so that professionals can be hired to review large and complex projects (anywhere in the community not just on the corridor) at no charge to the community.

2. The second set of amendments are a basic set of access management provisions. They focus on the “lock in the access” approach in the townships since so much land along US-2/US-141/M-95 and county primary roads is undeveloped. They include provisions for driveway separation, requiring future parking lot connections and service drives. They include a provision to coordinate permit reviews with the Michigan Department of Transportation and the County Road Commission. Last is a new provision to require traffic impact studies in some cases. These could be added to the General Provisions section of the Ordinance, or adopted as a separate Article or Section of the Ordinance.

3. The third set of amendments propose adding some new access related definitions to the Definitions section (or Article) of the Ordinance.

Each community will have to make minor revisions to this ordinance to adapt it to fit their own situation. These changes include adding proper section references, inserting the name of your community and governing body in a few places and similar changes. Substantive changes to the standards should not be made unless all the other communities make the same change, as this will undermine one of the most basic objectives: uniformity of access management regulation along the corridor. The approach embodied in this sample should meet the needs of all communities along the corridor for about the next 10-15 years. However, at some point, a more robust set of access management regulations will be necessary. At that time, the access management regulations in all jurisdictions should also be changed to remain uniform. MDOT may also advise on other updates as time passes.
Ordinance #________ - Amendments to Zoning Ordinance

The __________ (name of governing body, such as Board of Trustees or City Council) of __________ (name of jurisdiction) ordains:

Section I. AMENDMENTS TO ARTICLE ____ : GENERAL PROVISIONS TO ADD SECTIONS ONE, TWO, AND THREE

SECTION ONE: FEES IN ESCROW FOR PROFESSIONAL REVIEWS

Any application for rezoning, site plan approval, a Special Land Use Permit, Planned Unit Development, variance, or other use or activity requiring a permit under this Ordinance above the following threshold, may also require the deposit of fees to be held in escrow in the name of the applicant. An escrow fee shall be required by either the Zoning Administrator or the Planning Commission for any project which requires a traffic impact study under Section Two or Three, or which has more than twenty (20) dwelling units, or more than twenty-thousand (20,000) square feet of enclosed space, or which requires more than twenty (20) parking spaces, or which involves surface or below surface mining or disposal of mine materials. An escrow fee may be required to obtain a professional review of any other project which may, in the discretion of the Zoning Administrator or Planning Commission create an identifiable and potentially negative impact on public roads, other infrastructure or services, or on adjacent properties and because of which, professional input is desired before a decision to approve, deny or approve with conditions is made.

A. The escrow shall be used to pay professional review expenses of engineers, community planners, and any other professionals whose expertise _____ (name of community) values to review the proposed application and/or site plan of an applicant. Professional review shall result in a report to the Planning Commission indicating the extent of conformance or nonconformance with this Ordinance and identify any problems which may create a threat to public health, safety or the general welfare. Mitigation measures or alterations to a proposed design may be identified where they would serve to lessen or eliminate identified impacts. The applicant will receive a copy of any professional review hired by _____ (name of community) and a copy of the statement of expenses for the professional services rendered, if requested.
B. No application for which an escrow fee is required will be processed until the escrow fee is deposited with the Treasurer. The amount of the escrow fee shall be established based on an estimate of the cost of the services to be rendered by the professionals contacted by the Zoning Administrator. The applicant is entitled to a refund of any unused escrow fees at the time a permit is either issued or denied in response to the applicant's request.

C. If actual professional review costs exceed the amount of an escrow, the applicant shall pay the balance due prior to receipt of any land use or other permit issued by _____ (name of community) in response to the applicant's request. Any unused fee collected in escrow shall be promptly returned to the applicant once a final determination on an application has been made or the applicant withdraws the request and expenses have not yet been incurred.

D. Disputes on the costs of professional reviews may be resolved by an arbitrator mutually satisfactory to both parties.

SECTION TWO: ACCESS MANAGEMENT

A. Findings and Intent.
Conditions along the major highways in Dickinson County are changing with increasing development and traffic. Continued development along US-2/US-141 and M-95 will further increase traffic volumes and introduce additional conflict points which will erode traffic operations and increase potential for traffic crashes. Numerous published studies document the positive relationship between well-designed access management systems and traffic operations and safety. Those studies and the experiences of many other communities demonstrate that implementing standards on the number, placement and design of access points (driveways and side street intersections) can preserve the capacity of the roadway and reduce the potential for crashes while preserving a good business environment and the existing investment in the highway. The conditions along US-2/US-141/M-95 and a series of access management recommendations are embodied in the US-2/US-141/M-95 Access Management Action Plan. Among those recommendations are the creation of an overlay zone along these highways within Dickinson County and the adoption of uniform access management standards by all the jurisdictions along the US-2/US-141/M-95 corridor which are based on the Michigan Department of Transportation access management standards and the Michigan Access Management Guidebook, provided to local governments by the Michigan Department of Transportation.

The provisions of this Section are intended to promote safe and efficient travel on state highways within Dickinson County; improve safety and reduce the potential for crashes; minimize disruptive and potentially hazardous traffic conflicts; ensure safe access by emergency vehicles; protect the substantial public investment in the highway and street system by preserving capacity and avoiding the need for
unnecessary and costly reconstruction which disrupts business and traffic flow; separate traffic conflict areas by reducing the number of driveways; provide safe spacing standards between driveways, and between driveways and intersections; provide for shared access between abutting properties; implement the Community Comprehensive, Master, or Future Land Use Plan (*insert proper name of local plan*) and the US-2/US-141/M-95 Access Management Action Plan recommendations; ensure reasonable access to properties, although not always by the most direct access; and to coordinate access decisions with the Michigan Department of Transportation, the Dickinson County Road Commission, and adjoining jurisdictions, as applicable.

To these ends, the following provisions:

1. Establish a Highway Overlay Zone to regulate access points along the highway.

2. Identify additional submittal information and review procedures required for parcels that front along US-2/US-141/M-95.

3. Require demonstration that new parcels are accessible and in compliance with the access standards of this Ordinance to ensure safe accessibility as required by the Land Division Act.

4. Restrict lots and parcels to a single access point except under certain circumstances.

5. Require longer frontages or wider minimum lot widths than are required in underlying zoning districts to help achieve access management spacing standards;

6. Require coordinated access among adjacent lands wherever feasible;

7. Improve situations where existing development along the highways does not conform to the standards and intent of this Ordinance.

8. Establish uniform standards to ensure fair and equal application.

**B. Applicability**

The standards of this Section apply to all lots and parcels that abut the highway right-of-way of US-2/US-141/M-95 and such other lands that front on intersecting streets within three hundred fifty (350) feet of the US-2/US-141/M-95 right-of-way within ____ (insert name of jurisdiction). This area is referred to as the Highway Overlay Zone. (Communities may wish to map this area on the Zoning Map or refer to a separate overlay zone map which would be included here. In cities, it may also be pertinent to reduce the area in the overlay zone on intersecting roads to 200 feet, or to expand the scope of the regulations to include other primary arterials that are specifically
named in this section, or depicted on a map to this section. See Chapter 8 of the Michigan Access Management Guidebook for more information.)

The standards of this Section shall be applied by the Zoning Administrator during plot plan review (some jurisdictions do not require plot plans—these are simple drawings accompanying zoning permit applications for low intensity land uses like single family homes on platted lots—delete this reference if it is not relevant) and by the Planning Commission during site plan review, as is appropriate to the application. The Planning Commission shall make written findings of nonconformance, conformance, or conformance if certain conditions are met with the standards of this Section prior to disapproving or approving a site plan per the requirements of Section ______ (the site plan review section of the Ordinance). The ________ (name of jurisdiction) shall coordinate its review of the access elements of a plot plan or site plan with the appropriate road authority prior to making a decision on an application (see D. below). The approval of a plot plan or site plan does not negate the responsibility of an applicant to subsequently secure driveway permits from the appropriate road authority, either the ________ (city road authority), the ________ County Road Commission, or the Michigan Department of Transportation (depending on the roadway). Any driveway permit obtained by an applicant prior to review and approval of a plot plan or site plan as required under this Ordinance will be ignored, unless it is conditioned upon approval under this Ordinance.

These regulations apply in addition to, and simultaneously with, the other applicable regulations of the Zoning Ordinance. Permitted and Special Land Uses within the Highway Overlay Zone shall be as regulated in the underlying zoning district (as designated on the zoning map), and shall meet all the applicable requirements for that district, with the following additional provisions:

1. The number of access points is the fewest needed to allow motorists reasonable access to the site.

2. Access spacing from intersections and other driveways shall meet the standards within the Highway Overlay Zone, and the guidelines of the applicable road agency (MDOT and/or Dickinson County Road Commission) and the recommendations of the US-2/US-141/M-95 Access Management Access Plan as appropriate.

3. Where an applicant shares access with adjacent uses, either now or in the future, any shared access and maintenance agreements must be recorded with the County Register of Deeds.

4. No building or structure, nor the enlargement of any building or structure, shall be erected unless the Highway Overlay Zone regulations applicable to the site are met and maintained in connection
with such building, structure, or enlargement.

5. No land division, subdivision or site condominium project for land within this Highway Overlay Zone shall be approved unless compliance with the access spacing standards in this Section is demonstrated.

6. Any change in use on a site that does not meet the access standards of this Highway Overlay Zone, shall be required to submit an application for approval by the Planning Commission and submit information to the MDOT, and/or County Road Commission as appropriate, to determine if a new access permit is required. See subsection K. below.

7. For building or parking lot expansions, or changes in use, or site redevelopment that cannot meet the standards of this ordinance due to parcel size or configuration, the Planning Commission shall determine the extent of upgrades to bring the site into greater compliance with the access standards of this Highway Overlay Zone. In making its decision, the Planning Commission shall consider the existing and projected traffic conditions, any sight distance limitations, site topography or natural features, impacts on internal site circulation, characteristics of the affected land uses, recommendations within the US-2/US-141/M-95 Access Management Action Plan, and any recommendations from the MDOT, and/or Dickinson County Road Commission as appropriate. Required improvements may include removal, rearrangement or redesign of driveways or other access.

8. Where conflict occurs between the standards of this Ordinance and other applicable ordinances, the more restrictive regulations shall apply.

C. **One Access Per Parcel** (also known as “lock-in driveway provision. This Section may not be appropriate in Kingsford, Iron Mountain and City of Norway as there is not much land along the highway, if not, insert instead “Reserved for Future Use” after “C” and delete this text.)

1. All land in a parcel or lot having a single tax code number, as of the effective date of the amendment adding this provision to the Ordinance (hereafter referred to as "the parent parcel"), that shares a lot line for less than six hundred (600) feet with right-of-way on US-2/US-141/M-95 shall be entitled to one (1) driveway or road access per parcel from said public road or highway, unless hereafter shared access or alternative access is provided to that parcel.
   a. All subsequent land divisions of a parent parcel, shall not increase the number of driveways or road accesses beyond those entitled to the parent parcel on the effective date of this amendment.
b. Parcels subsequently divided from the parent parcel, either by metes and bounds descriptions, or as a plat under the applicable provisions of the Land Division Act, Public Act 288 of 1967, as amended, or developed as a condominium project in accord with the Condominium Act, Public Act 59 of 1978, as amended, shall have access by a platted subdivision road, by another public road, by an approved private road, frontage road or rear service drive (insert Ordinance reference to these requirements if there are any).

2. Parent parcels with more than six hundred (600) feet of frontage on a public road or highway shall also meet the requirements of C.1.a and C.1.b above, except that whether subsequently divided or not, they are entitled to not more than one driveway for each six hundred (600) feet of public road frontage thereafter, unless a registered traffic engineer determines to the satisfaction of the Planning Commission that topographic conditions on the site, curvature on the road, or sight distance limitations demonstrate an additional driveway within a lesser distance is safer or the nature of the land use to be served requires an additional driveway for improved safety. See also subsection R.2.a.

D. Applications

1. Applications
Applications for driveway or access approval shall be made on a form prescribed by and available at the Michigan Department of Transportation and Dickinson County Road Commission as applicable. A copy of the completed form submitted to the applicable road authority shall be submitted to the Zoning Administrator as well.

2. Applications for all uses requiring site plan review shall meet the submittal, review and approval requirements of Article ____ (insert reference to site plan review article) in addition to those of this Section Two. In addition:

a. Applications are strongly encouraged to rely on the following sources for access designs, the National Access Management Manual, TRB, 2003; National Cooperative Highway Research Program (NCHRP), “Access Management Guidelines to Activity Centers” Report 348, “Impacts of Access Management Techniques” Report 420; and the AASHTO (American Association of State Highway and Transportation Officials) “Green Book” A Policy on Geometric Design of Highways and Streets. The following techniques are addressed in these guidebooks and are strongly encouraged to be used when designing access:

1) Not more than one driveway access per abutting road
2) Shared driveways
3) Service drives: front and/or rear
4) Parking lot connections with adjacent property
5) Other appropriate designs to limit access points on an arterial or collector.

b. As applicable, applications shall be accompanied by an escrow fee for professional review per the requirements of Section One.

c. In addition to the information required in Article ___ *(insert site plan review reference)* the information listed below shall also be submitted for any lot or parcel within the Highway Overlay Zone accompanied by clear, scaled drawings *(minimum of 1''=20'')* showing the following items:

1) Property lines.
2) Right-of-way lines and width, and location and width of existing road surface.
3) Location and size of all structures existing and proposed on the site.
4) Existing access points. Existing access points within 500 feet *(250 in cities)* on either side of the US-2/US-141/M-95 frontage, and along both sides of any adjoining roads, shall be shown on the site plan, aerial photographs or on a plan sheet.
5) Surface type and dimensions shall be provided for all existing and proposed driveways (width, radii, throat length, length of any deceleration lanes or tapers, pavement markings and signs), intersecting streets, and all curb radii within the site.
6) The site plan shall illustrate the route and dimensioned turning movements of any passenger vehicles as well as expected truck traffic, tankers, delivery vehicles, waste receptacle vehicles and similar vehicles. The plan should confirm that routing of vehicles will not disrupt operations at the access points nor impede maneuvering or parking within the site.
7) Size and arrangement of parking stalls and aisles.
8) The applicant shall submit evidence indicating that the sight distance, driveway spacing and drainage requirements of the Michigan Department of Transportation or Dickinson County Road Commission are met.
9) Dimensions between proposed and existing access points on both sides of the highway or road (and median crossovers if applicable now or known in the future).
10) Design dimensions and justification for any alternative or innovative access design such as frontage roads, rear access or service drives, or parking lot cross-access.
11) Where shared access is proposed or required, a shared access and maintenance agreement shall be submitted for
approval. Once approved, this agreement shall be recorded with the County Register of Deeds.

12) Show all existing and proposed landscaping, signs, and other structures or treatments within and adjacent to the right-of-way.

13) Dumpsters or other garbage containers.

14) The location of all proposed snow storage from parking lots which must not interfere with clear sight distance when turning into or out of a site, or safely moving within a site.

15) Traffic impact study meeting the requirements of Section Three where applicable.

E. Review and Approval Process

The following process shall be completed to obtain access approval:

1. An Access Application meeting the requirements of Section One D. above shall be submitted to the Zoning Administrator on the same day it was submitted to the Michigan Department of Transportation and/or the Dickinson County Road Commission, as applicable.

2. The completed application must be received by the Zoning Administrator at least fourteen (14) days prior to the Planning Commission meeting where the application will be reviewed.

3. The applicant, the Zoning Administrator and representatives of the Dickinson County Road Commission, the Michigan Department of Transportation and the Planning Commission may meet prior to the Planning Commission meeting to review the application and proposed access design. Such a meeting shall occur for all projects where a traffic impact study is required.

4. If the Planning Commission considers the application first, it shall recommend approval conditioned upon approval of the applicable road authority, or it shall recommend denial based on nonconformance with this Ordinance, or if necessary, table action and request additional information. The action of the Planning Commission shall be immediately transmitted to the applicable road authority.

5. It is expected that if the Michigan Department of Transportation and/or the Dickinson County Road Commission, as applicable, review the application first, each entity will immediately send its decision on the application to the Planning Commission for their consideration. One of three actions may result;
   a. If the Planning Commission and the Michigan Department of Transportation, and the Road Commission, as applicable, approve the application as submitted, the access application shall be approved.
b. If both the Planning Commission and the Michigan Department of Transportation and the Road Commission, as applicable, deny the application, the application shall not be approved.

c. If either the Planning Commission, Michigan Department of Transportation, or Road Commission, as applicable, requests additional information, approval with conditions, or does not concur in approval or denial, there shall be a joint meeting of the Zoning Administrator, a representative of the Planning Commission and staff of the Michigan Department of Transportation and/or the Dickinson County Road Commission, as applicable, and the applicants. The purpose of this meeting will be to review the application to obtain concurrence between the Planning Commission and the applicable road authorities regarding approval or denial and the terms and conditions of any permit approval.

6. No application will be considered approved, nor will any permit be considered valid unless all the above-mentioned agencies, as applicable, have indicated approval unless approval by any of the above-mentioned agencies would clearly violate adopted regulations of the agency. In this case the application shall be denied by that agency and the requested driveway(s) shall not be constructed. Conditions may be imposed by the Planning Commission to ensure conformance with the terms of any driveway permit approved by a road authority.

F. Record of Application
The Zoning Administrator shall keep a record of each application that has been submitted, including the disposition of each one. This record shall be a public record.

G. Period of Approval
Approval of an application remains valid for a period of one year from the date it was authorized. If authorized construction, including any required rear service road or frontage road is not initiated by the end of one (1) year, the authorization is automatically null and void. Any additional approvals that have been granted by the Planning Commission or the Zoning Board of Appeals, such as Special Land Use Permits, or variances, also expire at the end of one year. (Be sure this and provisions in H., I., J., and K. below conform with related provisions that are likely already in the Ordinance. Revise accordingly.)

H. Renewal
An approval may be extended for a period not to exceed one-year. The extension must be requested, in writing by the applicant before the expiration of the initial approval. The Zoning Administrator may approve extension of an authorization provided there are no deviations from the original approval present on the site or planned, and there are no violations of applicable
ordinances and no development on abutting property has occurred with a driveway location that creates an unsafe condition. If there is any deviation or cause for question, the Zoning Administrator shall consult a representative of the Michigan Department of Transportation and/or the Dickinson County Road Commission, as applicable, for input.

I. Re-issuance Requires New Application
Re-issuance of an authorization that has expired requires a new Access Application form to be filled out, fee paid, and processed independently of previous action. See subsection E.1.

J. Maintenance
The applicant shall assume all responsibility for all maintenance of driveway approaches from the right-of-way line to the edge of the traveled roadway.

K. Change of Use Also May Require New Driveway
When a building permit is sought for the reconstruction, rehabilitation or expansion of an existing site or a zoning or occupancy certificate is sought for use or change of use for any land, buildings, or structures, all of the existing, as well as proposed driveway approaches and parking facilities shall comply, or be brought into compliance, with all design standards as required by the Michigan Department of Transportation and/or the Dickinson County Road Commission as applicable, and as set forth in this Ordinance prior to the issuance of a Zoning Permit, and pursuant to the procedures of this section.

L. Changes Require New Application
Where authorization has been granted for entrances to a parking facility, said facility shall not be altered or the plan of operation changed until a revised Access Application has been submitted and approved as specified in this Section.

M. Closing of Driveways
Application to construct or reconstruct any driveway entrance and approach to a site shall also cover the reconstruction or closing of all nonconforming or unused entrances and approaches to the same site at the expense of the property owner, unless some other arrangement is agreed to by the road authority responsible for the road in question.

N. Inspection
The Zoning Administrator shall inspect the driveway and any other required access elements during construction and following construction for conformance with the approved application prior to allowing occupancy. The Zoning Administrator may consult with MDOT and/or the County Road Commission as applicable, prior to making a determination of conformance or nonconformance with an approved application.
O. Performance Bond
The community may require a performance bond or cash deposit in any sum not to exceed $5,000 for each such driveway approach or entrance to insure compliance with an approved application. Such bond shall terminate and the deposit be returned to the applicant when the terms of the approval have been met or when the authorization is cancelled or terminated.

P. Reserved for Future Use

Q. Lot Width and Setbacks
1. Minimum Lot Width - Except for existing lots of record, all lots fronting on US-2/US-141/M-95 subject to this Section, shall not be less than three hundred (300) feet in width, unless served by shared access or a service drive that meets the requirements of Section R 9, 10, or 11, in which case minimum lot width may be reduced to not less than one hundred (100) feet in width if a deed restriction is approved and recorded with the County Register of Deeds demonstrating an effective method for long term maintenance of the shared access, service drive and/or parking lot cross-access.

2. Structure Setback - No structure other than signs, as allowed in Section ___ (insert reference to sign section of the Ordinance), telephone poles and other utility structures that are not buildings, transfer stations or substations, shall be permitted within fifty (50) feet of the roadway right-of-way. (this distance may need to be adjusted in the cities)

3. Parking Setback and Landscaped Area - No parking or display of vehicles, goods or other materials for sale, shall be located within fifty (50) feet of the roadway right-of-way. (this distance may need to be adjusted in the cities) This setback shall be planted in grass and landscaped with small clusters of salt tolerant trees and shrubs suitable to the underlying soils unless another design is approved under the landscape provisions of Section _______. (This provision improves the aesthetic appearance along a roadway, and improves the contrast between a vehicle and the pavement, improving ease of visibility. It also serves as a snow storage zone. See MDOT rule 32(2) in administrative rules in Appendix D of the Michigan Access Management Guidebook.)

R. Access Management Standards
No road, driveway, shared access, parking lot cross-access, service road, or other access arrangement to all lots and parcels within the Highway Overlay Zone shall be established, reconstructed or removed without first meeting the requirements of this Section.

1. Each lot/parcel with highway frontage on US-2/US-141/M-95 shall be
permitted one access point. This access point may consist of an individual driveway, a shared access with an adjacent use, or access via a service drive or frontage road. As noted in subsections B and C, land divisions shall not be permitted that may prevent compliance with the access location standards of this Highway Overlay Zone.

2. When alternatives to a single, two-way driveway are necessary to provide reasonable driveway access to property fronting on US-2/US-141/M-95, and shared access or a service drive are not a viable option, the following progression of alternatives should be used:
   a. One (1) standard, two-way driveway;
   b. Additional ingress/egress lanes on one (1) standard, two-way driveway;
   c. Two (2) one-way driveways;
   d. Additional ingress/egress lanes on two (2), one-way driveways;
   e. Additional driveway(s) on an abutting street with a lower functional classification;
   f. Additional driveway on arterial street.

   Note: Restricted turns and roadway modifications will be considered in conjunction with alternative driveway designs.

3. Driveways and new intersecting streets shall provide the following spacing from other access points along the same side of the public street (measured from centerline to centerline of each access point), based on the posted speed limit along the public street segment, unless the appropriate road authority approves less based on the land use characteristics, lot size, and/or restricted turns in the driveway design.

<table>
<thead>
<tr>
<th>Posted Speed Limit</th>
<th>Along US-2/US-141/M-95*</th>
<th>Along Other Intersecting Major Arterials**</th>
<th>Along all Other Intersecting Streets (not major arterials)</th>
</tr>
</thead>
<tbody>
<tr>
<td>35 mph or less</td>
<td>245 ft.</td>
<td>245 ft.</td>
<td>150 ft.</td>
</tr>
<tr>
<td>40 mph</td>
<td>300 ft.</td>
<td>300 ft.</td>
<td>185 ft.</td>
</tr>
<tr>
<td>45 mph</td>
<td>350 ft.</td>
<td>350 ft.</td>
<td>230 ft.</td>
</tr>
<tr>
<td>50 mph</td>
<td>455 ft.</td>
<td>455 ft.</td>
<td>275 ft.</td>
</tr>
<tr>
<td>55 mph</td>
<td>455 ft.</td>
<td>455 ft.</td>
<td>350 ft.</td>
</tr>
</tbody>
</table>

* Unless greater spacing is required by MDOT **(list other arterials here)

4. Where the subject site adjoins land that may be developed or redeveloped in the future, including adjacent lands or potential outlots, the access shall be located to ensure the adjacent site(s) can also meet the access location standards in the future.
5. Driveways or new intersecting streets along sections of US-2/US-141/M-95 with an existing or planned median shall be located in consideration of existing or approved median crossovers. A sufficient length for weaving across travel lanes and storage within the median shall be provided, consistent with MDOT published standards.

6. Driveways and new intersecting streets shall be aligned with driveways on the opposite side of the street or offset a minimum of 250 feet, centerline to centerline wherever feasible. The Planning Commission may reduce this to not less than 150 feet where each of the opposing access points generates less than 50 trips (inbound and outbound) during the peak hour of the public street or where sight distance limitations exist, or shall rely on the best option identified by MDOT.

7. Minimum spacing of driveways from intersections shall be in accordance with the table below (measured from pavement edge to pavement edge) unless MDOT authorizes a lesser spacing:

<table>
<thead>
<tr>
<th>Signalized Locations*</th>
<th>Distance in Feet</th>
<th>Unsignalized Locations</th>
<th>Distance in Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Along other public streets</td>
<td>200</td>
<td>Intersections with US-2/US-141/M-95</td>
<td>300</td>
</tr>
<tr>
<td>Other intersections</td>
<td></td>
<td></td>
<td>150</td>
</tr>
</tbody>
</table>

* Spacing for signalized intersections shall also be applied at intersections where MDOT indicates spacing and approach volumes may warrant a signal in the future.

8. Where direct access consistent with the various standards above cannot be achieved, access should be via a shared driveway or service drive. In particular, the Planning Commission may require development of frontage roads, or rear service drives where such facilities can provide access to signalized locations, where service drives may minimize the number of driveways, and as a means to ensure that traffic is able to more efficiently and safely ingress and egress.

9. a. Sharing or joint use of a driveway by two or more property owners shall be encouraged. In cases where access is restricted by the spacing requirements of Section R. 3 above a shared driveway may be the only access design allowed. The shared driveway shall be constructed along the midpoint between the two properties unless a written easement is provided which allows traffic to travel across one parcel to access another, and/or access the public street.
b. In cases where a shared access facility is recommended, but is not yet available, temporary direct access may be permitted, provided the site plan is designed to accommodate the future service drive, and a written agreement is submitted that the temporary access will be removed by the applicant, when the alternative access system becomes available. This may require posting of a performance guarantee to cover the cost of removing the temporary driveway if the applicant or then owner does not remove the temporary driveway once a permanent driveway is established.

10. Frontage roads or service drives (see Figure 1) shall be designed, constructed and maintained in accordance with the following standards:
   a. Location - Frontage roads or service drives shall generally be parallel to the front property line and may be located either in front of, or behind, principal buildings and may be placed in required yards. In considering the most appropriate alignment for a service road, the Planning Commission shall consider the setbacks of existing and/or proposed buildings and anticipated traffic flow for the site.
   b. Alignment - The alignment of the service drive can be refined to meet the needs of the site and anticipated traffic conditions, provided the resulting terminus allows the drive to be extended through the adjacent site(s). This determination may require use of aerial photographs, property line maps, topographic information and other supporting documentation.
   c. Setback - Service drives and frontage roads shall be set back as far as reasonably possible from the intersection of the access driveway with the public street. A minimum of thirty (30) feet shall be maintained between the public street right-of-way and the pavement of the frontage road, with a minimum sixty (60) feet of throat depth provided at the access point. The access point location shall conform with all the applicable standards of this Ordinance.
   d. Access Easement - A frontage road or service drive shall be within an access easement permitting traffic circulation between properties. The easement shall be recorded with the County Register of Deeds. This easement shall be at least forty (40) feet wide. A frontage road or service drive shall have a minimum pavement width of twenty-six (26) feet, measured face to face of curb with an approach width of thirty-six (36) feet at intersections. The frontage road or service drive shall be constructed of a paved surface material that is resistant to erosion and shall meet ________ (city, County Road Commission or MDOT -- depending on what road the service drive parallels) standards for base and thickness of asphalt or concrete, unless the community has more restrictive standards.
e. Snow Storage - A minimum of fifteen (15) feet of snow storage/landscaping area shall be reserved along both sides of the frontage road or service drive.

f. Service Drive Maintenance - No service drive shall be established on existing public right-of-way. The service drive shall be a public street (if dedicated to and accepted by the public), or a private road maintained by the adjoining property owners it serves who shall enter into a formal agreement for the joint maintenance of the service drive. The agreement shall also specify who is responsible for enforcing speed limits, parking and related vehicular activity on the service drive. This agreement shall be approved by the ______ (municipal) attorney and recorded with the deed for each property it serves by the County Register of Deeds. If the service drive is a private road, the local government shall reserve the right to make repairs or improvements to the service drive and charge back the costs directly or by special assessment to the benefiting landowners if they fail to properly maintain a service drive.

g. Landscaping - Landscaping along the service drive shall conform with the requirements of Section ____ (reference applicable landscaping standards). Installation and maintenance of landscaping shall be the responsibility of the developer or a property owners association.

h. Parking Areas - All separate parking areas (i.e. those that do not use joint parking cross-access) shall have no more than one (1) access point or driveway to the service drive.

i. Parking - The service road is intended to be used exclusively for circulation, not as a parking, loading or unloading aisle. Parking shall be prohibited along two-way frontage roads and service drives that are constructed at the minimum width (see B.4. above). One-way roads or two-way roads designed with additional width for parallel parking may be allowed if it can be demonstrated through traffic studies that on-street parking will not significantly affect the capacity, safety or operation of the frontage road or service drive. Perpendicular or angle parking along either side of a designated frontage road or service drive is prohibited. The Planning Commission may require the posting of "no parking" signs along the service road. As a condition to site plan approval, the Planning Commission may permit temporary parking in the easement area where a continuous service road is not yet available, provided that the layout allows removal of the parking in the future to allow extension of the service road. Temporary parking spaces permitted within the service drive shall be in excess of the minimum required under Section ____ , Parking and Loading Standards (insert reference).
j. Directional Signs and Pavement Markings - Pavement markings may be required to help promote safety and efficient circulation. The property owner shall be required to maintain all pavement markings. All directional signs and pavement markings along the service drive shall conform with the current Michigan Manual of Uniform Traffic Control Devices.

k. Assumed Width of Pre-existing Service Drives - Where a service drive in existence prior to the effective date of this provision has no recorded width, the width will be considered to be forty (40) feet for the purposes of establishing setbacks and measured an equal distance from the midpoint of the road surface.

l. Pedestrian and Bicycle Access - Separate, safe access for pedestrians and bicycles shall be provided on a sidewalk or paved path that generally parallels the service drive unless alternate and comparable facilities are approved by the Planning Commission.

m. Number of Lots or Dwellings Served - No more than twenty-five (25) lots or dwelling units may gain access from a service drive to a single public street.

n. Service Drive Signs - All new public and private service drives shall have a designated name on a sign meeting the standards on file in the office of the Zoning Administrator.

o. Pre-existing Conditions - In the case of expansion, alteration or redesign of existing development where it can be demonstrated that pre-existing conditions prohibit installation of a frontage road or service drive in accordance with the aforementioned standards, the Planning Commission shall have the authority to allow and/or require alternative cross access between adjacent parking areas through the interconnection of main circulation aisles. Under these conditions, the aisles serving the parking stalls shall be aligned perpendicularly to the access aisle, as shown in Figure 1c., with islands, curbing and/or signage to further delineate the edges of the route to be used by through traffic.
Figure 1: Frontage Road, Rear Service Drive and Parking Lot Cross Access

a. FRONTAGE ROAD

This distance usually established as a result of analysis of a traffic impact study.

(b) REAR SERVICE DRIVE

This distance usually established as a result of analysis of a traffic impact study.

(c) PARKING LOT CROSS ACCESS (Connected parking lots)
11. Parking Lot Connections or Parking Lot Cross-Access: Where a proposed parking lot is adjacent to an existing parking lot of a similar use, there shall be a vehicular connection between the two parking lots where physically feasible, as determined by the Planning Commission. For developments adjacent to vacant properties, the site shall be designed to provide for a future connection. A written access easement signed by both landowners shall be presented as evidence of the parking lot connection prior to the issuance of any final zoning approval.

12. Access Easements: Shared driveways, cross access driveways, connected parking lots, and service drives shall be recorded as an access easement and shall constitute a covenant running with the land. Operating and maintenance agreements for these facilities should be recorded with the deed. *(Examples of access easements are found in Appendix B of the Michigan Access Management Guidebook.)*

13. Access points shall be located to provide safe sight distance, as determined by the applicable road agency.

14. All access points shall maintain clear vision as illustrated in Figures 2 and 3.

**Figure 2**

CLEAR VISION AT DRIVEWAYS

![Diagram of CLEAR VISION AT DRIVEWAYS](image)
15. Throat width and throat length of driveways shall be as required by the road authority and this Ordinance. The driveway design shall safely accommodate the needs of pedestrians and bicyclists.

16. Grades and drainage:
   a. Driveways shall be constructed such that the grade for the 25 feet nearest the pavement edge or shoulder does not exceed 1.5% (one and one-half foot vertical rise in one-hundred feet of horizontal distance) wherever feasible. Where not feasible, grades shall conform with requirements of the applicable road authority.
   b. Driveways shall be constructed such that drainage from impervious areas located outside of the public right-of-way, which are determined to be in excess of existing drainage from these areas shall not be discharged into the roadway drainage system without the approval of the responsible agency. Storm drains, or culverts, if required shall be of a size adequate to carry the anticipated storm flow and be constructed and installed pursuant to the specifications of the responsible road authority.

17. Directional Signs and Pavement Markings - In order to ensure smooth traffic circulation on the site, direction signs and pavement markings shall be installed at the driveway(s) in a clearly visible location as required by the ________ (name of jurisdiction) as part of the site plan review process and approved by the Michigan Department of
Transportation and __________ County Road Commission (as appropriate), and shall be maintained on a permanent basis by the property owner. Directional signs and pavement markings shall conform to the standards in the Michigan Manual of Uniform Traffic Control Devices.

18. Traffic Signals – Access points on US-2/US-141/M-95 may be required to be signalized in order to provide safe and efficient traffic flow. Any signal shall meet the spacing requirements of the applicable road authority. A development may be responsible for all or part of any right-of-way, design, hardware, and construction costs of a traffic signal if it is determined by the road authority that the signal is warranted by the traffic generated from the development. The procedures for signal installation and the percent of financial participation required of the development in the installation of the signal shall be in accordance with criteria of the road authority with jurisdiction.

19. No driveway shall interfere with municipal facilities such as street lights or traffic signal poles, signs, fire hydrants, cross walks, bus loading zones, utility poles, fire alarm supports, drainage structures, or other necessary street structures. The Zoning Administrator is authorized to order and effect the removal or reconstruction of any driveway which is constructed in conflict with street structures. The cost of reconstructing or relocating any new or proposed such driveways shall be at the expense of the property owner with the problem driveway.

S. Nonconforming Driveways
1. Driveways that do not conform to the regulations in this Section, and were constructed before the effective date of this Section, shall be considered legal nonconforming driveways. Existing driveways previously granted a temporary access permit by MDOT or the County Road Commission are legal nonconforming driveways until such time as the temporary access permit expires.

2. Loss of legal nonconforming status results when a nonconforming driveway ceases to be used for its intended purpose, as shown on the approved site plan, or a plot plan, for a period of twelve (12) months or more. Any reuse of the driveway may only take place after the driveway conforms to all aspects of this Article.

3. Legal nonconforming driveways may remain in use until such time as the use of the driveway or property is changed or expanded in number of vehicle trips per day or in the type of vehicles using the driveway (such as many more trucks) in such a way that impact the design of the driveway. At this time, the driveway shall be required to conform to all aspects of the Ordinance.
4. Driveways that do not conform to the regulations in this Ordinance and have been constructed after adoption of this Ordinance, shall be considered illegal nonconforming driveways.

5. Illegal nonconforming driveways are a violation of this Ordinance. The property owner shall be issued a violation notice which may include closing off the driveway until any nonconforming aspects of the driveway are corrected. Driveways constructed in illegal locations shall be immediately closed upon detection and all evidence of the driveway removed from the right-of-way and site on which it is located. The costs of such removal shall be borne by the property owner.

6. Nothing in this Ordinance shall prohibit the repair, improvement, or modernization of lawful nonconforming driveways, provided it is done consistent with the requirements of this Section.

T. Waivers and Variances of Requirements in Section Two

1. Any applicant for access approval under the provisions of this Section may apply for a waiver of standards in Section R if the applicant cannot meet one or more of the standards according to the procedures provided below:
   a. For waivers on properties involving land uses with less than 500 vehicle trips per day based on rates published in the Trip Generation Manual of the Institute of Transportation Engineers: Where the standards in this Section cannot be met, suitable alternatives, documented by a registered traffic engineer and substantially achieving the intent of the Section may be accepted by the Zoning Administrator, provided that all of the following apply:
      1) The use has insufficient size to meet the dimensional standards.
      2) Adjacent development renders adherence to these standards economically unfeasible.
      3) There is no other reasonable access due to topographic or other considerations.
      4) The standards in this Section shall be applied to the maximum extent feasible.
      5) The responsible road authority agrees a waiver is warranted.
   b. For waivers on properties involving land uses with more than 500 vehicle trips per day based on rates published in the Trip Generation Manual of the Institute of Transportation Engineers: During site plan review the Planning Commission shall have the authority to waive or otherwise modify the standards of Section R following an analysis of suitable alternatives documented by a registered traffic engineer and substantially achieving the intent of this Section, provided all of the following apply:
1) Access via a shared driveway or front or rear service drive is not possible due to the presence of existing buildings or topographic conditions.

2) Roadway improvements (such as the addition of a traffic signal, a center turn lane or bypass lane) will be made to improve overall traffic operations prior to project completion, or occupancy of the building.

3) The use involves the redesign of an existing development or a new use which will generate less traffic than the previous use.

4) The proposed location and design is supported by the County Road Commission and/or the Michigan Department of Transportation, as applicable, as an acceptable design under the circumstances.

2. Variance Standards: The following standards shall apply when the Board of Appeals considers a request for a variance from the standards of this Section.

   a. The granting of a variance shall not be considered until a waiver under Section T 1. or 2. above has been considered and rejected.

   b. Applicants for a variance must provide proof of practical difficulties unique to the parcel (such as wetlands, steep slopes, an odd parcel shape or narrow frontage, or location relative to other buildings, driveways or an intersection or interchange) that make strict application of the provisions of this Section impractical. This shall include proof that:

      1) indirect or restricted access cannot be obtained; and,
      2) no reasonable engineering or construction solution can be applied to mitigate the condition; and,
      3) no reasonable alternative access is available from a road with a lower functional classification than the primary road; and,
      4) without the variance, there is no reasonable access to the site and the responsible road authority agrees.

   c. The Board of Appeals shall make a finding that the applicant for a variance met their burden of proof above, that a variance is consistent with the intent and purpose of this Section, and is the minimum necessary to provide reasonable access.

   d. Under no circumstances shall a variance be granted unless not granting the variance would deny all reasonable access, endanger public health, welfare or safety, or cause an unnecessary hardship on the applicant. No variance shall be granted where such hardship is self-created.

SECTION THREE: TRAFFIC IMPACT STUDY

A. If the proposed land use exceeds the traffic generation thresholds below, then the Zoning Administrator shall require submittal of a traffic impact study at the expense of the applicant, as described below prior to consideration of the application or site plan by either the Zoning Administrator or the Planning Commission. At their discretion, the Planning Commission may accept a
traffic impact study prepared for another public agency. A traffic impact study shall be provided for the following developments unless waived by the Planning Commission following consultation with the Michigan Dept. of Transportation or County Road Commission, as applicable:

1. For any residential development of more than twenty (20) dwelling units, or any office, commercial, industrial or mixed use development, with a building over 50,000 square feet, or

2. When permitted uses could generate either a thirty percent (30%) increase in average daily traffic, or at least one hundred (100) directional trips during the peak hour of the traffic generator or the peak hour on the adjacent streets, or over seven hundred fifty (750) trips in an average day.

3. Such other development that may pose traffic problems in the opinion of the Planning Commission.

B. At a minimum the traffic impact study shall be in accordance with accepted principles as described in the handbook Evaluating Traffic Impact Studies, a Recommended Practice for Michigan, developed by the MDOT and other Michigan transportation agencies and contain the following:

1. A narrative summary including the applicant and all project owners, the project name, a location map, size and type of development, project phasing, analysis of existing traffic conditions and/or site restrictions using current data transportation system inventory, peak hour volumes at present and projected, number of lanes, roadway cross section, intersection traffic, signal progression, and related information on present and future conditions. The capacity analysis software should be the same for each project, such as using HCS 2000 or a later version.

2. Projected trip generation at the subject site or along the subject service drive, if any, based on the most recent edition of the Institute of Transportation Engineers Trip Generation manual. The _______ (name of community) may approve use of other trip generation data if based on recent studies of at least three (3) similar uses within similar locations in Michigan.

3. Illustrations of current and projected turning movements at access points. Include identification of the impact of the development and its proposed access on the operation of the abutting streets. Capacity analysis shall be completed based on the most recent version of the Highway Capacity Manual published by the Transportation Research Board, and shall be provided in an appendix to the traffic impact study.

4. Description of the internal vehicular circulation and parking system for passenger vehicles and delivery trucks, as well as the circulation system for pedestrians, bicycles and transit users.
5. Justification of need, including statements describing how any additional access (more than one driveway location) will improve safety on the site and will be consistent with the US-2/US-141/M-95 Access Management Action Plan and the Community or Comprehensive Master Plan, and will not reduce capacity or traffic operations along the roadway.

6. Qualifications and documented experience of the author of the Traffic Impact Study, describing experience in preparing traffic impact studies in Michigan. The preparer shall be either a registered traffic engineer (P.E.) or transportation planner with at least five (5) years of experience preparing traffic impact studies in Michigan. If the traffic impact study involves geometric design, the study shall be prepared or supervised by a registered engineer with a strong background in traffic engineering.

C. The ________________ (name of jurisdiction) may utilize its own traffic consultant to review the applicant’s traffic impact study, with the cost of the review being borne by the applicant per Section One.
SECTION II. AMENDMENTS TO ARTICLE _____: DEFINITIONS

SECTION 2.02: DEFINITIONS

Access: A way or means of approach to provide vehicular or pedestrian entrance or exit to a property from an abutting property or a public roadway.

Access Management: The process of providing and managing reasonable access to land development while preserving the flow of traffic in terms of safety, capacity, and speed on the abutting roadway system.

Access Point: a) The connection of a driveway at the right-of-way line to a road. b) A new road, driveway, shared access or service drive.

County Primary shall include the following roads under the jurisdiction of the Dickinson County Road Commission: ______________ (insert road names as appropriate)

Driveway: Any entrance or exit used by vehicular traffic to or from land or buildings abutting a road.

Driveway Offset: The distance between the centerline of two driveways on opposite sides of an undivided roadway.

Driveway, Shared: A driveway connecting two or more contiguous properties to the public road system.

Frontage Road or Front Service Drive: A local street/road or private road typically located in front of principal buildings and parallel to an arterial for service to abutting properties for the purpose of controlling access to the arterial.

Overlay Zone or Overlay District: A zoning district that encompasses one or more underlying zones and that imposes additional requirements beyond those required for the underlying zone.

Rear Service Drive: A local street/road or private road typically located behind principal buildings and parallel to an arterial for service to abutting properties for the purpose of controlling access to the arterial.

Sight Distance: The distance of unobstructed view for the driver of a vehicle, as measured along the normal travel path of a roadway to a specified height above the roadway.

Throat Length: The distance parallel to the centerline of a driveway to the first on-site location at which a driver can make a right-turn or a left-turn. On
roadways with curb and gutter, the throat length shall be measured from the face of the curb. On roadways without a curb and gutter, the throat length shall be measured from the edge of the paved shoulder.

**Throat Width:** -- The distance edge-to-edge of a driveway measured at the right-of-way line.

**Trip Generation:** The estimated total number of vehicle trip ends produced by a specific land use or activity. A trip end is the total number of trips entering or leaving a specific land use or site over a designated period of time. Trip generation is estimated through the use of trip rates that are based upon the type and intensity of development.

**Underlying District:** The base zone below an overlay zone, that establishes the fundamental permitted uses, densities and dimensional regulations applicable to lands subject to a zoning ordinance.

SECTION III. Severability.

If any section, clause, or provision of this Amendatory Ordinance were declared unconstitutional or otherwise invalid by a court of competent jurisdiction, said declaration shall not affect the remainder of the Ordinance. The ______ (insert Township Board or City Council) hereby declares that it would have passed this Ordinance and each part, section, subsection, phrase, sentence and clause irrespective of the fact that any one or more parts, sections, subsections, phrases, sentences or clauses be declared invalid.

SECTION IV. Effective Date.

This Amendatory Ordinance shall become effective thirty (30) days after a notice of adoption has been published in a newspaper of general circulation within the community.

____________________________________ By:

____________________________________ By:

______________________________ By:

Clerk
APPENDIX C

Sample Master Plan Amendment
Appendices
September 30, 2005

Sample Master Plan Amendment


US-2/US-141/M-95 Corridor
Our community participated with five other jurisdictions, as well as the Dickinson County Area Partnership, the Dickinson County Planning Commission, the Michigan Department of Transportation (MDOT), the Dickinson County Road Commission and other interested parties on a project in 2004 and 2005 to jointly prepare the US-2/US-141/M-95 Access Management Action Plan. That Plan sets forth an analysis of beneficial safety improvements along the US-2/US-141/M-95 corridor and identifies proposed driveway closures, consolidations, and alternative access options. Those elements of the US-2/US-141/M-95 Access Management Action Plan that apply within this jurisdiction are hereby adopted by reference as the guide for future corridor and access management improvements within this jurisdiction.

In order to implement the US-2/US-141/M-95 Access Management Action Plan and the Memorandum of Understanding all the participating jurisdictions signed to be a part of the project leading to the creation of the US-2/US-141/M-95 Access Management Action Plan, the Zoning Ordinance of this jurisdiction shall be amended to reflect the uniform approach to access management advocated by the Plan and being adopted in each of the six jurisdictions that helped to create the Plan. Those zoning amendments are based on the model access management ordinance sanctioned and promoted by the Michigan Department of Transportation in the Access Management Guidebook published by MDOT in 2001.

In addition, implementation of the recommendations in the US-2/US-141/M-95 Access Management Action Plan will be further facilitated by active participation by this jurisdiction in future joint site plan review meetings as they relate to a particular site plan pending in our community or an adjoining one. These meetings will involve review of access management issues and corridor improvement issues related to a particular site plan. Such joint meetings will include representatives of our community, MDOT, Dickinson County, and other corridor communities, as pertinent.

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