



M-55 Access Management Plan

Prepared for:

Roscommon Township
Denton Township
Northeast Michigan Council
Of Governments
Michigan Department of Transportation
Roscommon County Road Commission

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September 2006

Project No: 54701301

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M-55 Access Management Plan

Acknowledgements

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- Denton Township
- Roscommon Township
- Northeast Michigan Council of Governments (NEMCOG)
- MDOT – North Region
- MDOT – Grayling TSC
- Roscommon County Road Commission

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The Advisory Committee would like to thank the many interested citizens, landowners, public officials, and agency staff that provided input at the public open house meetings and advisory committee meetings.

September 2006

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Executive Summary

The M-55 Access Management Plan area encompasses a ten-mile section of largely commercially developed corridor. Its boundaries are from US-127 at the west end to the eastern boundary of Denton Township (Roscommon Road) on the east end. This long corridor is experiencing significant congestion and crash issues in its developed sections, especially during the peak summer months when Houghton Lake related activities are at their highest. Those traffic issues are due largely to past heavy commercial development with little management of access. Towards the east end, the corridor is emerging and will likely come under increasing development pressure in the coming years as much of the corridor is zoned for commercial use.

Both Roscommon Township and Denton Township recognize that the preparation and implementation of an access management plan will help alleviate a portion of the existing traffic congestion on the developed portions of this key corridor, while allowing for the more effective accommodation of traffic generated by future development the undeveloped sections towards the east end.

Access Management Tools and Benefits

Access management is an effort to maintain efficient traffic flow, preserve the roadway's capacity, and reduce the frequency and severity of crashes while maintaining reasonable access to land uses. This can be accomplished through careful placement (or relocation) of access points to reduce conflicts with traffic using other access points and traffic flowing through intersections. Access management usually involves tools to space access points or restrict certain turning movements. Some of these tools are:

- proper spacing of access points along the same side of the street,
- alignment or spacing from access points on the opposite side of the street,
- placing driveways a sufficient distance from intersections to minimize impact to intersection operations,
- geometric design to restrict certain turning movements (usually left turns),
- providing left-turn lanes on the main roadway where appropriate;
- location of traffic signals, and
- shared access systems (connections between land uses, shared driveways, frontage roads or rear service drives).

Access management can provide several benefits to motorists, communities and land uses along the M-55 corridor. Among the benefits, based on experience and studies for similar corridors, are the following:

- reduce crashes and crash potential;
- preserve or increase roadway capacity and the useful life of roads;
- decrease travel time and congestion;
- improve access to and from properties;
- ensure reasonable access to properties (though not necessarily direct access nor the number of driveways preferred by the landowner/developer);
- coordinate land use and transportation decisions;

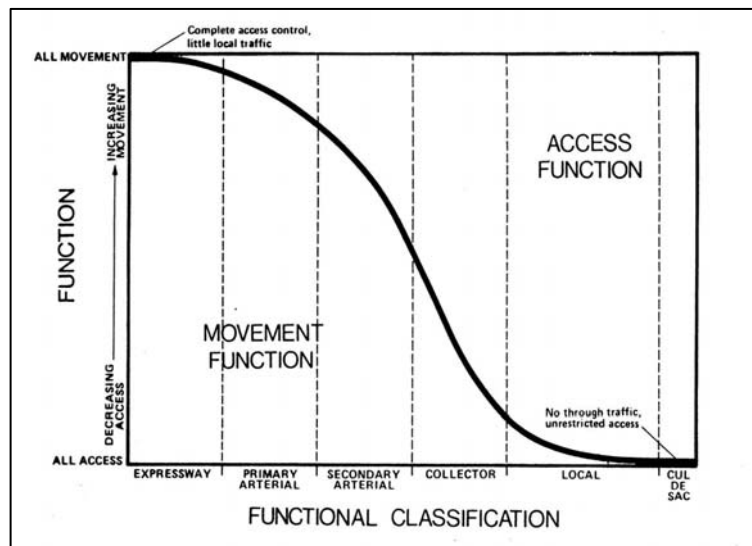
- improve environment for pedestrians and bicyclists (less driveways to cross);
- improve air quality; and
- maintain travel efficiency and related economic prosperity.

Why Access Management?

Successful implementation of the recommendations in the M-55 Access Management Plan will help the two Townships, Northeast Michigan Council of Governments (NEMCOG), and MDOT accommodate planned development along the corridor while reducing the amount of negative impacts on traffic flow. The Plan calls for reducing the number of points where turning movements occur that create traffic conflicts and increase crash potential. Numerous studies nationwide have shown that a proliferation of driveways or an uncontrolled driveway environment increases the number of crashes, can severely reduce capacity of the roadway and may create a need for costly improvements in the future. Areas where access management plans have been adopted and followed by the communities and road agencies have resulted in 25-50 percent reductions in access-related crashes.

The Plan includes specific recommendations for individual properties as well as general recommendations that apply to a number of areas along the corridors. While some of the recommendations can be directly implemented, many are long-term initiatives that will require an on-going partnership and commitment between the two townships, NEMCOG, and MDOT. This requires the two communities' planning commissions, elected bodies, and zoning board of appeals members to be aware of the benefits of access management and their role in the Plan's implementation.

The model M-55 overlay zoning district is expected to be placed over the existing zoning regulations for all parcels with frontage along the corridor or those within 120 feet of the centerline of those corridor roadways. Many of the existing sites along the more developed sections will not be able to



meet all of the access management standards, particularly older sites. In order to address these situations the ordinance provides the authority to modify the standards on a case-by-case basis. The model ordinance provides planning commissions with the authority to modify the standards during site plan review, provided the intent of the standards is being met to the maximum extent practical on the site. The ordinance also requires traffic impact studies to be performed for larger developments that have the potential to generate significant volumes of traffic. These studies would evaluate the impact that a proposed development will have on the road system and identify mitigation to offset the impact.

Plan Development

The M-55 Access Management Plan and ordinance were prepared under the direction of a Advisory Committee comprised of representatives from Roscommon Township, Denton Township, NEMCOG, MDOT, and the Roscommon County Road Commission. Public involvement included two public workshops/open house meetings. Comments and recommendations by the public, local officials and the MDOT staff at the workshops were considered and incorporated into the final plan.

While individual land owners may see the regulations as restricting access to their property, a well-managed access system will improve access to properties and maintain or even improve travel efficiency, thereby enhancing economic prosperity for local businesses. A strong access management program also has the benefit of closely coordinating land use and transportation decisions to improve the overall quality of life in the community.

1. INTRODUCTION

M-55 has historically served as the key transportation corridor for moving traffic and goods through the central part of the Houghton Lake area. It has long served as the main commercial spine within the overall area, and provides a vital connection between US-127 and I-75. Even with its past significant adjacent development, M-55 is still experiencing increasing development pressure as the two communities grow. And M-55 to the east is expected to come under increasing commercial development pressure and will need to plan for the traffic impacts that always come with that type of development.

Roscommon Township, Denton Township, NEMCOG, and the Michigan Department of Transportation (MDOT) have recognized that there are significant congestion and safety issues on the highly developed portions of the M-55 corridor that can be addressed



in part by retrofitting the existing poor commercial access system. It's also recognized that those similar conditions need to be avoided in the emerging section of M-55 east of M-18 (north). To that end, access management is recognized as a key tool to improve operating conditions and preserve the public dollars spent in the past. The study area is illustrated on Figure 1.

The primary goal behind this access management plan is to improve traffic operations and reduce crash potential along the M-55 corridor while retaining reasonable access to existing and future developments. Information provided by NEMCOG indicates that there are approximately 670 access points within this 10-mile study area, or approximately 67 per mile on average. For a corridor with the operational characteristics such as M-55 in this area, approximately 30-40 access points per mile (15-20 each side, aligned) would be considered the upper limit for acceptable access in a developing corridor. Clearly there is cause for concern.

Access management will preserve the road's capacity through limiting the number of access points along with careful placement and spacing of new or retrofit access points. The resulting improvements can be significant and at a relatively low cost in comparison to roadway reconstruction.

The questions this access management plan will help address include:

- ***What access-related improvements should be made to existing uses to reduce crash potential and enhance efficiency of the M-55 corridor?***

- figure 1

- ***How can land use/site plan decisions support the recommendations and enhance the effectiveness of this access management plan?***
- ***What access guidelines should be adopted to help maintain safety and efficiency while still providing reasonable access to adjacent land uses?***

Preparation of this Plan

To assist in the development of this plan an Advisory Committee was formed with representatives from the NEMCOG, Denton Township, Roscommon Township, MDOT, and the Roscommon County Road Commission (RCRC). The Advisory Committee met regularly to review the issues, provide suggestions on draft recommendations and assist in obtaining comments from the public and local officials.

This plan was developed over eight months through a series of meetings with the Advisory Committee. The process also included two public workshops/open house meetings held at the Road Commission offices and Roscommon Township hall – the first held on April 12, 2006 and the latter on August 3, 2006. Both of these open house meetings provided a presentation on the need for, and benefits of, access management in this study area. Large graphics were on display illustrating the preliminary access management recommendations. Comments and recommendations by the public, local officials and the MDOT staff were considered and incorporated into the final recommendations.

Role of Access Management

As noted, the goal behind this access management plan is to improve traffic operations and safety along the existing M-55 corridor while retaining reasonable access to existing and future development along the roadway. Access management, in this situation, involves improving upon and preservation of the road’s capacity through reducing or limiting the number of access points, careful placement and spacing of access points, and small scale road improvements to separate turning movements from through traffic.

The terms “access” and “access point” are used frequently throughout this document. Those terms refer to commercial driveways (ie. retail, office, industrial, etc.) and platted roadways or private roads but do not refer to driveways to individual single family homes, unless otherwise noted.

There are many short and long term benefits to this program, some of which are listed below:

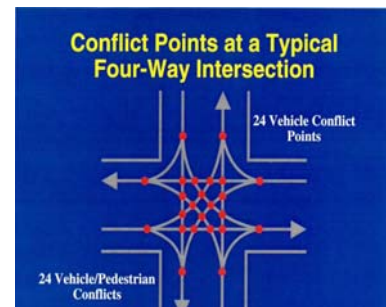
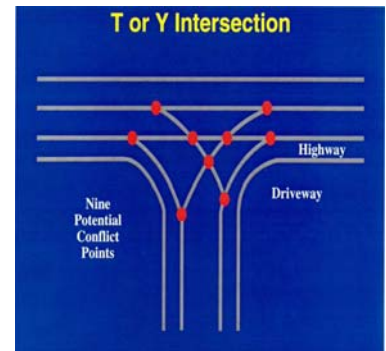
- Gives MDOT and the two townships the latitude to make future improvements with the least disruption on homeowners, businesses and the anticipated development pattern along the roadway.
- Preserves or improves the capacity of M-55 by locating/relocating access points where they will have the least disruption on through traffic flow.
- Reduces crash potential through careful placement and spacing of access points.
- Provides landowners with reasonable access to their property from M-55, though to meet the benefits above, in some cases the number of access points will be fewer

or more indirect than previously allowed.

- Improves traffic operations and safety that will benefit everyone. Access management and other improvements along the plan corridors require a partnership between the Townships, NEMCOG, MDOT, and the RCRC. One way to promote this collaborative approach is through improved coordination and communication between the MDOT and the two communities when reviewing development proposals.
- Provides general background and information on the benefits of access management to assist Roscommon and Denton Townships' officials.

Realization of the benefits listed above can be accomplished through a variety of changes, both physical and regulatory. Key recommendations of this access management plan are listed below, and are explained in more detail in the subsequent chapters.

- Identify changes to existing access points to improve safety and efficiency of the roadway corridors. Such improvements include closure or consolidation of numerous existing access points to improve spacing. Specific recommendations are illustrated on a series of drawings for sections of the corridors.
- Gradual replacement of individual direct access points with access through rear service drives, cross access between parking areas, or shared driveways.
- Access for new development through service drives. The plan illustrates options, since the preferred location and alignment will depend upon the intensity of future development proposals. Generally, the deepest separation from the roadway is desired, but in some cases, a frontage road may be the most practical design.
- Establish access standards to help maintain safety and efficiency while still providing reasonable access to adjacent land uses. These standards should be applied to both retrofit existing sites and to new developments. This can be done through consideration of access issues as the Townships review development proposals, through improved coordination with MDOT, and through adoption of access management standards into the two zoning ordinances.



Each new driveway adds to the number of conflict points along a roadway at which a traffic crash could occur.

(Source: MDOT "Improving Driveways and Access Management in Michigan," 1996)

Access Management – What is it?

Access management is a process that regulates access to land uses in order to help preserve the flow of traffic on the road system by reducing traffic conflicts created by vehicle turning movements. Numerous studies nationwide have shown that a proliferation of driveways or an uncontrolled driveway environment increases the number of crashes, severely reduces capacity of the roadway and may create a need for costly improvements

in the future. Areas where access management plans have been adopted and implemented by the communities and road agencies have resulted in 25-50 percent reductions in access-related crashes. Further statistical data is available in an MDOT access management publication called “Improving Driveway & Access Management in Michigan.”

Access management can provide several benefits to motorists, communities and land uses along the M-55 corridor. Among the benefits, based on experience along other corridors and numerous studies are the following:

- Preserve roadway capacity and the useful life of roads;
- Reduce crashes and crash potential;
- Coordinate land use and transportation decisions;
- Improve access to properties;
- Decrease travel time and congestion;
- Improve air quality; and
- Maintain travel efficiency and related economic prosperity.



In addition to those measurable benefits, the public also benefits due to the reduction in roadway improvement costs and reduced environmental impacts. Land owners and developers benefit from the long term enhancement of property values and knowing up front that there are established access criteria thereby reducing the need for redesign and the likelihood of a lengthy site approval process.

“Numerous studies nationwide have shown that a proliferation of driveways or an uncontrolled driveway environment increases the number of crashes, can severely reduce capacity of the roadway and may create a need for costly improvements in the future.”

Successful implementation of the plan’s recommendations will require continued coordination between the two communities and MDOT. This document includes a draft corridor overlay zoning district that the Townships have refined further for adoption.

Perhaps the most important result that comes out of this process will not be the access management plan itself. It may be the further recognition that good, timely communication between the two Townships and MDOT is the key to a successful plan that will be implemented.

The following chapters discuss in detail the benefits and background of access management and the specific recommendations for this ten mile study corridor.

2. EXISTING ACCESS and LAND USE CONDITIONS

The primary initial task when developing an access management plan is to define the current access conditions and land use plans along the study area corridor. This section of the report outlines those current traffic and access conditions and land use issues. A brief description of the M-55 design and traffic characteristics within the study area follows.

Existing Roadway and Access Characteristics

There is a wide variety of geometric, traffic, and access conditions along the M-55 study area corridor. Typical cross sections range from two to five lanes, with a four-lane section being the predominant configuration. There is a significant variation in daily traffic volumes between various sections of the corridor, and a significant difference between summer and non-summer volumes.

There are typically two or three general development characteristics that need to be taken into account for most access management corridors. In general, there are areas that are currently undeveloped (and may stay that way for some time), areas that are relatively undeveloped but experiencing growth pressures, and areas that are already mostly or fully developed. The latter is easily the most predominant scenario for this M-55 study area.

There are approximately 670 access points within this 10-mile study area, or approximately 67 per mile on average, with some sections much higher. For a corridor with the operational characteristics such as M-55 in this area, approximately 30-40 access points per mile (15-20 each side, aligned) would be considered the upper limit for acceptable access in a developing corridor.

Subsequent chapters will outline proposed improvements and standards that the two communities and road agencies can use to improve upon or retain an efficient access system. In order to define those proposed improvements, field surveys were completed to identify existing locations or areas that have poor or substandard access conditions. These are outlined below, along with current roadway characteristics, in a series of corridor subareas.

It should be noted that this corridor is unique from the standpoint that the older platted street systems that occur in many areas on the north (lake) side of M-55 create their own poor “access” spacing. Many of those are spaced less than 200 feet apart and therefore wouldn’t meet current MDOT standards. However, the focus of the existing conditions review, and subsequent plan recommendations, will be on commercial driveways, not public streets.

Roscommon Township - US-127 to Knapp Road

Roadway Characteristics

This western section of the study area is the gateway to the corridor from US-127. As opposed to the rest of the study area, the commercial uses at the far west end also serve patrons coming to and from US-127 – traffic that may not travel any further east on M-55. The typical cross section throughout this subarea is four lanes, not including the five-lane sections on both approaches to the M-55/Old 27 and M-55/Loxley intersections and short right-turn deceleration lanes provided at a few locations.

Traffic counts taken in 2005 indicate that summer weekday daily traffic volumes in this subarea range from approximately 13,800 vehicles near US-127 down to 9,900 just west of Old 27. Non-summer weekday volumes are approximately 9,500 – 10,000 vehicles on all subarea sections. The speed limit is 45 miles per hour throughout this subarea. The intersections that are controlled by a traffic signal are the M-55 intersections with Old 27 and Loxley Road.

Existing Access Conditions

This section of M-55 has a significant portion of which is considered a retrofit corridor in terms of access management. It is relatively developed, with few undeveloped parcels within the subarea. The existing access system is similar to many other older high volume/high development corridors around the state where sites were approved and constructed in the past without the current knowledge of the detrimental effects of poor access management. Although there are examples of good recent site plan/access decisions (eg. service drive at Citgo and Burger King), there are many examples of substandard (by today's standards) access/driveway spacing, design, and numbers.

Existing access management deficiencies on the US-127-to-Loxley subarea include the following:

- *Substandard driveway storage*; many of the commercial driveways along M-55 in this area have little or no internal storage (distance from M-55 to first internal cross aisle or parking) that provides more efficient ingress/egress operations.
- *Poor driveway spacing and/or unnecessary second drive*; too numerous to mention - many instances of driveways spaced too close together or sites that have more than one driveway that do not warrant a second (or more) access.
- *No internal cross access/service drive connections*; lack of internal connections between adjacent uses (either large or small businesses) can significantly affect M-55.



- *Substandard driveway offset*, this currently exists at several locations, although it would be difficult in the past to align or offset driveways properly given that there are so many in some areas, particularly near US-127.
- *Substandard driveway width*. Several locations either on M-55 or on side streets have older, very wide driveway openings that can lead to driver confusion, multiple unexpected access movements.
- *Lack of a center turn lane*. Although provided at the two major intersections, lack of a center turn lane on sections like the one just east of US-127 creates problems with both capacity and safety.

Roscommon Township – Knapp Road to Townline Road

Roadway Characteristics

M-55 has a four-lane cross section between Knapp Road and Townline Road, with separate right turn deceleration lanes or tapers at a few locations. 2005 traffic counts indicate that daily weekday volumes during the summer are in the 15,000 to 17,000 vehicle range, with volumes during other periods dropping to the 11,000 to 12,000 vehicle range.

As with most of the study area, the speed limit on M-55 in this subarea is 45 miles per hour. Traffic signals on this section are limited to a standard signal at M-55/Townline and a flashing beacon at the M-55/Federal Avenue (C.R. 305) intersection.

Existing Access Conditions

The frontage along this section of M-55 is very developed – mostly residential along the north (lake) side and mostly older small commercial uses along the south side. Access points to both sides are numerous. By in large it is considered predominantly as a retrofit corridor as there are many corrections to the existing access system that will need to be made over the coming years when opportunities arise, particularly along the commercially-dominated south side. There are many examples of older access points with deficient design/location attributes.

- *Poor intersection-to-driveway spacing*; there are examples of poor spacing between an intersection and an adjacent commercial driveway at almost every intersection along the corridor, an issue that affects the operational safety of the adjacent intersection.



- *Poor driveway spacing*; many examples throughout this subarea of the corridor, particularly on the south side between Stone School Road and Tower Hill Road
- *Unnecessary second drives*; same area as those noted above and several other locations.

- *Substandard driveway design/storage*; wide open commercial driveways, like the one on the southwest quadrant of the M-55/Townline Road intersection (on Townline into the golf course), too little driveway storage (distance from roadway to first internal parking/circulation) at numerous locations, typically older small commercial sites.
- *No internal cross access/service drive connections*; lack of internal connections between adjacent commercial uses –for example the hardware store and restaurant just northwest of Maple Street.
- *Substandard/poor driveway offsets*; this currently exists at several locations, including the commercial/recreational driveway just offset from Capital Street.

Denton Township – Townline Road to Home Depot/Wal-Mart

Roadway Characteristics

This section of M-55 has a four-lane cross section with a center left turn lane added at its intersections with Reserve Road (C.R. 401) and the Wal-Mart main driveway. 24-hour weekday traffic counts indicate that M-55 in this area carries approximately 17,000 to 19,500 vehicles on a weekday during summer months, and approximately 12,500 to 16,500 vehicles during non-summer months.

In addition to Townline Road, the M-55 intersections with Reserve Road and Wal-Mart drive are currently the only signalized locations in this part of the study area. At this time all other side roads are stop sign controlled. The speed limit is 45 miles per hour throughout this corridor section.

There are several small sections that had relatively high access-related crash rates over the past five years; the section near Maple Bluffs Avenue, the section between Beverly and Stafford Drives, and the section between the two Wal-Mart drives.

Existing Access Conditions

For the most part the M-55 frontage within the Townline-to-Wal-Mart segment is very developed. A mixture of small and large commercial development occurs throughout this section on both sides of M-55 that contribute to the overall poor access system.

The Township has started the development of internal service drive systems at a couple of the larger commercial developments on the south side, although many separate front lots don't yet connect to the newer internal drive. A connection from the existing Wal-Mart front service drive to the proposed/planned Lowe's site to the east is planned to be extended as that site develops. Existing access management deficiencies include the following:



- *Poor driveway spacing*; many locations throughout subarea, worst section is between Beverly Drive and Kimberly Drive.
- *Substandard/poor driveway offsets*; poor offsets exist at several locations in subarea, including two at and adjacent to the M-55/Chippewa intersection.
- *Unnecessary second drives*; several of these exist at small commercial sites, particularly in the Beverly-to-Kimberly section noted above where the small commercial sites do not warrant the need for two driveways, especially as one or both help create poor driveway offset issues.
- *Poor intersection-to-driveway spacing*; again, there are examples of poor spacing between an intersection and an adjacent commercial driveway at most of the intersections along this subarea, an issue that affects the operational safety of those adjacent intersections.
- *No internal cross access/service drive connections*; like other sections/subareas, lack of internal connections between adjacent commercial uses – examples include no internal interconnection between the storage and other frontage business sites and the Wal-Mart site.
- *Lack of a center turn lane*. A center turn lane is provided at the Village Square and Home Depot/Wal-Mart sites, but the heavily commercialized area between those two sections is also in need of a center turn lane, especially given the crash history.

Denton Township – Home Depot/Wal-Mart to Roscommon Road

Roadway Characteristics

This eastern section of the overall M-55 study area has cross sections that vary from four lanes up to M-18 (north) and two lanes east of that point. 2005 24-hour traffic counts indicate that this section of M-55 experiences volumes in the 15,000-to-20,000 vehicle range in the summer and in the 14,000 to 15,000 vehicle range during other months.

With the exception of the signalized M-55/M-18/Gladwin intersection, all other intersections with M-55 are stop sign controlled in this subarea. Speed limits range from 45 miles per hour within the Prudenville area up to 55 miles per hour on the section near Roscommon Road.

There are three short sections that have had a higher than average access-related crash history over the last few years. Two of those three are on either side of the M-55/Gladwin intersection, and the other is located just northeast of Oakdale Drive.

Existing Access Conditions

The level of development, and related existing access conditions, vary widely within this subarea. Like much of the study area to the west, older small commercial uses in the Prudenville area were developed without access management guidelines resulting in poor conditions. However, in the developing/emerging section east of M-18 (north), there are few access deficiencies due largely to less commercial development. A few of the existing access deficiencies are noted below.

- *Substandard driveway/street storage*; many of the commercial driveways, and small public streets along M-55 in the Prudenville area have little or no internal storage (distance from M-55 to first internal cross aisle or parking) that provides more efficient ingress/egress operations.
- *Poor driveway spacing and/or unnecessary second drive*; Like other subareas discussed, many instances of driveways spaced too close together or sites that have more than one driveway that do not warrant a second (or more) access.
- *No internal cross access/service drive connections*; lack of internal connections between adjacent uses (either large or small businesses) can significantly affect the safety and efficiency of M-55.
- *Substandard driveway offsets*; several locations within the western portion of this subarea.
- *Substandard driveway width*; several locations either on M-55 or on side streets have older, very wide driveway openings that can lead to driver confusion, multiple unexpected access movements – location on 13th Street is one.
- *Lack of a center turn lane*; lack of a center turn lane in the Prudenville area contributes to the higher crash rates discussed earlier.
- *Parking Deficiencies*; uncontrolled direct access to 90-degree parking spaces affects safety of public streets - example is existing parking on the west side of Lake Street



Land Use Characteristics

Introduction

The M-55 corridor, between U.S. 127 and South Roscommon Road, provides access to a variety of land uses and thus has a number of associated access management issues. The impacts that individual land uses have on a corridor are usually directly related to that use's level of intensity. The intensity of a land use is a function of the traffic that a use generates. For example, a single-family home may generate only four car trips per day, where a commercial use located on the same street may generate as many as fifty or more trips in an hour. Other factors contributing to land use intensity include noise and air quality, light, and other physical nuisances that go beyond the limits of the property. Intensive uses, such as commercial and industrial uses, generally produce greater levels of off-site effects and nuisances. In order to control the level of intensity and nuisances, communities should ensure that future land use along major corridors such as M-55 adequately considers the function of the roadway.

Land use also has a significant effect on the overall character of a corridor. Traveling down any roadway can give either a sense of calm, such as open agricultural fields or quiet residential areas; or it can provide a source of tension, such as noisy industrial areas with heavy truck traffic, or commercial districts with busy traffic moving all around us. Even though we depend on our roadways to provide safe and efficient travel, their visual quality can also significantly shape our impressions of the entire area.

The M-55 study area is located in an area that has experienced commercial, office and residential resort (cottage) growth during the past 10-20 years. This growth has contributed to traffic congestion along the entire corridor. However, the area near the M-55/M-18 (Gladwin) intersection has tended to experience the most traffic congestion within the corridor.

Existing land uses along the corridor vary significantly from residential areas to commercial and office centers. The size of uses and lots also varies along the corridor. A large site includes a light industrial area and light commercial area at Old 27 and Knapp Road, contrasted by small cottages and offices scattered along most segments of the corridor.

Overall, the corridor represents multiple land uses. In order to gain a comprehensive understanding of the corridor's development characteristics, as well as the corresponding traffic issues, a survey of M-55 was conducted early in the process. The survey consisted of an existing land use and access management issues inventory. The following is a geographically oriented (from west to east along M-55 from U.S. 127 to Roscommon Road) discussion about the corridor's land uses characteristics that affect access management.

- **U.S. 127 to Townline Road:** U.S. 127 is the main north-south freeway that is located closest to the Houghton Lake area. The highway serves as a physical divider between Lake Township and Roscommon Township. Hotels/motels, fast food restaurants and gas stations are the primary land uses on M-55 near the U.S. 127 interchange. Other uses and points of note along this portion of the corridor include a state police post, Houghton Lake Airport, golf course, and Roscommon Township Hall.

A large wetland area exists on the south side of M-55 between Old 27 and the access road to Heights View Drive. To the north along this same section, the shoreline for Houghton Lake is in proximity to M-55 and restricts development. Aside from a large retail pad and now vacant building material supply store, land is largely vacant between Heights View Drive and Loxley Road. As this area develops with commercial uses (per the existing and future land use map) it will be important to incorporate good access principals and coordinate access between properties. Houghton Heights is located near Loxley Road and M-55, and mainly includes commercial and small office uses.



Residential housing and cottage development

Beyond Knapp Road, established residential properties exist on the north side of M-55 in the form of small cottage-style housing. Commercial uses exist along the south side. Some of the existing commercial and residential sites are vacant, which provides access improvement opportunities upon redevelopment. This redevelopment scenario involving smaller and fragmented land exists for the majority of the corridor to the Roscommon Township and Denton Township boundary at Townline Road, with the exception of a large commercial-zoned area on the south side of M-55 between Crestview Road and Townline Road.

- Townline Road to M-18:** Many small commercial uses exist with small residential lots behind that extend north to the shoreline on the north side of M-55 between Townline Road and Devonshire Road. Larger commercial uses appear to be the development trend on the south side of M-55 within this same area. A public school campus and public library, located on the south side of M-55 near Townline Road, has two access points that become heavily used at school start and end times. The main center of Houghton Lake is located near the M-55 and Reserve Road intersection. Near this intersection, vacant commercial property exists to the east of the Village Square Shopping Center development. When this property is developed, future access to this area will need to include shared access, cross-access with the shopping center, and plan to take one access from Deer Track Road.

Many of the smaller commercial and office developments on the south side of M-55 contain shallow front setbacks, narrow lot frontages, and multiple undefined points of access. Most parking is located in front yards and includes minimal site landscaping. Redevelopment improvements should focus on providing identifiable and limited access points. Site landscaping could greatly assist in improving site access and aesthetic appearance. A large wetland area exists on the north side of M-55 east of Chippewa Drive. A large commercial development is located across from this area. Future commercial development east of the existing site should include cross-access between properties, shared access opportunities, and meet current access spacing criteria.

A mix of commercial, small resort businesses and office uses are located near the center of Prudenville at the



Typical commercial site with narrow frontage, shallow setback, parking in front



Looking south on M-18 at M-55/M-18 intersection

intersection of M-55 and M-18/Baldwin. The uses that surround this intersection are of a fairly intense nature, and included a commercial center, restaurant and large hardware store. The small, narrow lots create a large number of closely spaced driveways with little opportunity for service roads. Consolidation of driveways and sharing of access should be a high priority in this area.

- **M-18/Gladwin to Roscommon Road:** The village mixed use zoning extends east along M-55/M-18 to the separation of the two state highways. A “pocket” of lakefront residential zoning is designated between Hurstdale Street to the Cole Street alignment. This area is comprised of wetlands and is not able to develop. The remainder of the corridor to Roscommon Road is zoned commercial (south side) and research and development (north side). This area contains the largest amount of undeveloped property along the corridor. Topography and wetlands will limit access and development within this area.



Vacant property with wetland impacts

Future Land Use and Influence on Required Access Management Techniques

Planned future land uses vary from one community to another, based upon development patterns, infrastructure and the desired character of each community. A map of the corridor’s future land use plans is illustrated in Figure 2. For the purpose of this corridor plan, the planned future land uses along the corridor were put onto a composite map so that the entire corridor could be observed from a transportation perspective. Major future land use patterns along the corridor can be summarized as follows:

- **U.S. 127 to Townline Road:** Commercial land use designations are the predominant future land use designation within this section of the corridor. Resort residential is located in five areas on the north side of M-55. These designations suggest that uses that generate a high level of traffic and require a number of access points will continue to be the development trend in this area. This section also includes a number of underutilized and vacant residential and commercial. As a result, the incorporation of access design standards with spacing guidelines, shared access requirements and support of cross-access agreements will be needed upon the development and redevelopment of properties. Medium to high density residential development is planned beyond the commercial future land use designations.
- **Townline Road to M-18/Gladwin:** This portion of the corridor continues the future land use designations of commercial along the properties that border M-55, and residential uses behind commercial areas. Village mixed use is planned from approximately 15th Street east to M-18. This designation suggests that a mix of commercial, resort-oriented and office uses will remain and/or be redeveloped. A significant number of parcels in this segment are shallow, small and narrow. Development or redevelopment of such parcels must focus on driveway consolidation and access sharing between properties in order to manage the number and spacing of access points.

Figure 2 Future Land Use/Zoning maps

- **M-18/Gladwin to Roscommon Road:** The township's mixed use future land use designation extends east along M-55/M-18 to the separation of the two state highways and wetlands area. The remainder of the corridor to Roscommon Road has commercial (south side) and research and development (north side) future land use designations. This portion of the corridor consists of more vacant and underutilized parcels than other segments. Larger parcels are also found along this portion of the corridor. Future development of larger parcels should meet spacing standards. Abutting parcels with smaller frontages should make use of shared driveways and service drives. Shared access should also be encouraged when smaller parcels abut large parcels.

"A unique aspect of land use and zoning decisions is the impact a decision in one community can have on the other communities along the corridor. Traffic and other effects of commercial development are not constrained by community boundaries."

Each type of land use creates traffic that adds to the existing through traffic along the highway. For example, a typical single-family home generates about ten vehicle trips per day (5 in, 5 out), where a commercial use located on a similarly sized lot may generate as many as fifty or more trips in an hour.

A unique aspect of land use and zoning decisions is the impact a decision in one community can have on the other communities along the corridor. Traffic and other effects of commercial development are not constrained by community boundaries. Therefore, information on major planning and zoning changes being requested along the corridor should be shared with other communities and agencies. One approach to assist with this coordination is to retain the M-55 Steering Committee formed for this study. The Committee could continue to promote access management and coordinated reviews. The role could be expanded to include other studies and joint promotion of desired improvements along the corridor.

3. ACCESS MANAGEMENT STANDARDS

Based upon the analysis of existing conditions and constraints, and review of MDOT, national, local, and other states access guidelines, the access management plan for the M-55 study area was developed. This chapter summarizes the basic design standards that should be used by the two townships in future access deliberations along the study area corridor, and other corridors where appropriate.

Access Management Standards

Since there is a significant variation in the current and planned future development along the M-55 corridor, it is impractical to impose driveway standards uniformly throughout the study area. Design or spacing criteria applicable to the developed portions of study area would be less than ideal for the relatively undeveloped area east of M-18 (north). Standards should provide sufficient flexibility to be effective and equitable as well as meet requirements set by MDOT and administered by the Townships and/or Roscommon County Road Commission.

The introduction of this report mentioned several benefits that typically result from consistent use of an access management plan. To achieve those benefits, access standards must recognize the following principles:

- **Limit the types of conflicts.** Reduce the frequency of conflicts or reduce the area of conflict at some or all driveways by limiting or preventing certain kinds of maneuvers.
- **Design for efficient access.** Identify driveway design criteria that promote safe and efficient ingress and egress at driveways.
- **Separate the conflict areas.** Reduce the number of driveways, increase the spacing between driveways and between driveways and intersections, and reduce the number of poorly aligned driveways.
- **Remove turning vehicles or queues from the through lanes.** Reduce both the frequency and severity of conflicts by providing separate paths and storage areas for turning vehicles and queues.
- **Preserve public investment and the integrity of the roadway.** Acknowledge that substantial public funds have been invested to develop the corridor to move traffic safely and efficiently.
- **Provide reasonable access.** Recognize that property owners have an inherent right to access public roadways, although reasonable access may be indirect in some instances.

Correct driveway spacing simplifies driving by reducing the amount of information to which a driver must process and react. Locating a driveway away from the operational area of a signalized intersection decreases the potential for congestion and accidents for both through traffic and vehicles using that driveway. Adequate spacing between driveways and unsignalized roadways (or other driveways) can reduce confusion that otherwise requires drivers to watch for ingress and egress traffic at several points simultaneously while controlling their vehicle and monitoring other traffic ahead and behind them.

“Improved driveway spacing simplifies driving by reducing the amount of information to which a driver must process and react.”

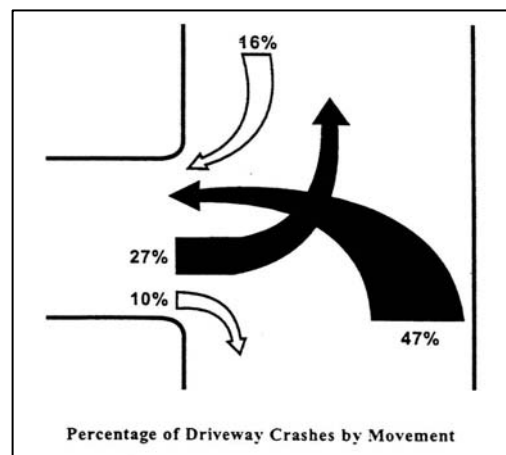
The following sections discuss a few of the basic access design criteria that were used during the analysis of the M-55 study area. The specific way in which these criteria or standards applied to the corridor is then outlined in the following chapter.

Access Design Parameters

Access management involves a series of tools to limit and separate traffic conflict points, separate turning volumes from through movements, locate traffic signals to facilitate traffic movement and limit direct access on higher speed roads and thus preserve capacity and improve safety. The following is a summary of what access management standards would involve.

- Number of Access Points:** The number of access points to a development should be limited to one, where possible. The number of driveways allowed along M-55 will affect traffic flow, ease of driving, and crash potential. Every effort should be made to limit the number of driveways; and encourage access off side streets, service drives, frontage roads, and shared driveways. Along the study corridor, driveways should be properly spaced from one another and from intersections with other major streets.

Access to a parcel should generally consist of a single driveway, which should be shared with adjacent parcels wherever possible. Certain developments generate enough traffic to consider allowing more than one driveway and larger parcels with frontages of at least 660 feet may also warrant an additional driveway. An additional driveway should only be considered following a traffic impact study that demonstrates the need for additional access and, where possible, the second access point should be located on a side street or be shared with adjacent uses.



Data from the National Highway Institute indicates that most driveway crashes involve left-turn movements

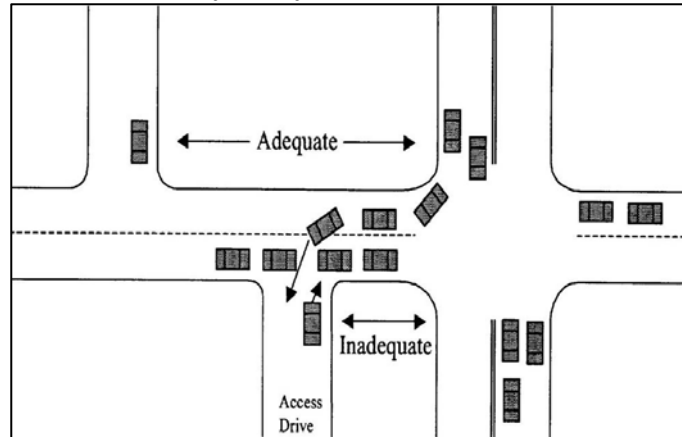
- Driveway Spacing from Intersections:** Driveways need to be placed such that there is adequate spacing from an intersecting street to ensure that traffic entering or exiting a driveway does not conflict with intersection traffic. Spacing between a proposed driveway and an existing public street

intersection is an important design element that must be identified. Typical standards take into account the type of roadways involved (trunkline, arterial, etc.), type of intersection control, and type of access requested. In most cases, there should be no driveways developed within the functional boundary of a given intersection unless the size of that parcel and other constraints do not provide a good alternative.

For a state trunkline roadways such as M-55 that have speed limits of 40 - 45 miles per hour, full movement driveways onto M-55 should typically be a minimum of 460 feet away from a signalized intersection and 115 to 230 feet away from unsignalized intersections. However, such distances are typically not attainable in highly developed/small parcel roadways such as most of the M-55 study area.

In locations where existing parcel constraints limit that spacing (retrofit areas – most of

M-55), driveways onto M-55 should be placed as far as possible away from the intersection. In most areas of the corridor, spacing of driveways on the side roads should be at least 250 feet from the nearest edge of the trunkline pavement.



- **Driveway Spacing from Other Driveways:** Driveways also need to provide adequate spacing from other driveways to ensure that turning movement conflicts are minimized. Generally, the greater the speed along the roadway the greater the driveway spacing should be.

Spacing standards recommended for this study area corridor are based upon MDOT guidelines adopted in 1996 (that are based upon numerous national references) and require the following minimum distances between driveways (centerline to centerline) given a measured average speed:

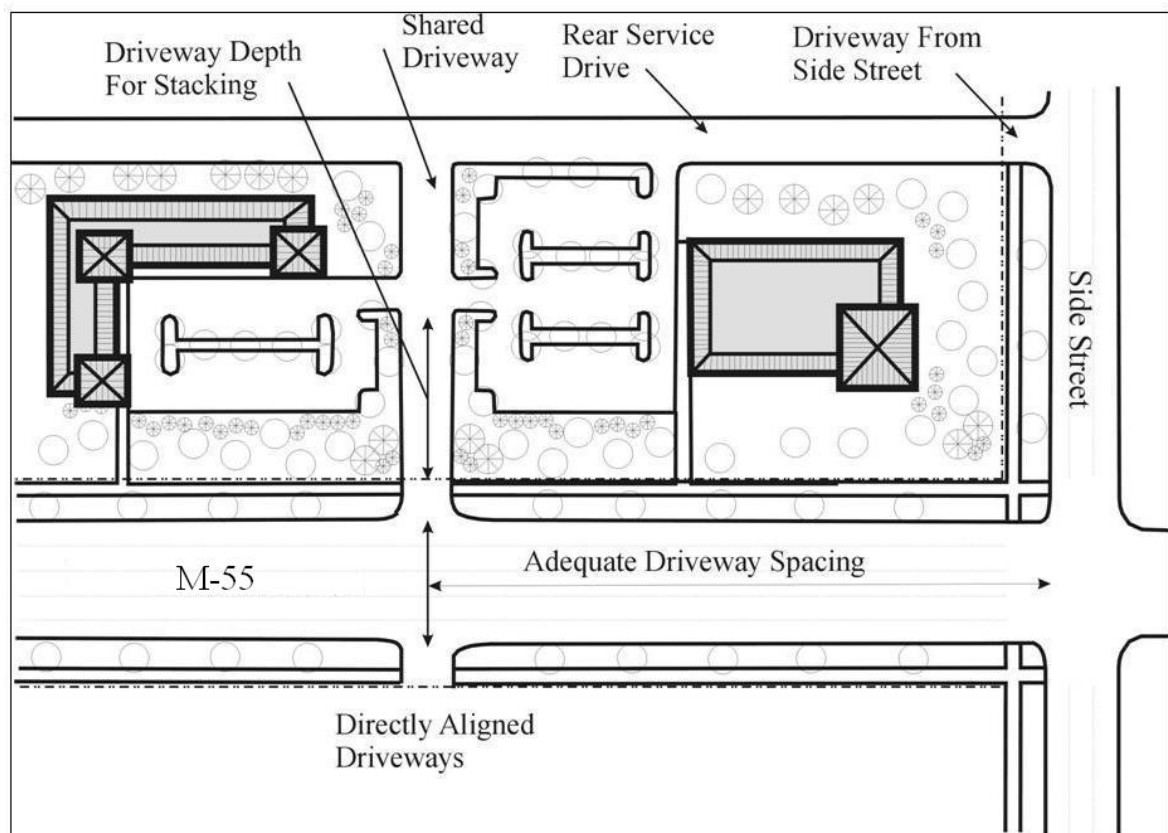
<u>Posted Speed (MPH)</u>	<u>Minimum Driveway Spacing</u>
25	130 feet
30	185 feet
35	245 feet
40	300 feet
45	350 feet
50+	455 feet

Again, it will be difficult for sites along the retrofit corridor sections to meet these standards, so the primary goal is to close/combine driveways that at least maximize driveway spacing as opportunities arise.

- **Driveway Alignment or Offset:** In order to prevent left turn conflicts, driveways should be aligned with those across the street or offset a sufficient distance to prevent turning movement conflicts. Minimum offsets on M-55 should be determined by current posted

speeds and range from 525 feet for a 40-mile per hour zone to 750 feet in a 55-mile per hour zone.

- **Shared Driveways:** Sharing or joint use of a driveway by two or more property owners should be encouraged. This will require a written easement from all affected property owners during the site plan approval process. Where a future shared access is desired, the developer should indicate an easement that will be provided to future adjacent uses.
- **Alternative Access:** Alternative access should be encouraged, such as shared driveways, rear service drives or frontage roads. Where parcels have frontage on M-55 and a side street, access should be provided off of the side street. Certain turning movements should be limited, especially left turns, where safety hazards may be created or traffic flow may be impeded.
- **Service Drives:** Frontage drives, rear service drives, shared driveways, and connected parking lots should be used to minimize the number of driveways, while preserving the property owner's right to reasonable access. Such facilities provide customers with access to multiple shopping/commercial sites without re-entering the main roadway and experiencing conflicts and higher speeds. In areas within one-quarter mile of existing or future signal locations, access to individual properties should be provided via these alternative access methods rather than by direct connection to a major arterial.



In areas where service drives are proposed or recommended, but adjacent properties have not yet developed, the site should be designed to accommodate a future service drive, with access easements provided. The Townships/MDOT/RCRC may temporarily

grant individual properties a direct connection to an arterial road until the frontage road or service drive is constructed. The direct access point to M-55 should be closed when the frontage road or service drive is constructed. In any case, care should be taken to minimize any negative traffic impacts of service drive connections to residential side streets.

The safety and efficiency of these types of facilities (and shared driveways) is only as good as their design allows. An important but often overlooked design aspect of that design is the "storage" provided at the access driveways. This is the distance between the main road and the service drive or the first internal cross access. This storage needs to be deep enough to accommodate expected vehicle queues thereby reducing the chance of blocking internal circulation on the service drive. The correct length is also needed to reduce the possibility of entering vehicles backing up into the main road due to internal congestion. Correct location and maintenance of traffic control signs and pavement markings are essential to a smooth operation of these driveways.

There are several factors that affect the determination of the best alignment and depth of a service drive. Those factors include the existing right-of-way at that location on M-55, the depth of the adjacent parcels, and the location of existing buildings in developed or partially developed corridor sections. For drives providing access to two small commercial uses, the storage should be at least 40 feet. For drives providing access to more than two small commercial uses, the storage should be at least 60-100 feet and potentially much more than that (100 - 300 feet) depending upon the trip

generation characteristics of the existing/ proposed long term land uses to be served.

“Shared access drives, service drives or frontage roads all serve to minimize the number of conflict points along a corridor while still providing reasonable access to the adjacent land uses.”

Rear service drives are often preferred because they do not create issues with driveway depth. They also facilitate placing parking to the rear of buildings and moving the buildings closer to the road. Rear service drives also have the added benefit of facilitating integrated access and circulation with development further to the rear. On larger sites, these rear service drives can be designed to function similar to roads interconnecting uses and sites.

Service drives are usually constructed and maintained by the property owner or an association of adjacent owners. The service drive itself should be constructed to public roadway standards in regard to cross section (ie. 22-30 feet wide) materials, design, and alignment. The design is often predicated upon the type and size of vehicles it will need to accommodate including delivery trucks. However, an easement that defines a service drive does not need to be nearly as wide as a public street right-of-way. Since, by definition, these internal roadways will be serving several uses with numerous driveways, additional uses such as parking along the service drive (temporary or otherwise) should be allowed only under special circumstances.

- **Sight Distance:** There are only a few sight distance limitations in the study area. The minimum sight distance required for a vehicle to enter or exit the traffic stream on an arterial from a side street or driveway is determined by MDOT and/or the RCRC at the time of an application for a driveway permit. The Townships should coordinate with the

MDOT at the time of site plan review to ensure that this sight distance requirement can be met. If this distance cannot be met on the site, indirect access through another property should be sought.

Implementation of the above access recommendations will help to preserve the capacity, safety, and useful life of the M-55 corridor. Travel time and congestion will be decreased and the potential for crashes will be reduced. While individual land owners may see the regulations as restricting access to their property, over the long term a well managed access system will improve access to properties and maintain travel efficiency, thereby enhancing economic prosperity of local businesses.

A strong access management program also has the benefit of closely coordinating land use and transportation decisions to improve the overall quality of life in the two communities. The design of the access points can be as important to the overall operation of a corridor as their location. MDOT's driveway design standards can be supplemented by requirements adopted by the Townships along the study corridor. Design standards usually define geometric requirements regarding driveway widths, corner radii, and taper lengths to name a few.

4. ACCESS MANAGEMENT PLAN

The access management plan developed for the M-55 study area was directly and indirectly based upon both state and nationally recognized standards. Developing standards to be used for future access considerations are only part of the picture. The other key element for any access management plan is to identify improvements to existing access systems that will reduce crash potential and provide better efficiency within each of the corridor sections. These corrections are typically referred to as retrofit access improvements. This is especially important for a corridor like M-55 given its highly developed nature.

As discussed during several of the Advisory Committee and public open house meetings, in several areas of the corridor it may be all but impossible to retrofit a corridor section to meet current spacing guidelines for new driveways. On the developed portions of M-55, however, the goal still is to minimize the number of driveways as much as possible. It should be recognized that many of the retrofit improvements recommended in the plan will only become implementable when an owner or developer approaches MDOT and either Roscommon or Denton Townships during another approval process. Incentives from the Townships, County, and MDOT to assist businesses with the costs of closing and reconstructing driveways could increase the pace of the plan's implementation.

On that last note, several of the recommended driveway closures outlined in the following sections may be completed within the 2006 road construction season. Limited funds from the MDOT Region and TSC became available for such use on M-55, and business owners were contacted to identify volunteer locations for driveway closures. The 11 driveways that are being closed/combined as part of this program are noted in the subarea discussions.

"It should be recognized that many of the retrofit improvements recommended in the plan will only become implementable when an owner or developer approaches either of the Townships and/or MDOT during another approval process."

This plan is a flexible document that is subject to adjustments and improvements as the study area corridors develop or redevelop. Although the basic design parameters should remain in place, exact locations and configurations of driveways and service/frontage roads may shift as development plans come into focus. This is especially true the few undeveloped areas within the study corridor.

The recommendations of the access plan are largely based on parcel configurations and future land use plan in existence at the time this plan was prepared. Property combinations

and unified development of small parcels is strongly encouraged. In addition, existing parcels should only be divided if a coordinated access system is retained through signed agreements and illustrated on a plan.

The following sections and accompanying figures outline how the recommended access management standards are applied within the overall M-55 study area. As discussed in the previous section, the average speed of traffic along a given corridor is one of several design parameters used to develop driveway spacing standards. Other factors that came into play include the roadway design types, intersection traffic control type, sight distance concerns, physical constraints and the type and size of potential traffic generators.

Service drives and/or internal site connections may play an integral part of the future access management system along the study area frontage. These will likely be located in two general areas; where there are significant sections of commercial or developmental areas that have not yet been developed, or as shorter internal connections in developed areas. The plan illustrates a few locations for these facilities and the variability in alignment that service drives can take.

As noted earlier in this document, this corridor is unique from the standpoint that the older platted street systems that exist in several areas on the north (lake) side of M-55 create their own poor access spacing. Many of those are spaced less than 200 feet apart and therefore wouldn't meet current MDOT access or intersection spacing standards. Closing or "cul-de-sacing" several of those (where other public street internal connections are available) should be pursued, but are not part of the access recommendations outlined in this plan.

The Access Management Plan is illustrated in a series of 13 aerial-based "maps." These show the final recommendations that resulted from numerous discussions with the Advisory Committee members and input from other interested/affected persons obtained at the two public open house meetings (where presentation-size versions of the maps were used). It should be noted that the aerials used for the base are from 2002, so some newer uses (eg Wal-Mart, Advanced Auto Parts, etc) were drawn in to help depict current conditions.

The following discussions regarding the access management plan recommendations are summarized on a map-by-map basis. The discussion and graphics start from the west end of the study area and proceed eastward.

Roscommon Township - US-127 to Knapp Road

The access management improvements recommended for this section of M-55 are illustrated on Figures 3, 4, and 5. Given its mostly developed nature, the plan is focused on numerous recommendations for addressing existing driveway/access issues.



Fig 3

Fig 4

Fig 5

Recommended retrofit improvements include many proposed driveway closures of older commercial driveways and related development of shared drives, especially along the section between US-127 and Old US-27 where excessive and poorly spaced driveways dictates the need to reduce the number of access points from 35 to 19. It should be noted that using a strict application of MDOT’s access management guidelines would result in reducing the number of access points to 12 or less.

There are several recommendations to develop better internal connections. Most of the existing fast food restaurants along the south side are good candidates for such connections, as is the undeveloped site across from Standard Street. The plan essentially calls for the removal of part of the various types of physical constraints that currently block needed connectivity that will help reduce ingress/egress movements on M-55.

Recommendations also include notes regarding future access to undeveloped parcels (opposite vacant 84 Lumber site) and closure of a short section of C.R. 309 at M-55 to provide a less confusing M-55/Knapp/CR 301 intersection area.

Typical Driveway Closure Costs

Closure Type	Estimated Cost*
Close/Remove Existing Commercial Driveway	\$5,000 - \$10,000
Close/Remove Two Driveways and Construct Shared Driveway	\$15,000 - \$25,000

**Costs typically borne by site owner if/when site redevelops improves, unless planned MDOT roadway improvement project provides funds and/or local incentives are provided.*

It should be noted that the north side of section between US-127 and Old US-27 lies within Lake Township. The recommendations for that north side will need to be coordinated between MDOT and Lake Township officials/staff when opportunities arise.

Roscommon Township – Knapp Road to Townline Road

The recommended improvements to the access system for this section of M-55 are illustrated on Figures 6, 7, and 8. Much like portions of the previous subarea, the recommendations run the whole gamut of access solutions for a densely developed corridor.

The plan’s recommendations include closing and/or combining a total of approximately 60 existing access points along this section of M-55. Some of these are just unused curb cuts, but most are unnecessary second driveways or combined driveways that are too close together. There is not one focused area for the recommended closures as they are needed fairly consistently throughout this subarea. Several closure or driveway revision recommendations also address locations where existing drives are too close to a major intersection, such as the west side of the signalized M-55/ Townline intersection.



Fig 6

Fig 7

Fig 8

There are also several locations where the plan addresses side street access that is too close to the intersection (including on-street parking) and in one instance (at Townline on the southwest corner) where the recommendations include narrowing an existing very wide commercial driveway.

The commercial parcels along this section tend to have less depth than some other areas so service drive recommendations are limited. There are recommendations, however, for internal connections between adjacent commercial parking areas that will help reduce conflicts on M-55.

Denton Township – Townline Road to Home Depot/Wal-Mart site

Figures 9 through 11 illustrate the plan’s access management recommendations for this section of the study area. Although there are recommendations for the few undeveloped parcels, they are largely retrofit-type recommendations given the predominantly developed nature of this section of the corridor.



The recommendations for this subarea are very similar to those outlined for the previous section. The exceptions are related to recommendations regarding large commercial site access. Those include closure or relocation of a couple of access points at the Glen’s/Village Square site and recommendations for increased internal connections to the Home Depot/Wal-Mart service drive.

Like most sections of the M-55 study area, there are numerous recommendations for closing/combining/sharing small commercial site driveways throughout the subarea. Closure/combining of most or all of these locations will not likely be possible until the property owner approaches Denton Township for some other type of require approval, and closure of a driveway can then be tied to that approval.

One of the focal points for recommended closures/sharing is the section from Beverly to Stafford where there are currently 22 commercial access points within that short 900-foot section. By comparison, current standards would dictate that there would be at most 6-7 access points within that area. The closure of most of the recommended locations, along with maintaining or providing cross access between adjacent uses, will allow that high crash rate section to function better. Addition of a center left turn lane would also improve the safety of not only this section but sections to the east.

The locations where business/property owners have already agreed to close and/or combine existing driveways using 2006 MDOT funds are noted separately on the figures in green triangles. They include the site between Elmwood and Twin Elm, the vacant property between Burrill and Kimberly, and old unused curb cuts on the RV sales site opposite the latter site.

Fig 9

Fig 10

Fig 11

Denton Township – Home Depot/Wal-Mart to Roscommon Road

As noted in other chapters, this section of the overall study area has a wider variety of land use densities and related access issues. The section through the Prudenville area is still highly developed, while further east there are few existing access management problems to address. The recommendations for this last subarea are outlined on the following pages in Figures 12 through 15.

Retrofit recommendations are largely limited to the western half of this subarea, or the Prudenville area. Improvements in this area include intermittent driveway closures, correcting poor driveway offsets (either from other driveways or from opposing public streets), and developing short internal connections. The latter includes the general recommendation that a service drive connection be made behind the uses on the northeast quadrant of the M-55/Gladwin intersection, using a portion of an existing but unused roadway right-of-way if possible. The alignment of that connection will be dependant upon how those sites are reconfigured if/when they redevelop.



The recommendations also include suggested revisions to existing parking areas, specifically those spaces that back out onto Lake Avenue just north of the M-55/Gladwin intersection.

For the less developed east end of this subarea, there are just a few recommended driveway closures or sharing of access. The plan recommends that, in the long term, rear service drives be developed in both the south side commercial and north side R&D areas to help minimize the number of future access points directly onto M-55.

General Land Use Recommendations

Although access management is primarily intended to improve motor vehicle traffic flow, it can support transportation demand management by integrating transportation and land use planning, and by improving transportation options. Improved transportation options result in a more diverse and flexible transportation system that can accommodate variable and unpredictable conditions. A goal is to develop plans for M-55 that will allow rational development while maintaining or improving safety and mobility along an existing roadway. This can be a powerful tool to direct development or redevelopment along the study area corridors. Access management can increase the capacity of a corridor to accommodate development, and can minimize development pressure in areas where development is not planned.

Land use planning efforts that can be used to support access management standards on M-55 include encouraging clustered development, creating more pedestrian-oriented street designs, improved connectivity between development parcels, and road space reallocation

Fig 12

Fig 13

Fig 14

Fig 15

to encourage efficiency. Road space reallocation involves shifting more road space to specific transportation activities, and managing roadways to encourage more efficient and equitable transportation. It is a method of prioritizing transportation to favor higher value trips and lower cost modes. Road space reallocation can involve strategies ranging from parking and sidewalk management and pedestrian improvements, to speed reductions and traffic calming. Road space reallocation can be particularly appropriate on a congested roadway such as Mission Street, since a vehicle's road space requirements increase with its size and speed. Motorists impose far more congestion on other road users than people who travel by other modes.

Recommendations

General land use strategies that can be used to accomplish access management strategies on one or more of the study corridor subareas include:

- **Establish future right-of-way needs for the corridor:** Although the existing of right-of-way appears to be sufficient at this time on in some sections, it should be determined whether additional right-of-way may be needed in the future to provide for future roadway and access improvements. Future cross sections for the roadway should gain agreement between MDOT and the Townships. Specific issues that should be considered in establishing future right-of-way needs (widths) include:
 - Allow for variations in road location, based on existing development and natural elements which the Townships may wish to preserve;
 - Accommodate drainage needs and topographical changes;
 - Accommodate operational features such as turn lanes at intersections and potential transit facilities; and
 - Flexibility in road design to allow for bike lanes, sidewalks, buffer strips between the curb and sidewalk, etc.

- **Increase minimum lot frontage along the corridors:** There exist multiple areas along the corridor that are undeveloped. Minimum lot width requirements should be examined to insure future lot splits are not too narrow to meet frontage requirements based on access spacing standards. In particular, undeveloped minimum lot widths within the overlay district should be between 300-600 feet in order to meet the desired spacing requirement between access points. This minimum lot frontage can be varied if one or more of the following is provided:
 - Provisions are made to share access between parcels; and/or
 - A determination has been made that topographic conditions preclude the ability to meet the driveway spacing standards.

- **Adjust front yard setback requirements:** Front yard building setbacks within the overlay district should account for future right-of-way needs and access options. One option is to establish setbacks measured from the centerline of the road. In cases where a service drive and/or frontage road is being provided, a minimum of thirty (30) feet is needed between the M-55 right-of-way and the pavement of the service drive/frontage road. In order to minimize disruption and preserve areas for future right-of-way, setback requirements could be increased with no detention/improvements between the existing right-of-way and parking and building.

Site Plan requirements: Many of the following questions are part of a checklist included in the model ordinance and should be addressed as part of any review/approval process. They can be used by the townships' staff, zoning administrators or whoever receives applications and discusses procedures with potential applicants.

Is the subject site located within the M-55 Access Management Plan study area?

Has the most recent site plan or submittal been submitted to the MDOT contact person for their review and comments?

Has the applicant been made aware of the special requirements and standards?

Is the site within an area where specific access recommendations were provided in the M-55 Access Management Plan? If so, provide the applicant with a copy.

Does the site plan or submittal illustrate all of the additional information on other existing access points and adjacent lot configurations so compliance with the standards can be determined?

Can the site meet the spacing standards between access points?

Is there a potential to provide an alternative, shared access, system?

Is the access point properly aligned with, or spaced from, existing driveways or the location where driveways can be expected in the future?

Has information on sight distance been provided?

Is there a need for a traffic impact study to evaluate the impacts and determine if changes to the site design or road system are needed?

Is there a reason to request a meeting with MDOT to discuss and address access issues prior to review by the Planning Commission?

While there is no set time for implementing access management standards, the pace of development or redevelopment within the study area often determines the schedule for implementation. Access management standards within the M-55 Overlay District should be implemented by evaluating proposed access for each new or redeveloping property independently to determine its relationship to corridor plans and policies.

5. ADOPTION and USE of the PLAN

Successful implementation of the recommendations in the M-55 Access Management Plan requires a partnership between Roscommon Township, Denton Township, and MDOT. This requires that the Townships' Planning Commissions, elected bodies, and members of the zoning boards of appeals be aware of the benefits of access management and their role in its implementation.

A coordinated and comprehensive access management approach is essential if future development and redevelopment in the study area is to be accommodated and traffic safety and flow in the area is to be improved. Development decisions along M-55 are under the purview of several agencies. The two townships have jurisdiction over land use planning, zoning, site plan and subdivision review outside the M-55 and side street rights-of-way. MDOT and the Roscommon County Road Commission have control over improvements within the M-55 and side street rights-of-way, respectively. It is critical, however, that the township's site plan review process needs to address access in a coordinated fashion with the local (Grayling) MDOT TSC office.

Two documents were prepared to help guide access management decisions. The first was this access management plan. This plan provides specific access recommendations along the corridor based on a review of existing conditions and identifying the best practices (through research and application) to address them. The second was an overlay zoning district to implement the plan recommendations and MDOT standards. A draft of the model ordinance for use by both townships is included in the appendix.

While set up as a zoning ordinance regulation, the townships could also choose to adopt the standards through a separate police power ordinance rather than through the zoning ordinance. Among the advantages of this approach is the fact that existing sites do not obtain the same nonconforming rights (i.e. existing driveways are not grandfathered) and no changes to the zoning ordinance or map are needed. However, the separate ordinance should still be referenced in the zoning ordinance so that the ordinance is not neglected by applicants or officials

The M-55 overlay zoning districts would be placed over the existing zoning regulations for all parcels with frontage along M-55 and along intersecting roads within five hundred feet of the M-55 right-of-way. For example, if the current zoning is residential, the uses permitted in that zoning district, the dimensional standards (setbacks, height, etc.) and other regulations would still apply, but the access spacing and circulation design standards of the overlay district would also apply.

The focus of the overlay zone is a set of access management standards. Access management is a set of proven techniques that can help reduce traffic congestion, preserve the flow of traffic, improve traffic safety, minimize crash frequencies, preserve existing roadway capacity and preserve investment in roads by managing the location, design and

type of access to property. More than one technique is usually required to effectively address existing or anticipated traffic problems.

Not all sites will be able to meet all of the access management standards, particularly older commercial sites with existing development. In order to address these situations the ordinance provides the authority to modify the standards on a case-by-case basis, with guidance on a site-specific scale coming from the recommendations outlined in this Plan.

The ordinance also requires traffic impact studies be performed for larger developments that have the potential to generate significant volumes of traffic. These studies would evaluate the impact that a proposed development will have on the road system and identify mitigation to offset the impact. The ordinance makes reference to the handbook "Evaluating Traffic Impact Studies, a Recommended Practice for Michigan," developed by the MDOT and Tri-County Regional Planning Commission as the required methodology for completing the study.

The flow chart illustrated on Figure 16 on the next page outlines the recommended process to be followed in review of any development proposal along the M-55 corridor. It provides for a coordinated review by Denton Township, Roscommon Township, and MDOT (could be revised to include the Roscommon County Road Commission for instances where side road access is an issue). The intent of the process is to ensure that the local unit's of government review of the site plan design and MDOT's access permit process is coordinated to implement the recommendations of this plan. The process provides for a feedback loops between the planning commission and MDOT as modifications are made to access and circulation.

To continue the implementation of the M-55 Access Management Plan, the Advisory Committee should continue to meet on a regular basis. This will provide a forum to discuss and coordinate major development proposals, traffic impact studies, access issues, right-of-way preservation and roadway cross-section designs, rezoning proposals, ordinance text amendments, local master plan updates, roadway improvements, non-motorized transportation, streetscape enhancement, and other common issues along the corridors.

It should be noted that the recommendations outlined in this plan can be used on other area corridors with existing or expected future access management issues. The underlying benefits obtained by maintaining good control of the number and location of commercial access points can be realized on all major roads.

M-55
Recommended Access Approval Procedure
 for Site Plans, Special Land Uses,
 Subdivisions and Site Condominiums

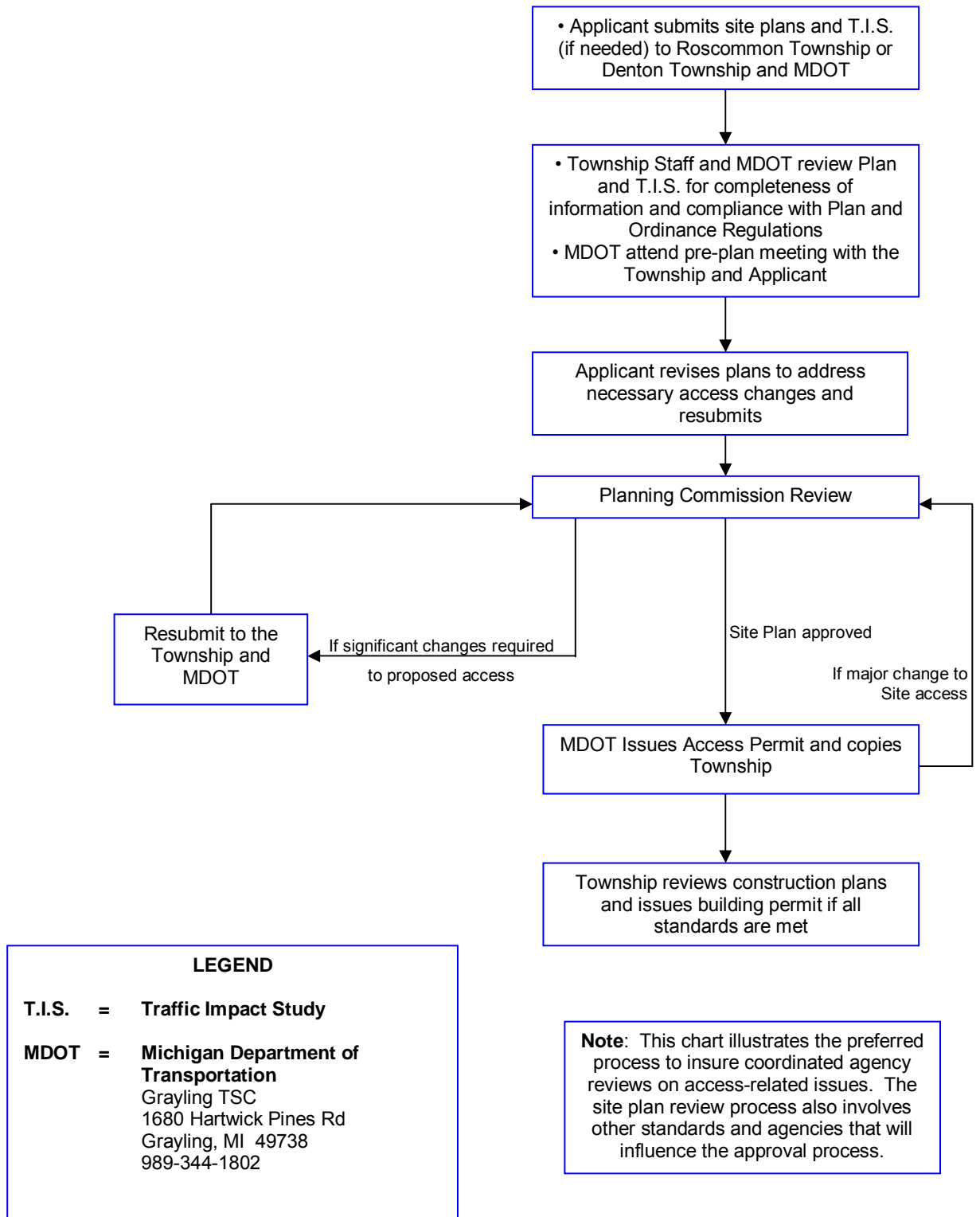


Figure 16

APPENDIX