

2010

HAMBURG TOWNSHIP
LIVINGSTON COUNTY, MICHIGAN



M-36 CORRIDOR PLAN



M-36 Corridor Plan

HAMBURG TOWNSHIP | Livingston County, Michigan

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
ISSUES AND GOALS.....	1
SUMMARY OF ACTION PLAN.....	1
Future Land Use.....	1
Potential Amendments to the Zoning Ordinance.....	1
Transportation.....	2
Streetscape	2
Site Design.....	2
Parking.....	2
Signs.....	2
Landscaping.....	3
Open Space	3
Architecture	3
Access Management.....	3
ISSUES AND GOALS.....	4
ANALYSIS OF THE M-36 CORRIDOR	6
HISTORIC DEVELOPMENT OF THE CORRIDOR.....	6
EXISTING CHARACTERISTICS OF THE M-36 CORRIDOR	9
CORRIDOR TRENDS, SIMILARITIES, SIGNIFICANT FEATURES, IMAGE	9
EXISTING LAND USE CATEGORIES.....	9
ENVIRONMENTAL CONSTRAINTS AND OPPORTUNITIES	13
Water Features	13
Soils.....	15
Woodlands and Vegetation.....	16
Topography and Key Vistas	16
Potential Contamination Sites.....	17
TRAFFIC	18
Roadway Traffic Levels.....	18
Traffic Crash (i.e. Accident) Data.....	18
PEDESTRIAN/BICYCLE FACILITIES	19
ROADWAY AMENITIES	20
Street Lighting.....	20
Signs.....	20
SEGMENT ANALYSIS.....	21
SEGMENT MAP RATIONALE	21
GENERAL CHARACTERISTICS WITHIN SEGMENTS.....	22

ACTION PLAN	25
FUTURE LAND USE	25
Site Development Standards.....	29
Potential Amendments to the Zoning Ordinance.....	30
TRANSPORTATION	31
Street Redesign.....	31
Intersection Improvements.....	33
Streetscape	33
Old Hamburg Area.....	34
SITE DESIGN	38
Building Siting.....	38
Parking.....	38
Signs.....	38
Landscaping	40
Open Space	41
Architecture	42
Access Management	44
APPENDIX A - M-36 Overlay Zone	48
APPENDIX B - Traffic Impact Study Ordinance	52
LIST OF MAPS	
Map 1: Location Map	8
Map 2: Existing Land Use Map.....	11
Map 3: Segment Map	
Map 4: Future Land Use Map	28
Map 5: Old Hamburg Area Roadway Alternatives	35
LIST OF TABLES	
Table 1: Locations of Primary Commercial Nodes Along M-36.....	29
Table 2: Primary Residential Segments Along M-36.....	30
LIST OF FIGURES	
Figure 1: Population vs M-36 Traffic.....	6

EXECUTIVE SUMMARY

ISSUES AND GOALS

The M-36 Corridor Plan has been prepared by the Hamburg Township Planning Commission to guide future development along the roadway. Development pressures along M-36 are increasing as a result of sprawling population and increasing traffic levels. This plan provides for continued development while maintaining the many natural qualities of the Township. The Township desires to maintain a high quality community environment for people who live, work, shop and recreate in Hamburg Township. This plan strives to accomplish this through preserving the rural character of the Township while accommodating a reasonable amount of development. This is to be done by maintaining well defined nodes of clustered commercial development while preserving the rural character of the surrounding neighborhoods. The Planning Commission also wishes to promote improved site design for new development and redevelopment of existing sites, while preserving existing landscaping and natural features viewed along M-36. This plan also identifies means for accommodating increased traffic volumes through selective transportation improvements to the M-36 corridor.

SUMMARY OF ACTION PLAN

The following is a brief summary of the recommendations of the M-36 Corridor Plan. The plan focuses on two general types of streetscapes located along the corridor. Existing commercial development centers are located at several locations along the corridor. The plan makes recommendations for these areas aimed at creating well defined commercial nodes that serve the surrounding neighborhoods and motorists on M-36. Between these commercial areas are segments of M-36 which are characteristic of a very rural, natural environment. The plan provides for lower intensity development in these areas that maintains or enhances their natural quality.

Future Land Use

The corridor should not be "suburbanized" with excessive clearing of natural vegetation, deep building setbacks and large front parking lots. Development patterns need to be sensitive and complimentary to the overall character of the Township. Low to medium density single family residential development should be maintained in areas identified as important because of their open rural character. Future commercial and office development along the corridor should be directed towards areas where transportation improvements can be made to support the uses.

Potential Amendments to the Zoning Ordinance

Changes may be made to the zoning ordinance that will help manage growth along the M-36 corridor. The Neighborhood Service and the Community Service Districts should be amended to consider high traffic generators such as gas stations as a special land use.

An office district is proposed for the zoning ordinance. Two areas are proposed for this new district: 1) south of M-36 between Hull Road and the Township line, and 2) south of M-36 east of the North Hamburg Road intersection.

Transportation

Increases in traffic volumes should be accommodated through selective widening of M-36, intersection improvements, installation of traffic signals, use of deceleration lanes and construction of indirect access systems. Select road widening should be made at commercial nodes as the corridor develops. In non-commercial areas, M-36 should remain a two lane roadway. To preserve the rural character of Hamburg Township, any future road widening should balance traffic needs with consideration of natural features.

Selected intersection improvements should be made at locations which have experienced higher crash rates. Traffic lights should be requested along M-36 to provide gaps in the flow of traffic at peak travel times. Traffic lights may be necessary along M-36 at intersections designated as more intense commercial nodes.

Streetscape

A streetscape plan for the corridor is important for preserve existing landscaping and natural features along the M-36 right-of-way. Important views along the corridor should be preserved through building location, orientation and other site plan standards. The Township should actively pursue available grant programs for street trees and other streetscape improvements. Non-motorized paths should be required with all new development or redevelopment of existing sites.

Site Design

The site design for developments which line M-36 are a key feature in defining the streetscape character. Two distinct types of streetscape are designated along M-36: commercial areas and rural areas. The Township should encourage the neotraditional village concept where appropriate in commercial areas with mixed use development, reduced setbacks, parking at the side or rear and a more pedestrian oriented streetscape. In areas where the wide open rural character is identified as a critical community asset, buildings should be located in the background so that the natural features remain the dominant feature of the streetscape. Buildings on these sites should fit into the natural topography and preserve an undisturbed natural vegetative buffer along M-36.

Parking

To prevent Hamburg Township from developing a "suburbanized" character, parking lots should be discouraged in the front of buildings. Parking should be encouraged within the side yards or rear yard of the site. Impervious surface (i.e. pavement) coverage should be minimized by limiting the size of parking lots in order to maintain natural open space and minimize drainage problems.

Signs

Signs are another feature which have a major effect on the character of the streetscape. To have signs as an integrated part of the character of M-36, they should be located in relation to buildings, landscaping, natural features and other signs. Consolidation of signs at shopping centers should be encouraged. Ground signs should be required in place of pylon signs for all new development. Sign materials and color should complement the building materials. Sign designs should be required as part of site plan review.

Landscaping

Landscaping is also an integral part of the natural character of the M-36 corridor. Development should maximize the amount of green space through: street trees and plantings, landscape parking lot setbacks, providing trees within parking lots, and discouraging large and uninterrupted pavement areas. Landscaping should blend in with the natural setting of the Township by utilizing similar plant species. The Township should promote the preservation of existing trees between new development and the M-36 right of way.

Open Space

An open space network should be created along the corridor and throughout the whole Township. The Lakeland Trail should be combined with other bike paths to interconnect the open space areas along the M-36 corridor. These paths should also be linked with other areas of the Township, and areas in adjacent communities, as part of a comprehensive open space network.

Architecture

Architectural standards should require that new buildings be designed to preserve or complement the character of existing development and blend harmoniously into the streetscape. The overall appearance should be "timeless". The intent of "timeless" architecture is style and quality which continues to be admired and copied in any era. This type of building design is distinct from the "glass wall" buildings of the 1950's and 60's, and even the block buildings of the 1980's. Timeless architecture commonly includes features such as brick, peaked roofs, accent features and glass windows. Trendy design or colors should be discouraged. Brick facades with traditional windows are preferred for most commercial buildings. Subtle earth tone colors should be used; concrete block, aluminum siding, metal panels and plastic should be discouraged. In the Old Hamburg Village area and at the Chilson Road commercial center, a continuation of the established Bavarian theme may be desirable.

Access Management

Access management involves reducing traffic conflicts (i.e. potential for crashes) and preserving through traffic flow using a variety of measures. The number of access points to M-36 should be limited to one per parcel. Driveways should generally be spaced a minimum of 300 feet apart, 125 feet from a local street intersection and 250 feet from an arterial intersection. Driveways should be directly aligned with those across the street or offset at least 150 feet. Curbing is important to define driveway locations. Alternative means of vehicular access should be encouraged, such as shared driveways, rear service drives or frontage roads. Deceleration tapers and left turn bypass lanes should be used to convey traffic turning movements. The zoning ordinance should be amended to require traffic impact studies under certain conditions.

ISSUES AND GOALS

Development pressures along M-36 are increasing as a result of sprawling population and traffic levels. Traffic levels on M-36 have grown by 70 % between the years 1980 and 1990. Hamburg Township's population has grown by 16 % during this same time. The Township's population was 13,083 persons in 1990 and is projected to increase to 15,552 persons by the year 2000. These growth pressures have prompted Hamburg Township to formulate this plan and address development concerns. This plan strives to maintain the qualities of the community as illustrated by the following issues and goals. These issues and goals specifically incorporate the township's desire to maintain a high quality community environment for people who live, work, shop and recreate in Hamburg Township.

ISSUE: Community Character - The existing rural character and natural features (lakes, rivers, views, woodlands, etc.) that continue to attract residents can be diminished or lost if growth is not managed.

GOAL - Preserve the rural character of Hamburg Township by accommodating a reasonable amount of development, but ensuring the development retains or adds to the rural appearance and natural features.

ISSUE: Streetscape - M-36 is the most heavily used roadway in the Township, and thus for many people the image of M-36 is their image of the township.

GOAL - Existing landscaping and natural features viewed along M-36 should be preserved. Development should be situated away from the roadway and key viewsheds protected to retain an appearance of low intensity development.

ISSUE: Traffic - Traffic volumes are increasing along the corridor at a much faster rate than population growth. The volumes are approaching the capacity the roadway is designed to accommodate and congestion occurs during peak hours. Continuation of the pattern of closely spaced driveways, serving individual businesses and homes, will increase potential for crashes and will hamper the corridor's ability to accommodate additional traffic without congestion.

GOAL - Increases in traffic volumes should be accommodated through selected widening of M-36, intersection or traffic signal improvements and construction of indirect access systems to serve commercial and office uses.

ISSUE: Site Design - There is a need for consistent site design standards which facilitate the orderly growth of the M-36 corridor.

GOAL - Promote improved site design for new development and redevelopment of existing sites through site development and architectural standards.

ISSUE: Land Use - The high volumes make the environment less desirable for single family development but the Township does not need or desire a continuous strip of commercial development.

GOAL - Cluster future commercial development around existing commercial areas at major intersections to create nodes that serve the residents of the surrounding neighborhoods and motorists on M-36.

ANALYSIS OF THE M-36 CORRIDOR

HISTORIC DEVELOPMENT OF THE CORRIDOR

The M-36 Corridor is the major roadway through Hamburg Township. The limited crossings of the Huron River and the natural features have led to a road system that funnels virtually all longer distance travel to M-36. The roadway has changed from a rural low volume road to a connector with increasing traffic between new residential development and employment centers in Detroit and Ann Arbor. The increasing population in the Township and traffic volumes have intensified development pressure and concerns about the long range impacts on the M-36 corridor.

The most concentrated development along M-36 has occurred near the unincorporated village of Hamburg, known as "Old Hamburg". Old Hamburg has a typical village setting with a variety of uses, small lots, shallow building setbacks and a quaint appearance. Some of the more recent commercial development along the west side of M-36 near Old Hamburg has a more auto oriented design. Those buildings are farther setback with parking lots in the front.

Commercial development attracted by the relatively high traffic volumes has also occurred at several other locations along M-36, generally near major intersections and unincorporated population centers. These commercial clusters are located at the intersections of Merrill Road, Chilson Road, Pettysville Road, and near the unincorporated village of Lakeland. Overall, commercial development pressures along M-36 can be expected to continue to increase as traffic volumes and population increase.

In addition to commercial development, new residents continue to be attracted by Hamburg's many natural amenities. The population of Hamburg Township in 1990 was 13,083 persons. Livingston County projects the Township's population will rise to 15,552 persons by the year 2000. This projected increase represents a 19% growth over 10 years. While population has increased only 16%, traffic volumes along M-36 have increased approximately 70% between 1980 and 1990 (see Figure 1). Traffic levels have been growing at an average rate of 7% per year.

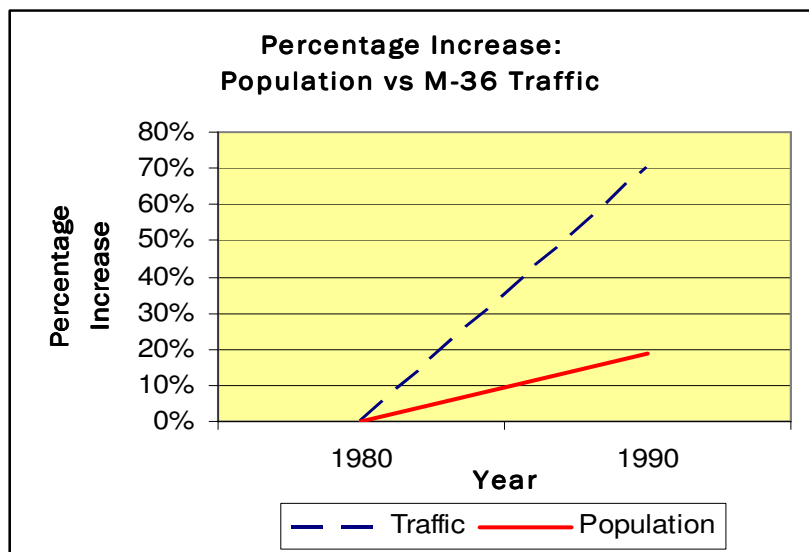
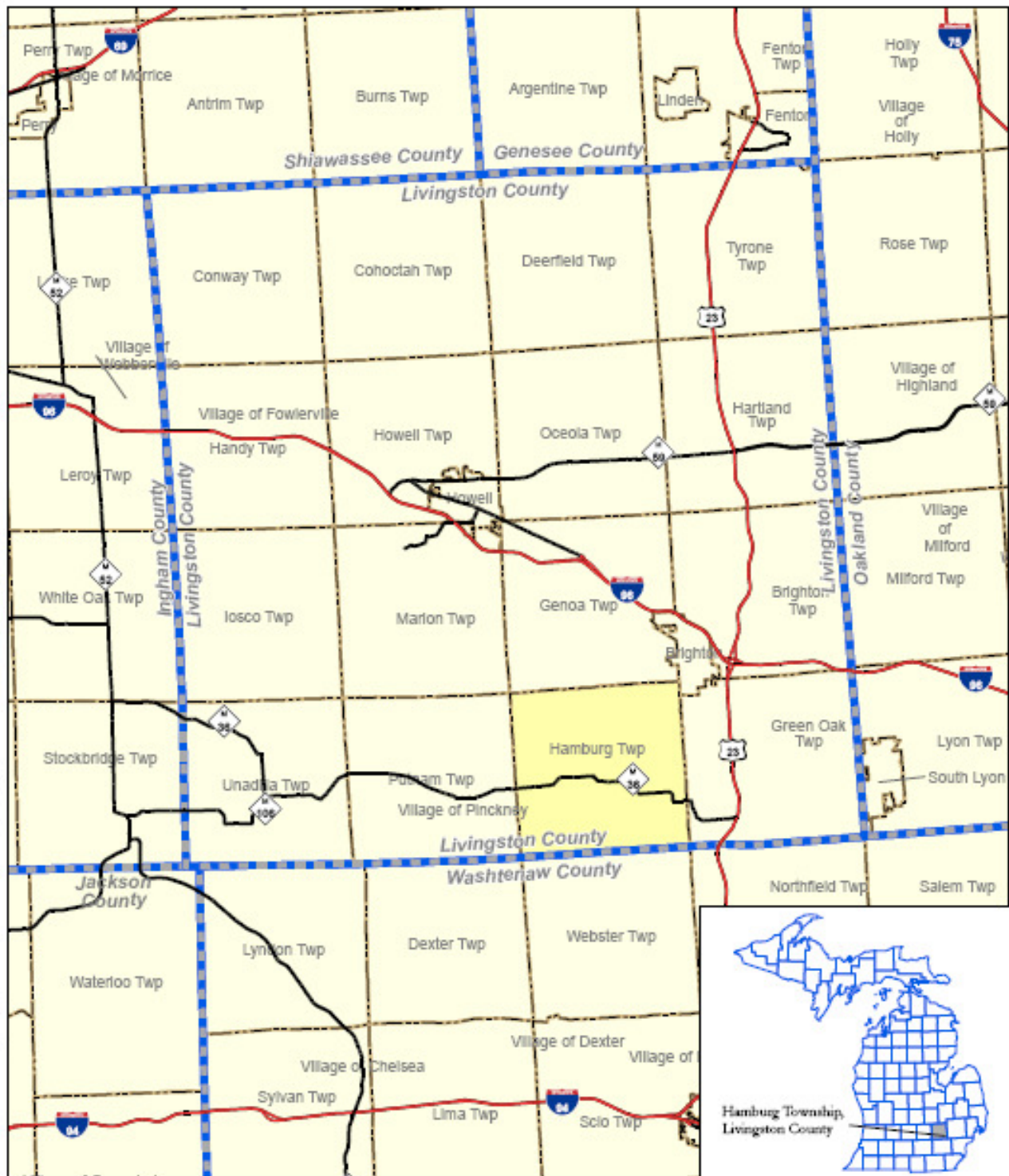


Figure 1. Comparison between population and M-36 traffic increases.

Increasing traffic volumes also correspond to population increases in surrounding Townships, especially those to the west (see Map 1 on page 9). M-36 is used by these other communities, such as Putnam Township and Pinckney, as a link to U.S. 23. Increased traffic volumes also reflect how the typical household drives more than the household of 20 to 30 years ago. Today, there are more cars per household, two commuters, and longer trips to work and for shopping. These factors have all had an effect on traffic and development along M-36 within Hamburg Township.

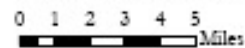
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Map 1 Regional Location

- | | | | |
|---|----------------------------|---|----------------|
|  | Surrounding Counties |  | Interstates |
|  | Hamburg Twp |  | US Highways |
|  | Surrounding Municipalities |  | State Highways |
|  | Lakes and Rivers | | |

Data Source: Michigan Geographic Framework, Michigan Center for Geographic Information, 2006



Hamburg Township
Livingston County, Michigan

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8/03/2010

EXISTING CHARACTERISTICS OF THE M-36 CORRIDOR

The existing land use, environmental, traffic, Township Zoning and development regulations will influence the future of the corridor. Just as the presence of a wetland, lake or other natural feature can dictate the use of a piece of property, zoning and other development regulations can have a similar influence. The following sections describe the present land uses patterns along the roadway, transportation conditions and natural features that provide constraints and opportunities to future community development. All of these physical conditions in combination with the socio-economic features of the community and future development practices are all elements which dictated the future of the M-36 Corridor.

CORRIDOR TRENDS, SIMILARITIES, SIGNIFICANT FEATURES, IMAGE

In general, the M-36 Corridor is characterized by the following:

- Open space including undeveloped land and a limited amount of agricultural land.
- Scattered residential development, with some homes fronting M-36.
- Spot commercial development.
- The presence of various natural features including the Huron River, Buck Lake, Zukey Lake and Oneida Lake. Wetlands are present throughout the corridor in scattered locations associated with the river and lakes.
- High density single family residential development along the lake frontages.
- Rolling topography throughout the corridor contributing to outstanding views but also limiting sight distances at drives and intersections.
- Narrow road with limited room for maneuvering around autos waiting to turn.
- The narrow 66 foot wide right-of-way does not provide much room for widening or facilities such as utilities and bikepaths. Most state trunklines like M-36 have 86 foot to 120 foot right-of-way. A future right-of-way of 120 feet has previously been proposed.

EXISTING LAND USE CATEGORIES

The following land use categories are displayed on the Existing Land Use Map (see Map 2 on pages 12 & 13). It shows the existing commercial nodes located along M-36 with scattered residential development interspersed with agriculture and open space.

Single & Two Family Residential includes all single family detached dwellings and duplexes. Single family residential uses are located along M-36 throughout the corridor.

Multiple Family Residential includes all multiple family attached dwellings. There is currently one multiple family residential complex along M-36 near the intersection of Chilson Road.

Commercial includes all land and buildings where products, goods or services are sold. There are several commercial clusters located along M-36 as described above. Typically these areas are located close to the road. The predominance of commercial activity is located north and east of Old Hamburg on M-36.

Approved Development includes all areas that are currently being developed. These refer to areas near the western end of the corridor that are currently being developed as single family residential.

Industrial includes all lands and buildings devoted to manufacturing, processing, warehousing and related storage. Industrial uses are limited to locations north of Old Hamburg and at the eastern portion of M-36 within the Township including the existing industrial park.

Public / Semi-Public includes all lands and buildings devoted to governmental facilities, schools, churches, cemeteries and recreational areas.

Agriculture, Open Space, Vacant includes lands actively used for agricultural purposes and lands not currently put to any active use. Open and Agricultural lands can be found all along the M-36 corridor. Much of the land classified as OA has remained open because of the presence of wetlands or poor soils which increase development costs in relation to other available areas of the Township. There are large expanses of this land use found along the corridor.

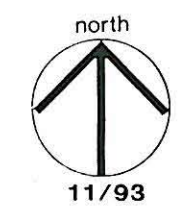
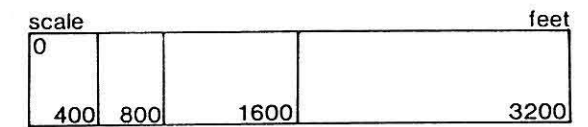
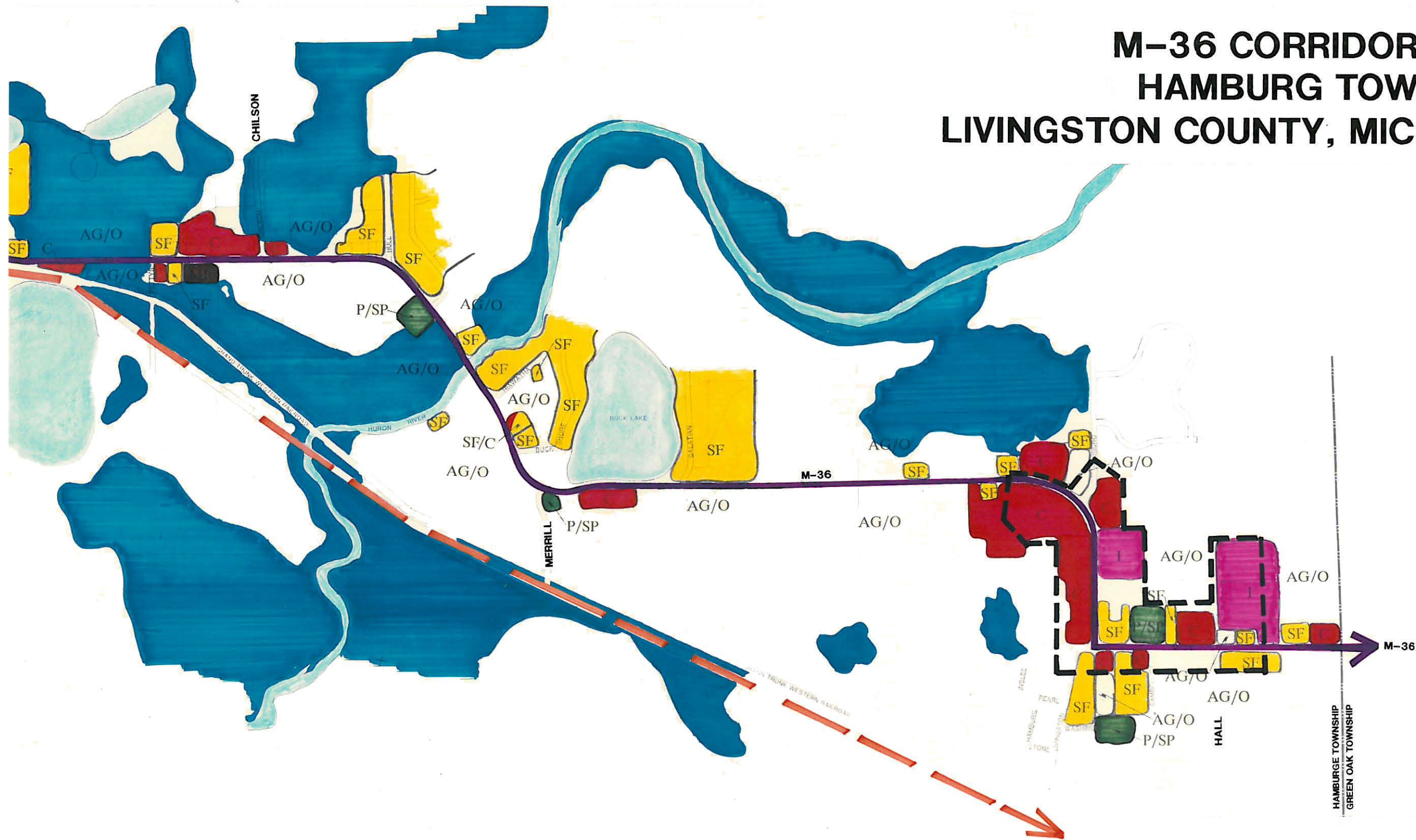
Wetlands includes all lands that are believed to meet the criteria as regulated wetlands, as defined by the Michigan Department of Natural Resources (MDNR) and Hamburg Township. All of these locations would need to be verified through a site investigation. Areas not illustrated on this map as wetlands may also contain wetlands regulated by the MDNR or the township.



- SF SINGLE & TWO FAMILY RESIDENTIAL
- MULTIPLE FAMILY RESIDENTIAL
- COMMERCIAL
- APPROVED DEVELOPMENT
- INDUSTRIAL
- PUBLIC/SEMI-PUBLIC
- AG/O AGRICULTURE, OPEN SPACE, VACANT
- WETLANDS
- SEWER SERVICE

MAP 2: EXISTING LAND USE

M-36 CORRIDOR PLAN HAMBURG TOWNSHIP LIVINGSTON COUNTY, MICHIGAN



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ENVIRONMENTAL CONSTRAINTS AND OPPORTUNITIES

The M-36 Corridor is blessed with an abundance of natural features including water features, sandy soils, woodlands, and rolling topography. These features shaped how the roadway was designed and the type of development along the corridor. The natural features and environmental conditions provide both constraints and opportunities to development. This in combination with the existing development patterns and market factors will shape the future land use pattern along the M-36 Corridor.

The natural environment is a critical element of the physical basis upon which the township developments. The various components to the natural environment function, change and interact as part of the ecosystem. A site possess natural conditions such as slope, soil conditions, vegetative cover and drainage patterns. Alterations to any of these by development must also include a counter alteration to maintain the natural balance. Not doing so will alter the system and possibly result in such things as increased erosion and sedimentation, decreased ground water recharge and increased surface runoff. To ensure that community development is compatible with the natural features of the township, all new development along the M-36 corridor needs to consider maintaining the natural functions of the environment.

The following is a brief overview of some of the major natural features that are prevalent throughout the M-36 corridor. As development occurs along the corridor, the following features should be considered in addition to other site specific conditions that may be pertinent to each individual location.

Water Features

Lakes: The central area of the M-36 corridor passes through a series of lakes which contribute significantly to the quality of life in Hamburg Township. The roadway passes within 100 feet of five lakes. These lakes are among the most valuable natural resources of the community. The combination of these many lakes and rolling hills, creates picturesque views. Lakes and rivers provide a number of recreational opportunities such as boating, fishing, and swimming. Quality lakes also enhance the value of adjacent property for residential opportunities.

Rivers/Streams: The Huron River passes through the M-36 corridor area. The Huron River is a valuable regional resource which has its headwaters in Oakland County, flows southward through the Hamburg Township, towards Ann Arbor, then discharges to Lake Erie. A vast number of communities are linked by this river in Oakland, Livingston, Washtenaw, Wayne and Monroe Counties. This river provides vital functions to the region for drainage and water supply, fish and wildlife habitat, industry and recreation. Development of the M-36 corridor should maintain or enhance this resource.

In addition to the Huron River, there are many streams and creeks that contribute to the river, as well as interconnect the many lakes. There are a total of four stream crossings by M-36. Protecting the quality of the many lakes and streams of the M-36 area, while providing the opportunity for the Township to grow, will require land use planning and engineering that considers key components of these water features.

Floodplains: Floodplains associated with water courses are vital to the stream ecosystem. Periodic flooding of these areas is critical to the types of vegetation and animal species which live here. Floodplains also

contain water during periods of high stream levels. Any alteration to the physical size of the floodplain will disrupt the streams flow during high water periods and potentially cause increased flooding elsewhere.

Above the floodplains there are steep banks or bluffs which separate the lowland and the upland. These will generally have steep slopes and be heavily vegetated. Disruption of the vegetative cover on these bluff areas may cause significant erosion problems and effect stream ecology.

Wetlands: Major wetland complexes associated with the lakes, streams and floodplains are found throughout Hamburg Township. The M-36 corridor passes near many of these wetlands. These wetlands are transitional areas between the aquatic ecosystems and the surrounding upland areas. They are low areas which are intermittently covered with shallow water and underlined by saturated soils. Vegetation which is adapted to wet soil conditions, fluctuation in water levels and the periodic flooding can be found in wetlands. Wetlands are interlinked with the hydrologic system and because of this, these wetland systems are vital to the environmental quality of Hamburg Township.



Future development in the central portion of the M-36 corridor could significantly impact wetland resources. Therefore, developers and community leaders should evaluate viable alternatives to avoid the impact. This is best done by initially considering wetland resources as constraints to development. The relative weight of these constraints must also account for other environmental and socio-economic constraints. Minimization of impacts to these resources should also take into account the cost of avoidance and the property rights of the individual. If impact is unavoidable, then mitigation should include an analysis of retaining or enhancing the wetland values to be lost.

Any wetlands which are greater than five acres in size are regulated by the Michigan Department of Natural Resources through the Goemaere-Anderson Wetland Protection Act, Public Act 203, as amended. Any activity which requires that these regulated wetlands be filled or drained requires a permit from the DNR. In addition to this, Hamburg Township Zoning Ordinance contains wetland protection standards that regulate all wetlands over three acres. Permits will generally not be granted unless the issuance is in the public interest and necessary to realize the benefits derived from the activity. If a wetland fill permit is granted, then wetlands will need to be created to mitigate the impact. The township standards also require 25 foot natural buffer zones around regulated wetlands and a 40 foot buffer zone if the adjacent upland areas have a slope greater than eight percent. This larger buffer area is important to maintaining the vegetative land cover on steep bluffs which border on many of the Townships water features.

Wetland areas are also very valuable as natural buffers between residential and commercial land uses. M-36 passes through a number of wetlands which contribute significantly to the aesthetic character. These wetlands are located in low areas adjacent to the area's many lakes and rivers. Since these wetlands are undevelopable, the open areas should remain natural. These open areas will help maintain picturesque views of the lakes. Wetland regulation has prevented recent development of many major wetland complexes within the Township. By incorporating wetlands as part of the future development of the community, they will continue to maintain open and green space as well as contribute to a more rural setting.

Drainage: Lands in the area of the M-36 corridor drain to the low lying wetlands, lakes and streams.

The soil permeability of the upland portions of the study area are moderate to moderately rapid. As these areas become developed, the amount of water infiltrating the surface will decrease and the surface runoff will increase. This will be caused by clearing of natural vegetation, addition of impervious material to the land (buildings and pavement), and installation of storm drains. These will all have the cumulative effect of increasing the peak discharge in the area rivers and streams while reducing the amount of water infiltrating to ground water. Minimization of these impacts may involve protecting native vegetation, on-site storm water retention, and clustered development.

Soils

The soils and geology in the township are characteristic of glacially formed landscapes consisting mainly of moraines (glacially deposited sands and gravel) and till plains. The underlying bedrock is a grey shale known as the Coldwater Formation. The three most abundant soil series along the M-36 corridor are Boyer-Oshtemo, Fox, and Miami. Many of the low-lying, wet areas along lakes and rivers contain alluvial materials such as Carlisle and Houghton mucks. Other soils found along the corridor are the Bronson, Gilford, and Oakville.

While the Boyer series is found throughout the corridor, it is most abundant in the central portion near the lakes. The Fox series is found throughout the corridor, but is most abundant in the western portion of the township. The Boyer series are well drained loamy sands and the Fox series are well drained sandy loams. Both are found at slopes ranging from 0-25 percent. Both soil series have moderate permeability and are good for a variety of uses. The major limitation of these soils for construction are areas where the slope exceeds 12 percent. These soils do have some significant limitations for septic fields, as their sandy texture is a poor filter.

The Miami series is predominant throughout the eastern portion of the corridor around Old Hamburg. These soils are well drained clay loams found at slopes ranging from 0 to 25 percent. The Miami series have

Wetlands serve a variety of important functions which not only benefit the natural environment, but also the community. Some of the primary values which wetlands contribute are as follows:

- Wetlands serve to mitigate flooding by detaining surface runoff.
- Wetlands control soil erosion and sedimentation loading in rivers and lakes.
- Wetlands are often interlinked with groundwater.
- Wetlands improve water quality which is degraded by such things as:
 - nutrients and chemicals from fertilizers and pesticides used in agriculture and landscaping/lawn care;
 - polluted urban run off from automobile /transportation/parking facilities, industrial and other commercial activities;
 - treated effluent from waste water treatment facilities;
 - erosion and sedimentation resulting from agricultural and construction activities.
- Wetlands are highly productive ecosystems in terms of wildlife habitat and vegetation.
- Wetlands also serve a variety of aesthetic and recreational functions.

moderate permeability and have only slight or moderate limitations for most uses. The major limitation of these soils for construction is where their slope exceeds 12 percent. Because these soils perc. slowly, they do have some significant limitations for septic fields.

Carlisle mucks and Houghton mucks are both found in the central parts of the corridor in low lying areas adjacent to the Huron River and the lakes. These soils are nearly level, very poorly drained soils containing high amounts of organic material. These mucks can be used for agriculture but have severe limitations due to wetness and low strength for any other uses. These soils are generally associated with wetlands and floodplains.

The other soils encountered in the M-36 corridor are the Bronson, Gilford, and Oakville series. Bronson is a level, poorly drained loamy sand. Gilford is a very poorly drained sandy loam found in low areas. Both these soils are not well suited for construction due to poor drainage and wetness. Oakville is a well drained fine sandy loam. These soils are well suited for construction.

The Carlisle and Houghton mucks are located in the low areas along river, streams and lakes. These are hydric soils which are not well suited for most uses. They contain high levels of organic matter which easily compressible under the weight of construction and decay when dried out. Many of these areas would not be developable as they are wetlands and/or flood plains.

The other prominent soil types, Boyer-Oshtemo, Fox, and Miami, are located in the in upland areas. Where these soils are flat enough they are well suited for construction. There are many areas of these soils where they are adjacent to lowland areas and are at a steep slope. These soil areas, while not necessarily wetlands, should be protected from disturbance. Removal of the vegetation which covers these steep hillside may cause severe erosion problems.

Woodlands and Vegetation

There is a significant amount of mature vegetation along the M-36 corridor. One of the valuable resources which contribute to the Townships natural surroundings is the woodlands. Woodlands located near the roadway contribute to a natural/rural atmosphere in a number of ways. The impact of vegetation on the motorist will be greater because of the close proximity to the roadway. A greater mass of vegetation will be within the forward view of the motorist. Other features such as buildings will have a less dominant impact on the streetscape because they fall behind the vegetative foreground. Taller trees will provide a sense of enclosure, providing a very define space bounded by vegetation. The segment which has the most trees near the right of way begins at the intersection of Galattan Road (near Merrill Road) and continues east until the Lakeland area. There is also a significant amount of vegetation along most lakes and streams throughout the area.

Topography and Key Vistas

There are a number of areas along the M-36 Corridor which have views characteristic of a rural/open space community. These are located in the second segment heading west from Hamburg Road and in the fourth segment west of Lakeland. These are both topographically high, open agricultural areas. These areas provide a wide panoramic view of the surrounding hills. These areas are characteristic of an open, rural agricultural area overlooking many of the lakes and adjacent hills



Potential Contamination Sites

There are a number of contaminated sites along the corridor which pose environmental problems. There are a total of 4 leaking underground storage tanks (UST's), 2 possible environmental clean-up priority sites (Act 307 sites) and a closed municipal land fill along the corridor.

Two gas stations, one abandoned and one presently in operation, at the intersection of M-36 and South Hamburg Roads had leaking UST's. There has been soil and ground water contamination in this area. While there has been some remediation efforts in this area, contamination at this intersection has migrated under the M-36 roadway. Any roadway improvements at the M-36 and South Hamburg Road intersection should be coordinated with the DNR Environmental Response Division. Any major construction may also involve some remediation.

Pettysville Junction Party Store, which is also a gas station located near the intersection of Pettysville Road and M-36, also had leaking UST's. The soil and ground water contamination at this site are in the process of being cleaned-up.

There is one Act 307 site along the M-36 corridor presently undergoing clean-up. The R & B Manufacturing on the east side of M-36 between North Hamburg Road and South Hamburg Road intersections is presently undergoing ground water clean-up. The site will require continual ground water pump and treatment for a number of years before it is closed-out.

There is another suspected Act 307 site adjacent to the small commercial strip center on the south side of M-36, east of Merrill Road. Perchloroethylene was detected at this site migrating southward towards the lowlands adjacent to the Lakeland Trail. This site requires further investigation to determine the source of the contamination and possible clean-up requirements.

There is a closed municipal landfill located south of M-36 approximately mid-point between North Hamburg Road and Merrill Road. Any development in this area should include an assessment of the safety of developing this site.

TRAFFIC

Roadway Traffic Levels

M-36 is a two lane state highway with gravel shoulders in a narrow 66 foot wide right-of-way with few left turn lanes, and a limited number of right turn lanes. M-36 has the dual function of moving traffic safely and efficiently, while providing access to the collector roads, local streets and adjoining parcels. Moving traffic, however, is the primary function. This type of roadway was adequate for the Township twenty years ago but given current traffic volumes and the potential for future development, road improvements are needed.

The ability to move traffic is related to the capacity of the roadway. Roadway capacity is typically measured at intersections during peak hour on a traffic engineering scale defined as Level Of Service (LOS). LOS is essentially a measure of travel delay on a scale of A through F; A being free flow and F very congested. A goal for M-36 should be to maintain a LOC C. LOS D may be an acceptable level, though, rather than losing many natural features located along the roadway as a result of widening. A general LOS C 24 hour capacity for a two lane road such as M-36 is 12,000 to 14,000 vehicles per day. The peak hourly capacity at LOS C would be approximately 1,200 vehicles per hour.

According to the Michigan Department of Transportation, the volume of traffic in 1992 on M-36 in Hamburg Township was 13,944 vehicles per day. Peak traffic levels on M-36 during the week at 5:00 - 6:00 PM average 1,030 vehicles. Thus M-36 is approaching its design volume. Actual LOS would be evaluated using turning movement volumes and average delays at the intersections. Traffic delays and volumes are approaching thresholds where traffic signals may be warranted. Township and Michigan Department of Transportation representatives will need to continue to monitor these traffic conditions.

The volume of traffic on M-36 in Hamburg Township has been growing at an average rate of 7% per year. If this trend continues, traffic levels on M-36 could reach as high as 18,000 vehicles per day by the year 2000. As stated previously, Livingston County has projected the Township's population to grow 19% between the years of 1990 and 2000. If traffic was to be projected as a function of population growth in Hamburg Township, traffic levels could be expected to reach a level of 19,500 vehicles per day. As noted earlier, recent trends have shown traffic volumes are growing at a much faster rate than population.

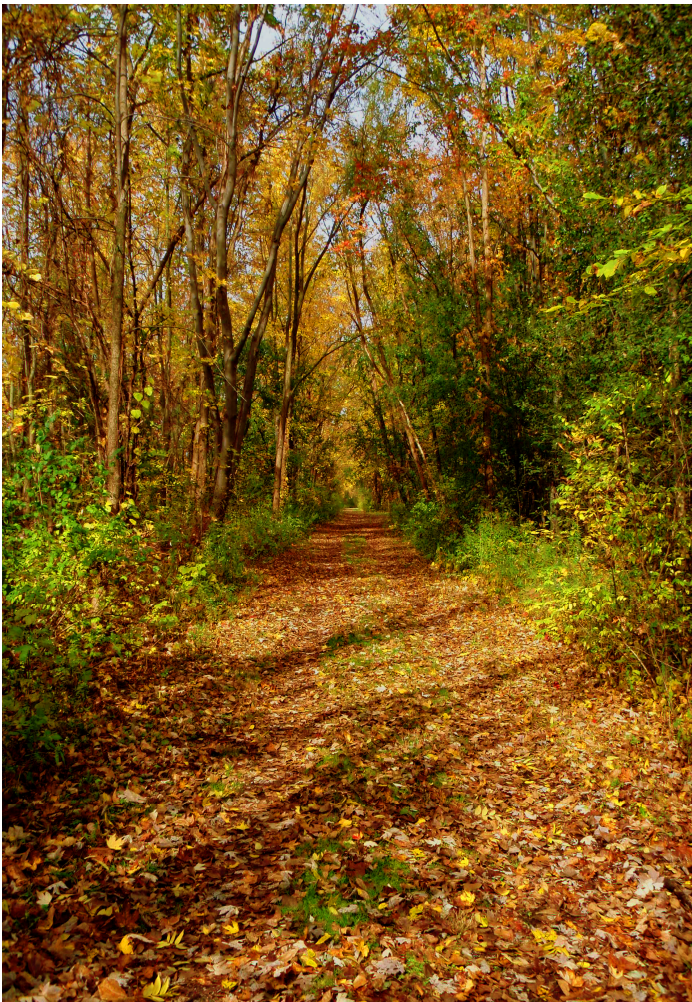
Traffic Crash (i.e. Accident) Data

Data from the Michigan Department of Transportation crash information indicated the following intersections had the highest number of crashes from 1982 to 1991: North Hamburg Road, Merrill Road, Chilson Road, Whitewood Road, Pettysville Road, and Kress Road. Most of the intersections with higher crash rates also are the higher volume intersections. In addition, most are located along a road curve. This plan did not involve analysis of crash data to review specific trends or causes. Most crashes are probably related to driver error. However, the characteristics of the intersections are briefly described below.

In addition to intersections there are some problems along M-36 with sight distance due to sharp curves and steep grades between Hamburg and Lakeland. M-36 goes through a series of curves starting at Merrill Road and ending at Chilson Road. Adequate sight distances is an important issue for any new development along the roadway.

North Hamburg: The intersection with North Hamburg Road has had the most crashes of any intersection along M-36 in Hamburg Township. Not surprisingly, this is one of the highest volume intersections. Hamburg Road has been realigned to intersect at a right angle which improves safety and traffic operations. The road curvature at the intersection still requires that a motorist drive carefully.

Merrill Road: A large number of crashes at the intersection of M-36 and Merrill Road are related to vehicles driving off the road. The sharp curve in the road at the Merrill Road intersection requires an alert driver and slow speeds.



Chilson Road: The intersection of M-36 with Chilson Road has crash problems due to vehicles rear ending each other. This intersection's crash statistics are related to the amount of traffic generated by the nearby commercial uses and the relatively high volumes at the intersection.

Pettysville Road: This intersection experiences a high number of crashes due to vehicles turning. This may be due to this roadway intersection M-36 at a curve; or impatient drivers attempting to turn without a long enough gap in the traffic flow. The Pettysville intersection has relatively high volumes and long delays for southbound traffic. Although the sight distance of this intersection is good, the high volume turning movements in combination with other factors contribute to problems.

Kress Road: This intersection has experienced a number of crashes related to vehicles turning and some resulting from vehicles driving off the road. These again may be partially associated with M-36 curving and Kress Road intersecting at this point.

PEDESTRIAN/BICYCLE FACILITIES

The primary pedestrian/bicycle facility associated with M-36 is the Lakeland Trail. There are no other major pedestrian facilities along the M-36 corridor. Some of the recent commercial developments along M-36 have added sidewalks along their frontage. The largest area where this has been done is at the intersection of M-36 and Chilson Road.

ROADWAY AMENITIES

Streetscape/Street Trees

The streetscape is an important feature influencing peoples' perception of Hamburg Township. As people move through the corridor, they perceive the environment as a series of spaces and views. A person will enter into a space which is defined by the sight distance ahead, and the objects along the side of the road such as vegetation, buildings and signs. A driver will then pass over a hill or around a bend in the road and enter into another distinct view space.

View spaces along the M-36 corridor provide a wide variety for the motorist. Many areas of the corridor are enclosed with mature native vegetation located close to the road. These areas are characteristic of the type of natural atmosphere Hamburg Township should try to preserve. Other areas are characterized by wide open fields providing spectacular panoramic views of the township. These areas are exemplary of the rural character of wide open agricultural fields.

Throughout the corridor, there are clusters of distinct commercial nodes providing variety and visual breaks. More recent commercial development has included landscaping along the road frontage. The planting of additional street trees in these areas can provide a unifying element to the varied businesses.

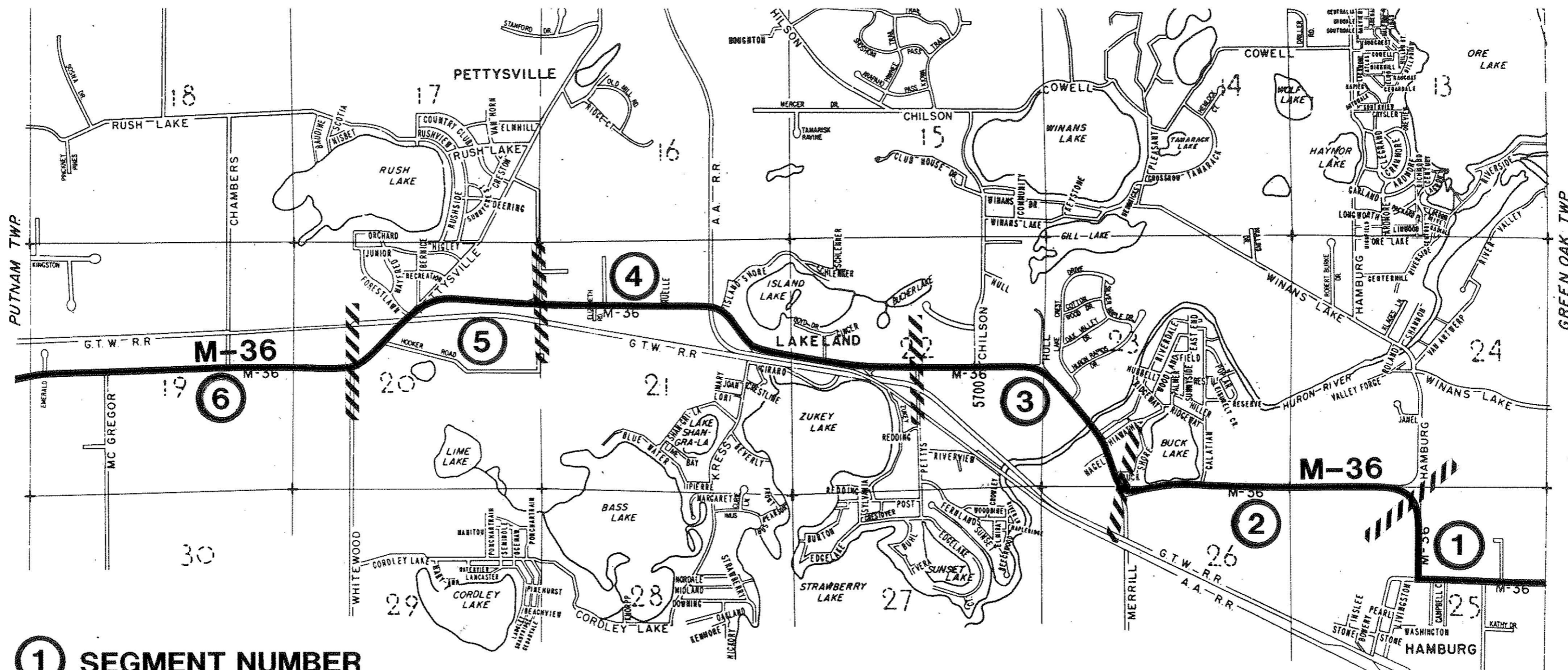
Developing a streetscape plan to define the goals for new landscaping is desired. Such a plan would help convey the township's goals to site designers. In addition to landscaping, elements that affect the perceived image along the corridor are signs, site and building design, parking lots, storage/waste receptacle locations and preservation of natural features.

Street Lighting

Street lighting is only found at a few intersections along M-36. Additional street lighting may be appropriate particularly in the Old Hamburg Village area and at commercial nodes. Street lighting could be used as a strong unifying element within each commercial node along M-36. Street lighting in non-commercial areas may not be necessary and may detract from the rural atmosphere of the community.

Signs

Signs of all shapes, types, sizes and colors are found along the corridor used for identifying commercial activities. Signs vary from low level ground signs to taller pylon signs. Excessive signs through a commercial area can be overwhelming to the motorist and reduce the effectiveness of individual signs. Many of the shoppers at local business are residents of the community and are regular patrons of the business. Therefore, along M-36 signs that identify businesses may be less important than signs that highlight sales or special events. Hamburg Township needs to balance the requirements of individual businesses to advertise with the aesthetic goals of the community. Since speeds are moderate and roadway design determines that motorists pay close attention to the road, low level ground signs are recommended.



① SEGMENT NUMBER

MAP 3
SEGMENT MAP 10/93

M-36 CORRIDOR PLAN
HAMBURG TOWNSHIP, MICHIGAN

Not To Scale



GENERAL CHARACTERISTICS WITHIN SEGMENTS

Segment 1: This segment is the eastern-most segment of M-36 within Hamburg Township. This segment from the eastern township line to Hamburg Road is the most developed segment, and includes Old Hamburg. Much of the development in this area was constructed prior to the adoption of current township ordinance regulations regarding landscaping, parking or setbacks. Landscaping in these areas is minimal: many sites have no paved parking, some parking is located within the M-36 right-of-way. Signs appear cluttered, unorganized and excessive in size. Access from M-36 in many cases consists of undefined gravel approaches.

Segment 1 contains the only industrial land uses in the Township. The industrial park located along the eastern portion of M-36 is characterized by many of the problems listed previously including poor aesthetics and unpaved parking. Unsightly outdoor storage of equipment and materials on several sites is visible from M-36. There have been a few attempts to screen storage areas, but the impact has been minimal. Part of the problem is due to grades which limit the effectiveness of screening. Plant materials are too small or spaced too far apart.

Still there are several examples of good site design as sites develop or redevelop with new zoning standards. In addition, several development have gone beyond minimum ordinance requirements. These newer sites have well defined access from M-36, paved parking, landscaping, and signs that are not confusing to passing motorist. There is also an emerging Bavarian architectural theme with some of the newer development in this area. Many of the shopping centers and industrial buildings are including Bavarian style details on facades.

Segment 2: Hamburg Road to Merrill Road contains agricultural land and open space with scattered single-family homes. The first section of this roadway heading west from Hamburg Road is a topographically high, open agricultural area. This area is a large viewshed providing a wide panoramic view of the surrounding hills. This area is characteristic of an open, rural agricultural area. A septic service business with unscreened outdoor storage of equipment and vehicles is one of the visual problems along this segment.

After passing through the open agricultural area, the road heads down a steep decline to a low lying area adjacent to Buck Lake. The slopes surrounding this low area are vegetated as is the wetlands to the north of M-36. This segment offers an excellent view of Buck Lake to the north. The lake is surrounded with single family residences.

A driver coming from the east will immediately upon passing the view of the lake, will come upon a small commercial cluster, called the Hamburg Plaza, located at the southeast corner of M-36 and Merrill Road. The Hamburg Plaza is an old commercial strip center which was developed before current zoning ordinance standards. Parking is provided in the front of the strip center. No landscaping has been provided, and access to the site is provided through a series of curbed islands. The buildings could be improved aesthetically through facade improvements and smaller, clearer signs. Reducing the number of access points could improve safety, help organize parking and provide an area for frontage landscaping. The center appears to be successful, filling a need for a neighborhood commercial use in this area. Behind the strip center there is an area of potential contamination. There is a large electrical transformer area at the southeast corner of Merrill and M-36. No screening is provided, and this facility is visible from M-36.

Segment 3: The Segment from Merrill Road to Chilson Road contains scattered single family uses and open space. One of the most significant features in this segment is the crossing of the Huron River. On either side of the river are steep slopes which are heavily vegetated. These areas should be protected from development which might threaten the vegetative buffer to the river and the stability of these slopes. The bridge appears to be wide enough to accommodate road widening, possibly up to four lanes. A conservation club owns property north of Huron River and west of M-36. The majority of this property is undeveloped open space.

Segment 4: The intersection of Chilson and M-36 is perhaps the busiest in the Township. Chilson is used as a north-south route for M-36 traffic on its way to Howell, businesses along Grand River in Genoa Township and to access I-96. At the intersection of Chilson Road and M-36 is the Hamburg Village Shopping Center. Hamburg Village is the largest strip commercial in the Township and, like some buildings discussed earlier, has adopted a Bavarian theme in signage and facade. Hamburg Village is connected with a Mobil Gas Station through a service drive. The service drive concept provides limited access (curb cuts) to M-36. This access concept should be encouraged throughout the corridor. On the south side of M-36, across from the Hamburg Village commercial center, is the only multiple family development located along M-36.

In this segment, M-36 parallels both the Lakeland Nature Trail and the active Grand Trunk Western Railroad tracks. There is one railroad crossing along this segment. The natural vegetation lining the Lakeland trail, combined with existing single-family residential uses along the north edge of Zukey Lake, screen most views of the Lake from M-36. Zukey Lake is surrounded by high concentrations of residential development, with a few commercial uses.

The unincorporated place of Lakeland is located in this segment and is made up of primarily residential uses. Lakeland has its own post office.

The portion of M-36 southwest of Oneida Lake contains the second cluster of commercial uses in this segment. The Moose Lodge, Wolverine Paint, a boat storage facility and the Video Oasis shopping center are located here. Excluding the Video Oasis complex, all the commercial uses are characterized by having parking located in the front yard setback, gravel drives from M-36 with little or no paved parking. Access, landscaping, and parking should be improved.

West of the railroad crossing is open space wetland areas, and single-family residential uses. The topography between Henry Road and the Railroad crossing is somewhat hilly, providing for limited sight distance. Views from the hill tops though, do provide a panoramic view of the surrounding countryside. Driving from the west, there is a spectacular view of the township from these hilltops overlooking many of the lakes and adjacent hills. The trees surrounding the commercial and residential development of Lakeland screen these uses from sight. These trees should be protected to maintain the quality of this view.

Island Shore has perhaps the most problems of any intersection. Island Shore is located on a curve in the road with poor sight distance due to a hill to the west of the intersection as well as railroad tracks to the west.

Segment 5: The Segment from Henry Road to Whitewood Road is characterized primarily as single-family residential and open space with a small commercial area located at the intersection of Pettysville and M-36. The Hamburg Police and Fire Station are also located within this segment.

The Pettysville intersection is very busy. Much of the traffic is generated by the concentration of residential development north of the Pettysville intersection. Although the sight distance of this intersection is good, the configuration of the intersection in combination with the curve in the road creates a confusing and hazardous intersection. A left turn lane or traffic light should be considered for this location in the future. Traffic counts could be taken at all intersection approaches periodically to determine when/if traffic levels warrant signalization.

Further west along M-36, the intersection of Whitewood which has recently been improved significantly. Whitewood is located on a curve with limited sight distance to the east because of a hill. Henry Road and Hodovan Road also have sight problems due to the topography of M-36 in this segment. Hodovan Road is poor in both directions, as it is located at the bottom of a hill.

Segment 6: This Segment from Whitewood to Putnam Township, like most of the others discussed, consists primarily of single-family residential land uses and open space. The other significant feature in this segment is the large areas of Public/Semi-Public property. Mixed in with the residential and open space uses are the Country Elementary School and the Pinckney High School and Middle School. There is very little landscaping of any consequence located at either school. There is a large single family residential development on the south side of M-36 across from the elementary school which has no vegetative buffering. Upon complete development of this subdivision, this area will take on a suburbanized appearance with a view from the road of numerous single family residential units.

Chambers Road is located in the mid-point of a hill and has very poor sight distance to the east due to the hill. West of Chambers Road, M-36 passes over Hay Creek which flows south and is a tributary to the Huron River. Either side of this river has heavily forested steep slopes. These areas should be protected from development which might threaten the vegetative buffer to the stream and the stability of these slopes.

ACTION PLAN

FUTURE LAND USE

Preserving the rural character of Hamburg Township is important to maintaining the quality community environment which continues to attract residents and businesses. This character can be diminished or lost if growth is not managed. Future land uses for the M-36 corridor are suggested in this Plan. These land uses preserve the rural character of the township and identify suitable areas for future development.(see Map 4 on pages 28 & 29) The land use categories illustrated on the Future Land Use Map are described below:

Hamburg Village is the designation used for the old village area of Hamburg. This area is proposed for a neotraditional village type setting with mixed use development including residential, commercial and office, reduced building setbacks, and a more pedestrian oriented environment.

New Hamburg Village is the area that the Hamburg village is planned to expand into. This area is also proposed for a neotraditional village type setting with mixed use development, reduced building setbacks, and a more pedestrian oriented environment. The types of development desired for this area are a mixture of residential, commercial and office, integrated to form a cohesive community environment. This area will be developed with an internal road network that is an extension of the existing grid blocks that are in the Old Hamburg Village. Development in this area will front onto the internal street network with limited access to M-36.

Medium Density Single Family Residential includes single family detached dwellings at an average density of 1 unit per acre. Most new development along the corridor is proposed for this density.

High Density Single Family Residential represents single family detached dwellings at a density of 4 units per acre. This designation is planned in areas where single family residential uses are located along lakes.

Multiple-Family Residential designates all apartments, townhouses and attached condominiums within the corridor. One location is currently designated for this use at M-36 and Chilson Road.

Mixed Use is an area just north of the Hamburg Village are designated for various types of commercial, office, industrial, research, warehousing and housing uses that are compatible with one another.

Office designation is intended for business and professional offices. These areas will be regulated under the new Office District Zoning Regulations.

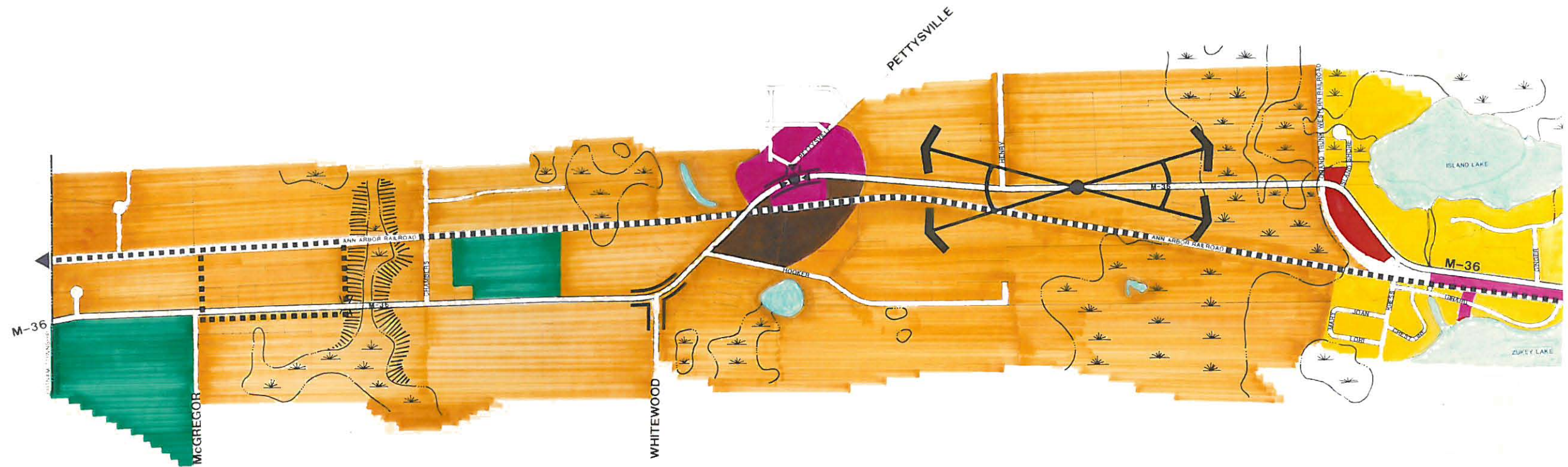
Neighborhood Commercial includes all land and buildings where products, goods or services are provided to service the residents of the immediate neighborhood areas. These uses are smaller, low traffic generating commercial services. This land use designation is for the maintenance of the existing commercial clusters located along M-36.

General Commercial includes all land and buildings where products, goods or services are provided to service a larger community area. These uses will be larger uses and will generate higher traffic

volumes. This land use designation will be used for the maintenance and some expansion of the existing commercial clusters located along M-36.

Industrial includes all lands and buildings devoted to manufacturing, processing, warehousing and related storage. This use is limited to locations north of Old Hamburg and at the eastern portion of M-36 within the Township, including the existing industrial park.

Public includes all lands and buildings devoted to governmental facilities, schools, churches, cemeteries and recreational areas.



ISSUES & GOALS

LAND USE

Issue: - The high volumes make the environment less desirable for single family development but the Township does not need or desire a continuous strip of commercial development.

Goal: - Cluster future commercial development around existing commercial areas at major intersections to create nodes that serve the residents of the surrounding neighborhoods and motorists on M-36.

SITE DESIGN

Issue: - There is a need for consistent site design standards which facilitate the orderly growth of the M-36 corridor.

Goal: - Promote improved site design for new development and redevelopment of existing sites through site development and architectural standards.

COMMUNITY CHARACTER

Issue: - The existing rural character and natural features (lakes, rivers, views, woodlands, etc.) that continue to attract residents can be diminished or lost if growth is not managed.

Goal: - Preserve the rural character of Hamburg Township by accommodating a reasonable amount of development, but ensuring the development retains or adds to the rural appearance and natural features.

TRAFFIC

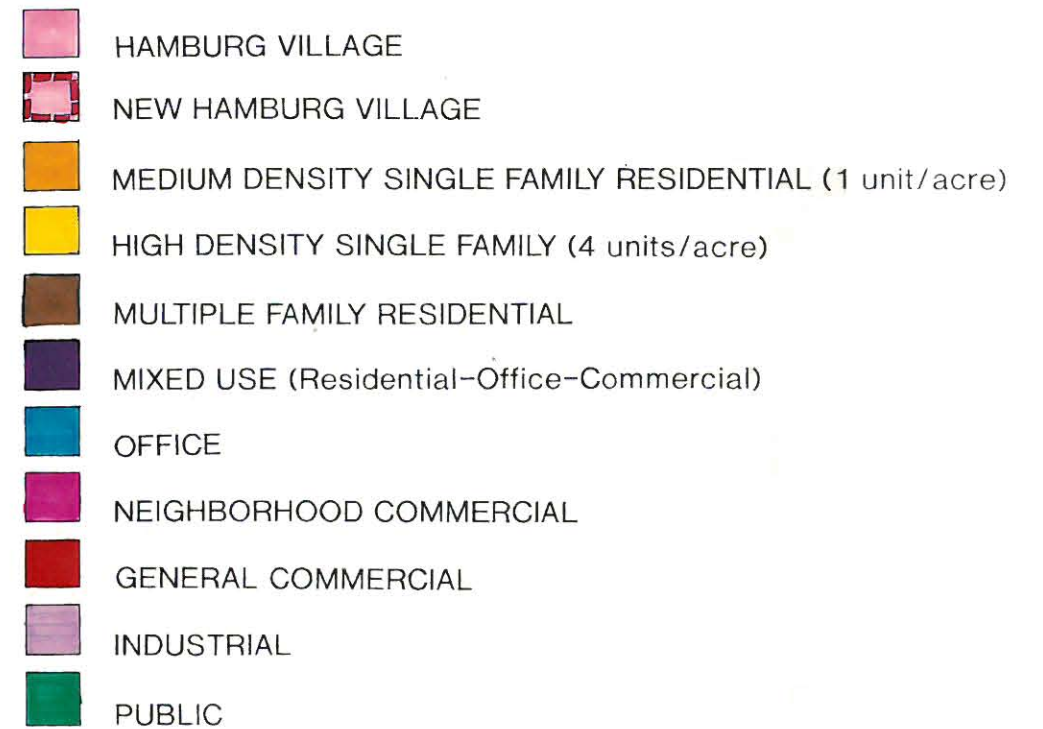
Issue: - Traffic volumes are increasing along the corridor at a much faster rate than population growth. The volumes are approaching the capacity the roadway is designed to accommodate and congestion occurs during peak hours. Continuation of the pattern of closely spaced driveways, serving individual businesses and homes, will increase potential for crashes and will hamper the corridor's ability to accommodate additional traffic without congestion.

Goal: - Increases in traffic volumes should be accommodated through selected widening of M-36, intersection or traffic signal improvements and construction of indirect access systems to serve commercial and office uses.

STREETScape

Issue: - M-36 is the most heavily used roadway in the Township, and thus for many people the image of M-36 is their image of the township.

Goal: - Existing landscaping and natural features viewed along M-36 should be preserved. Development should be situated away from the roadway and key viewsheds protected to retain an appearance of low intensity development.

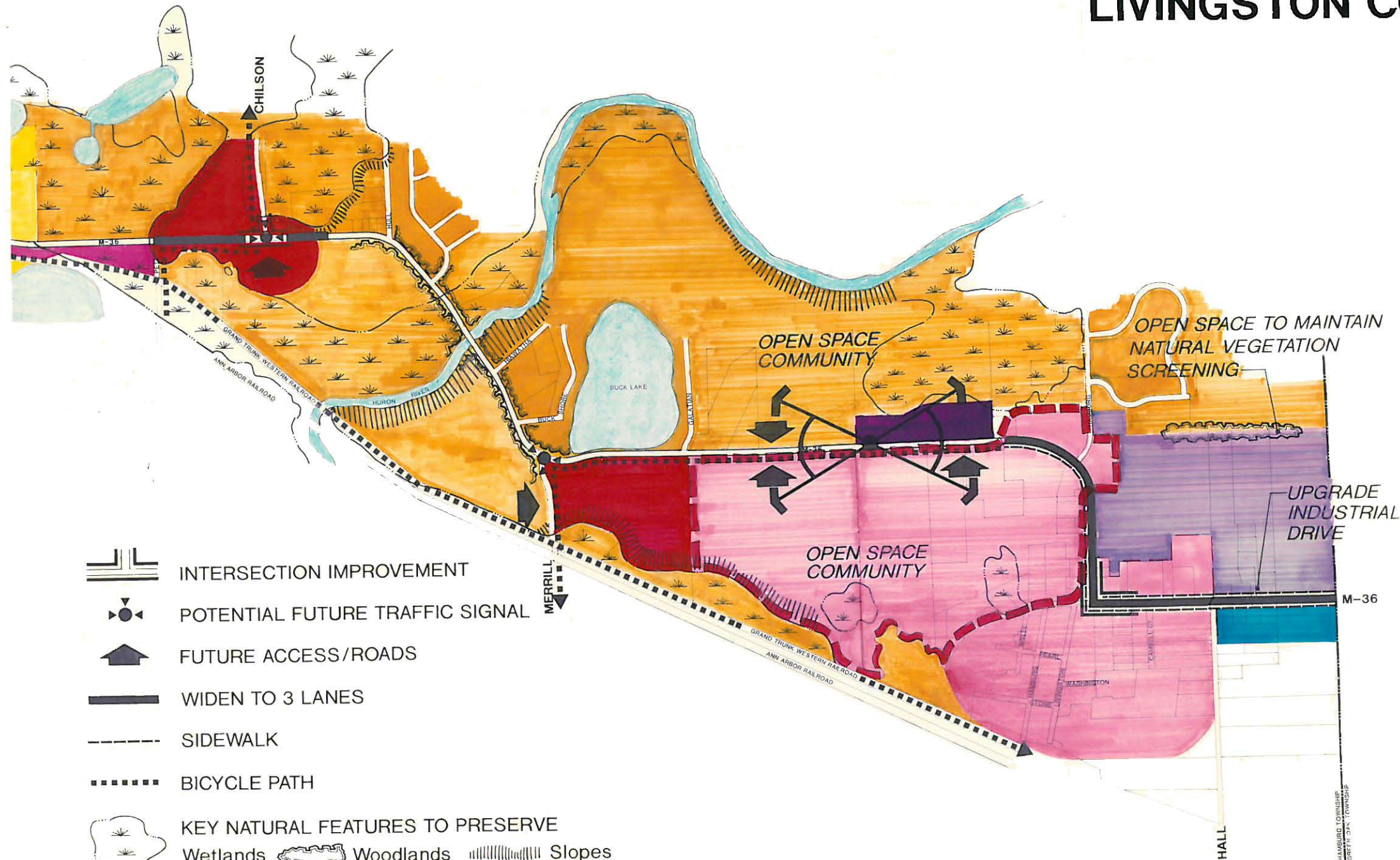











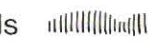

MAP 4: FUTURE LAND USE

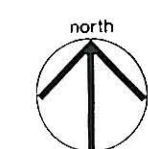
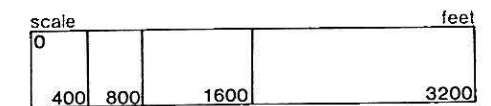
M-36 CORRIDOR PLAN

HAMBURG TOWNSHIP

LIVINGSTON COUNTY, MICHIGAN



-  INTERSECTION IMPROVEMENT
-  POTENTIAL FUTURE TRAFFIC SIGNAL
-  FUTURE ACCESS/ROADS
-  WIDEN TO 3 LANES
-  SIDEWALK
-  BICYCLE PATH
-  KEY NATURAL FEATURES TO PRESERVE
 Wetlands  Woodlands  Slopes 
-  IMPORTANT VIEWS TO PRESERVE



MCKenna
ASSOCIATES

Site Development Standards

Development patterns and building placement need to be sensitive and complimentary to the overall character of the Township.

- The corridor should not be "suburbanized" with excessive clearing of natural vegetation , deep building setbacks and large front parking lots. Excessive building setbacks create an impersonal atmosphere, overemphasize reliance on the automobile, diminish pedestrian activity and produce sterile, unattractive environments.
- Certain areas have been identified as important because of their open rural character. Development in these areas should be maintained for low to medium density single family residential development and building should be sited to minimize obstruction of views of open spaces.
- Wetlands, streams, drainage ways, steep slopes, woodlands, landmark trees, and other significant natural features should be preserved. Areas identified as needing special concern are the steep slopes and wooded areas which line the numerous rivers, lakes and streams. The Township should consider obtaining land or other means of protecting properties along M-36 where available and appropriate to preserve rural character and protect the townships water resources. The Natural Rivers and the Waterfront Residential District as well as the Wetland Protection ordinances may be revised to address some of the ecosystem considerations identified in this Plan.
- Future commercial and office development along the corridor should be directed towards areas were selected widening of M-36, intersection or traffic signal improvements and construction of indirect access systems are improved for these uses. Larger traffic generators should be located at areas that could be signalized or have good sight distance.

A number of commercial clusters are present along the corridor, each with its own role and identity. Potential locations for future commercial and office development along M-36 are listed as follows:

Table 1. Locations of Primary Commercial Nodes Along M-36

Commercial Node	Proposed Use
East Township border to North Hamburg Road	Commercial, Industrial, Office, and Old Hamburg Mixed Use
At Chilson Road	Community Commercial
Kress Road to Ann Arbor R.R. Crossing	Community Commercial
At Pettysville Road	Neighborhood Commercial

Areas recommended for less intense residential and agricultural uses are as follows:

Table 2. Primary Residential Segments Along M-36

M-36 Segment	Proposed Use
North Hamburg Road to Chilson Road	Medium Density Rural, Waterfront and Natural River Residential, and Existing Commercial
Chilson Road to Kress Road	Waterfront and Natural River Residential
Ann Arbor R.R. Crossing to Pettysville Road	Medium Density Rural
Pettysville Road to West Township Line	Medium Density Residential

Potential Amendments to the Zoning Ordinance

Changes may be made to the zoning ordinance which will help to manage growth along the M-36 Corridor.

- The Planned Unit Development and Open Space regulations should be used to encourage the conservation of critical natural areas as open space, preservation of natural vegetation along the M-36 roadway and creation of natural open space networks throughout the community.
- The Mixed Development district should be reevaluated. The area at M-36 and North Hamburg Road which is zoned Mixed Development can be added to the Old Hamburg District, which allows a mixture of commercial uses in a village type atmosphere.
- An office district is being proposed for the Hamburg Township Zoning Ordinance. Areas which are being considered for this use are 1) the area south of M-36 between Hull Road and the Township line and 2) the area south of M-36 east of the intersection with North Hamburg Road as part of the mixed use Hamburg Village. These were selected based upon accessibility, available, undeveloped land, compatibility with surrounding land uses, environmental constraints, and probability of future infrastructure improvements
- Certain changes are also suggested for the Neighborhood Service District to better guide commercial development which may have an impact on M-36 traffic. High Traffic generators such as gas stations should be special uses for both the Neighborhood Service and the Community Service Districts. The size of shopping centers should be controlled in the Neighborhood Service District. Shopping centers over 20,000 square feet should be allowed as a special land use only.
- Incentives offered by the Township might help speed redevelopment and improvement of existing sites in segment 1. Incentives could include the reduction or waiving of site plan review fees for any existing business willing to make site improvements. Special standards should be made available to interested property owners for minor site improvements, especially architecture, in conjunction with the reduction of site plan review fees. Some site upgrading should be required along the corridor when a use changes. In

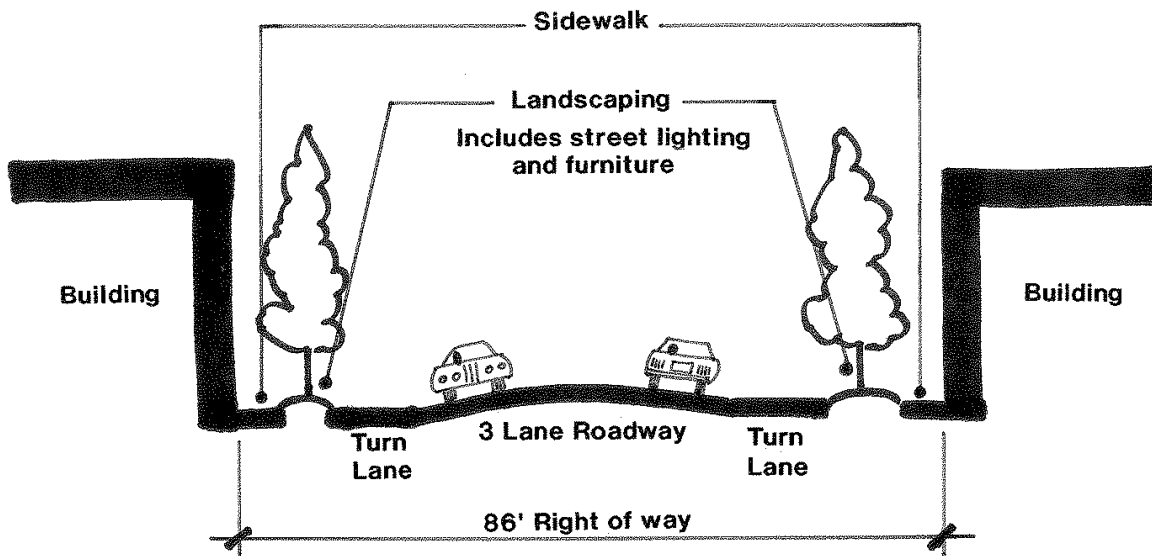
order to obtain an overall design objective or theme, the township should provide coordinated design assistance to business owners.

TRANSPORTATION

Street Redesign

Traffic volumes are increasing along the corridor at a much faster rate than population growth. A stated goal of this Plan is that increases in traffic volumes should be accommodated through selected widening of M-36, intersection improvements, installation of traffic signals, use of deceleration lanes and construction of indirect access systems to serve commercial and office uses.

- Road widening should be made along various lengths as the corridor develops. An additional lane would accommodate left turns, increase capacity and reduce potential for rear-end crashes. These improvements would include one 12 foot wide lane in each direction and a 12 foot wide left turn lane.

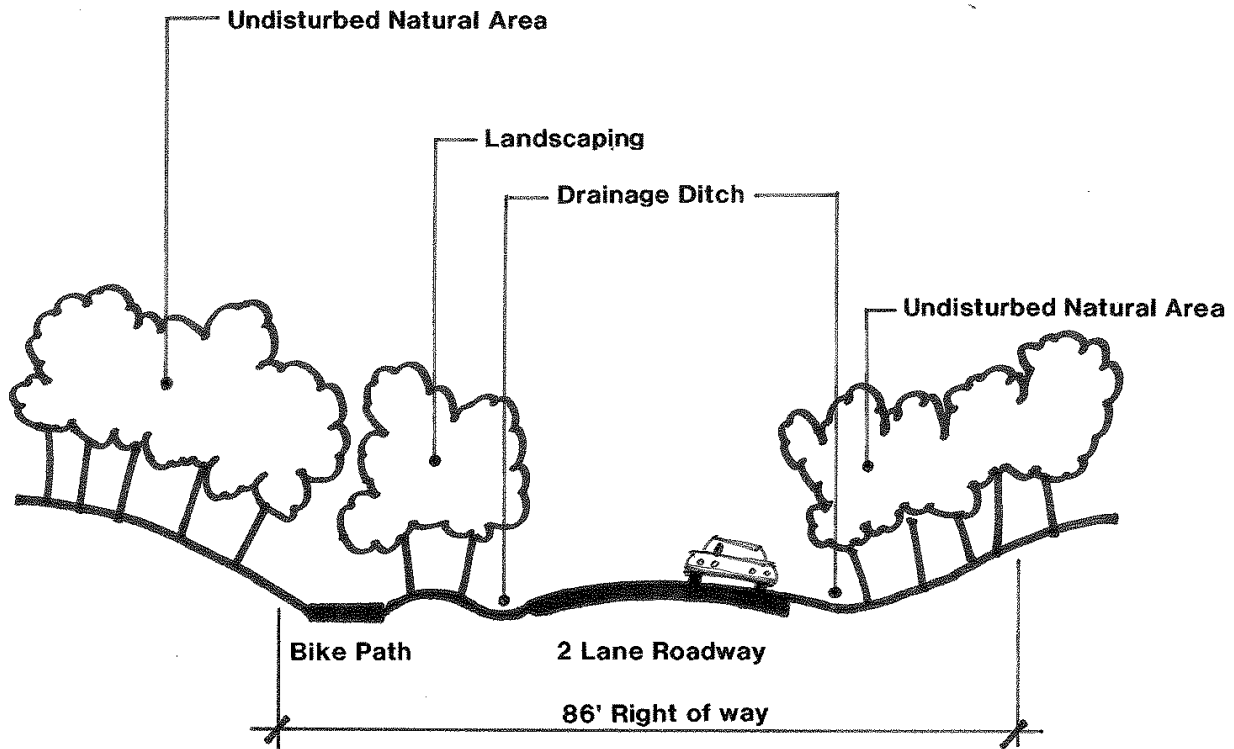


Turn lanes to occur as needed at intersecting streets

RECOMMENDED M-36 CROSS SECTION COMMERCIAL AREAS

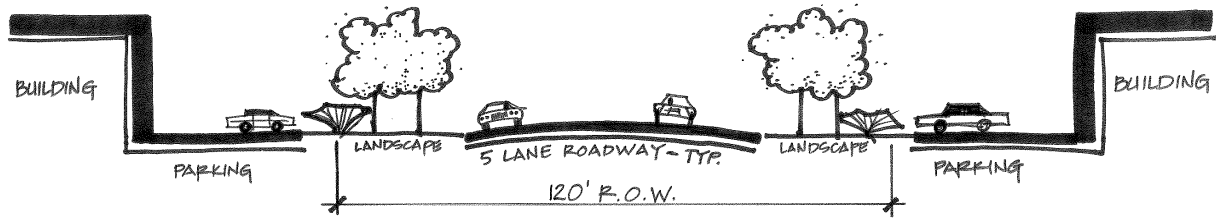
Potential locations for widening along the corridor are:

- East Township line to North Hamburg Road.
 - Pettysville Road
 - Merrill Road
 - Chilson Road to the Ann Arbor Rail Road Crossing
- In order to preserve the rural character of Hamburg Township, any future road widening should balance traffic needs with consideration of natural features. Throughout the remainder of the corridor, it is recommended that M-36 remain a two lane roadway. The narrower roads which wind through the hills and lakes of the community add to the natural rural character of Hamburg Township is having.



**RECOMMENDED M-36 CROSS SECTION
RURAL AREAS**

- The Township should also request acceleration and deceleration lanes for all development along the corridor which require site plan review.
- Road improvements should not be designed to address only peak hour traffic conditions alone, but should be sensitive to the 24 hour impacts of traffic in terms of the environment, community character and traffic conditions.
- Excessive widening of M-36 would lead to increased traffic speeds and a more suburbanized appearance. Periodic congestion may be preferred over excessive widening for through traffic.



TYPICAL SUBURBAN CROSS SECTION

- Built to accommodate traffic and individual land use access
- Not aesthetic
- Congestion and accident potential

Intersection Improvements

As stated above, traffic volumes are increasing along the corridor at a much faster rate than population growth. The lack of controls over the number and placement of driveways increases potential for congestion and crashes. Disjointed access systems conflict with the traffic movement function of M-36. A continuation of the present pattern of development will hamper the corridor's ability to accommodate additional traffic.

Selected intersection improvements should be made at locations which have experienced higher crash rates than other intersections:

- North Hamburg Road
- Pettysville Road
- Merrill Road
- Chilson Road
- Pettys Road
- Kress Road

(These intersections were identified through MDOT crash information.)

- Traffic light(s) should be requested along M-36 to provide gaps in the flow of traffic at peak travel times. Traffic light(s) may be necessary along M-36 at intersections designated as more intense commercial nodes. The Township should work with The Michigan Department of Transportation to location these if necessary.
- Reducing posted speed limits may be considered along certain segments of the roadway.

Streetscape

As stated previously, M-36 is the most heavily used roadway in the Township. For many people the image of M-36 is the image of Hamburg Township.

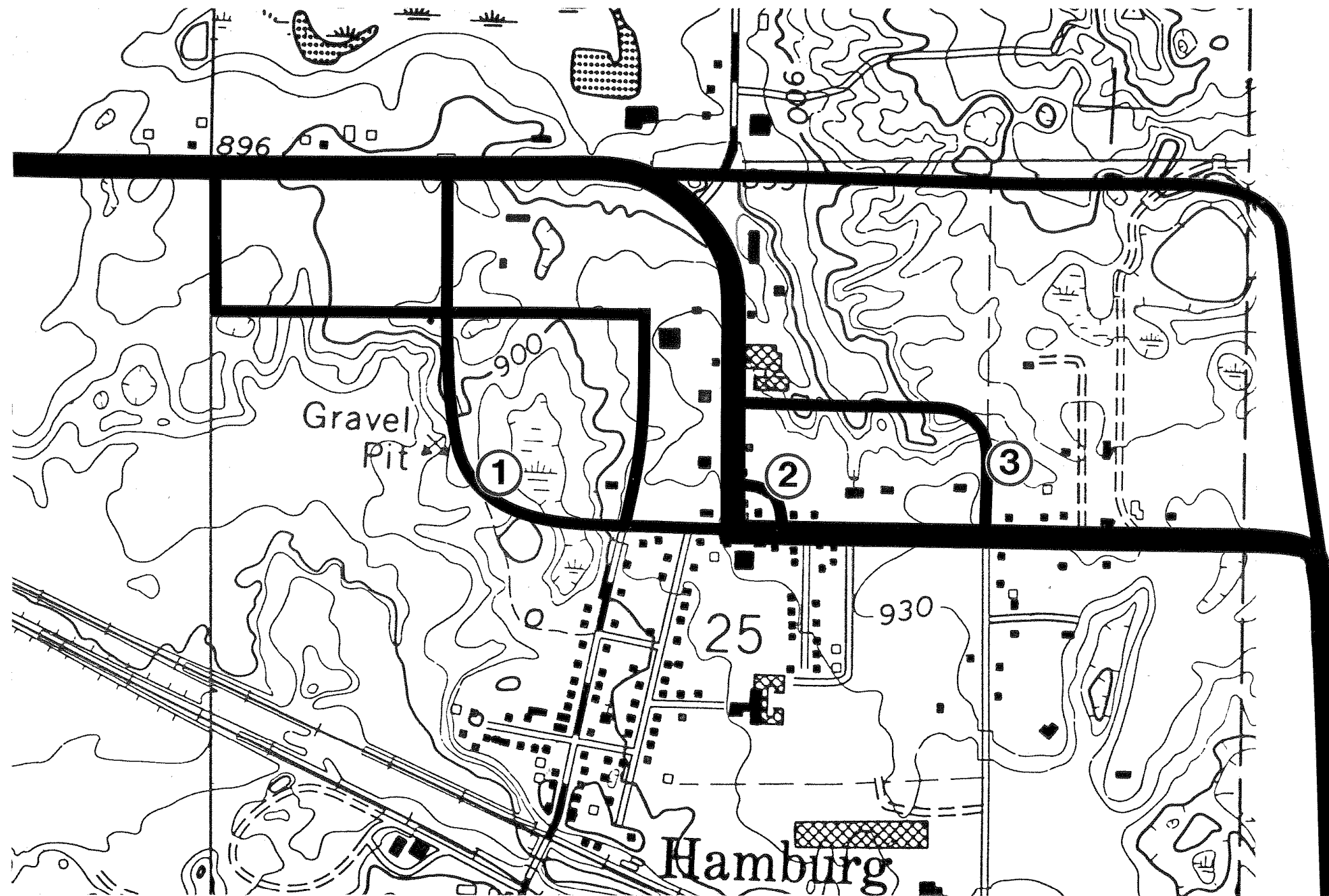
- A streetscape plan for the corridor is important to preserve existing landscaping and natural features within the M-36 right-of-way. Important views along the corridor should be preserved through building location, orientation and other site plan/subdivision standards.
- The Township should actively pursue available grant programs for street trees and other streetscape improvements.
- The Township should promote improved site design for new development and redevelopment of existing sites. The neotraditional village concept should be implemented along various sections of the corridor. The rural setting needs to be preserved along other areas.
- Landscaping and preservation of existing trees needs to be done to provide a greenbelt buffer for parking areas between the road and building. A greenbelt may include berms, shrubs, and street trees. If screening walls are used, landscaping should be placed facing the right-of-way.
- Underground utilities should be required for all new development. The Township should work with utility companies to locate existing overhead utilities underground to improve the appearance of the corridor.
- Light poles for individual sites should not exceed 30' in height.

To ensure the safety of pedestrians, the Township should encourage a more pedestrian oriented environment. Increases in the number of commercial uses, industrial facilities, and residential subdivisions along the M-36 corridor will produce additional traffic on the roadway, access drives intersecting M-36, and turning vehicles. These additional traffic problems will present an increased hazard to bicyclists on M-36 and pedestrians walking along the roadway.

- To minimize this hazard, the Township should require non-motorized paths (bike paths) for all new development or redevelopment of existing structures which requires a site plan review.
- New safety paths should be tied into the Lakeland trail project to provided continuous pedestrian access along M-36.
- An open space plan should be developed by the Township which identifies an open space network extending throughout the community and preserves the critical natural areas.

Old Hamburg Area

Some possible routes for roadways north of the Old Hamburg Area are identified. These routes provided a range of options from a more costly M-36 bypass around Old Hamburg to improvements to the intersection of M-36 and South Hamburg Road (see Map 5 on page 38). Any improvements made to M-36 at the intersection with South Hamburg Road may also involve the remediation of contaminated soils under the roadway, resulting from the leaking underground storage tanks at this intersection.



MAP SOURCE: U.S. Geological Survey, Dept. of the Interior 1975

MAP 5 – OLD HAMBURG AREA ROADWAY ALTERNATIVES
M-36 CORRIDOR PLAN
 HAMBURG TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN

EXISTING M-36 ROADWAY

ROADWAY ALTERNATIVES

- ① *Extension of Hamburg Village Grid*
- ② *Town Square*
- ③ *Hall Road Extension*
- ④ *By-Pass*



NOT TO SCALE

10/93

McKenna Associates, Incorporated
 Community Planning • Urban Design
 Farmington Hills, Michigan

M-36 Extension Option

Extending M-36 west past the intersection of M-36 and South Hamburg Road is one alternative. This roadway would extend west across the north side of the Old Hamburg Village, then curve north and rejoin M-36 west of the intersection of North Hamburg Road.

Positive aspects:

- Would open up the areas northwest of Old Hamburg for development.
- Could be developed as an extension of the neotraditional village.

Negative aspects:

- Costly option
- Some topography
- Wetlands
- Would increase traffic in Old Village area.

In addition to realignment along the M-36 route, another possible roadway extension is to extend the portion of South Hamburg Road which runs north and south through the Old Village area. The extension of this road would continue north at the point where it bends to the east. This extension would run north parallel to M-36 for approximately 800 feet then curve to the west and potentially meet up with the above mentioned extension of M-36 which continues north to the existing M-36.

Town Square Option

A second alternative is to acquire the parcel of land northeast of the intersection of M-36 and South Hamburg Road, and construct a **town square** with a roadway passing to the north.

Positive aspects:

- Would provide an open plaza for park development and a neotraditional community area.

Negative aspects:

- Would not alleviate traffic problems in Old Hamburg.
- Would place an additional intersections on M-36 near South Hamburg Road.

Hall Road Option

Another alternative being considered is to **extend Hall Road north** of M-36 approximately 600 feet, then curve to the west and continue until intersecting M-36 half way between North and South Hamburg Road.

Positive aspects:

- Would open up an area northeast of Old Hamburg for commercial and industrial development.
- Would provide an additional city block for neotraditional development.

Negative aspects:

- Steep topography
- Would place an additional intersection on M-36 between North and South Hamburg Roads.

M-36/South Hamburg Road Option

A fourth alternative is to **improve the intersection of M-36 and South Hamburg Road**, by adding a channelized right turn for west bound M-36 traffic, widening the intersection and placing a traffic signal with a protected left turn light for east bound M-36 traffic.

Positive aspects:

- Least costly option.
- Would require minimal amount of ROW acquisition.
- Would improve intersection capacity.

Negative aspects:

- Would not remove traffic from Old Hamburg.
- Improved intersection may lead to increased automobile speeds on M-36.
- Would potentially require to clean up of contaminated soils under roadway at intersection of M-36 and South Hamburg Road.

Old Hamburg Bypass Option

A complete bypass of the Old Hamburg Area is another option. This bypass could be accomplished by extending the roadway north from the curve of M-36, near the east boarder of the Township line, and rejoining M-36 at North Hamburg Road.

Positive aspects:

- Through traffic on M-36 would bypass Old Hamburg, improving traffic conditions.
- Portions of Hamburg Township east of Old Hamburg would be more accessible.
- Would provide access to areas northeast of Old Hamburg

Negative aspects:

- Most costly option
- Steep topography
- Wetlands
- Would draw traffic away from Old Hamburg businesses

SITE DESIGN

Building Siting

To promote improved site design for new development and redevelopment of existing sites, the Township should encourage the neotraditional village concept along the corridor where appropriate (reduced setbacks, mixed use development). This will create a more intimate scale in the corridor and provide an environment which is more hospitable to pedestrians. One of the important aspects of the neotraditional village is not only building relationship to the roadway, but also the spatial relationship of buildings to each other.

In areas where the wide open rural character is identified as a critical asset, buildings should be located in the background to minimize their interference with views.

- Buildings on these sites should fit into the natural topography so as to not negatively impact the visual quality of the surroundings
- Placing the buildings further back on sites and preserving an undisturbed natural vegetative buffer along M-36 should be done in wooded natural areas to maintain the natural character.
- Maintenance of natural areas and critical view corridors should be the criteria used in reviewing site plans.

Parking

To preserve the rural character of Hamburg Township, parking lots should be discouraged in the front yard setback. Parking should be encouraged within the side yards or rear yard of the site.

Impervious surface (i.e. pavement) coverage should be minimal to maximize open space and minimize drainage problems.

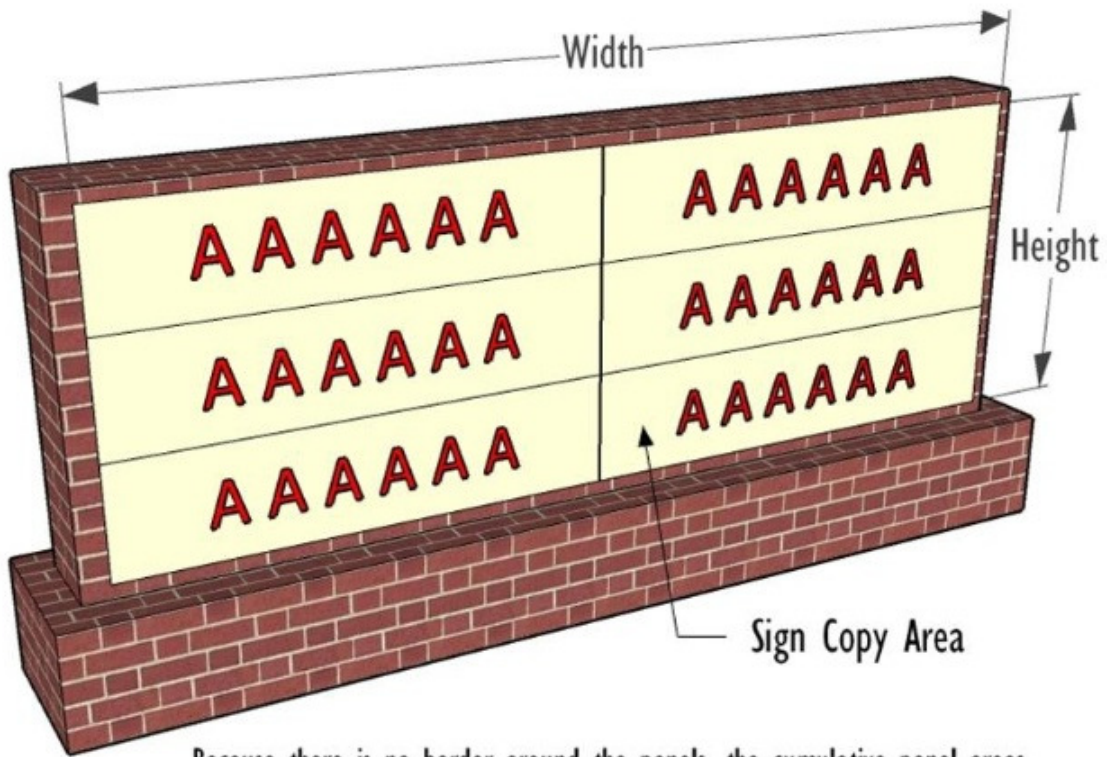
- The Township should regulate the maximum size of parking lots in addition to the minimum number of spaces required. The number of spaces required in the zoning ordinance should be reviewed to ensure they are not excessive.
- Landscape islands should be required within parking relative to size. The Zoning Ordinance should require that 10 percent of parking lot area be landscaped. This landscaping should be located internal to the parking area to help maintain natural amenities that break-up large paved areas.

Signs

Signs are an aspect of site design which has a major effect on the streetscape. While having adequate signage to advertise and draw customers is important for the viability of a business, uncontrolled proliferation of large unattractive signs not only degrades the appearance of the community, but also distracts motorists. Sign standards for the community should be strictly enforced.

- Signs should be located in relation to buildings, landscaping, natural features and other signs.

- Consolidation of signs at shopping centers should be encouraged.



Because there is no border around the panels, the cumulative panel areas encompass the total sign copy area

- Ground signs should be required in place of pylon signs for all new development.



- Each site should be given a maximum total square footage for all signs regardless of type. There should be a maximum height for all signs. Wall signs should be limited in size. Canopy signs should be regulated in regards to size and color.
- Sign materials and color should match the building materials. Portable (temporary) signs and banners should be prohibited along the corridor as well as throughout the Township.

- Sign designs should be required as part of site plan review. The design should illustrate the proposed sign size, height, material, colors and lighting.

Landscaping

Landscape standards should be strictly enforced for new development. Development needs to provide trees and other landscaping along the M-36 frontage.

- Development should maximize the amount of green through: street trees and plantings, landscape parking lot setbacks, discouraging "urban" treatments such as stone, providing trees within parking lots, and discouraging large and uninterrupted pavement areas.
- Parking lot greenbelt buffers for parking areas between the road and building are needed. A greenbelt may include berms, shrubs, and street trees. If screening walls are used landscaping should be placed facing right-of-way.
- Landscaping should blend in with the natural setting of the Township and similar plant species should be used. The Zoning Ordinance should require that a minimum of one tree and four shrubs per 30 feet of frontage. The use of berms should be minimized.
- Vegetative buffers along M-36 should be integrated with a natural, open space network for the Township.
- Critical open or natural areas should be maintained through use of the Open Space and Planned Unit Development regulations. With these development options, developers can receive density bonuses in certain areas of their parcels for maintaining critical areas in a natural state.
- The Township should promote the preservation of existing trees and landscaping between new development and the M-36 right of way. The Township should also encourage the preservation of natural shrubbery and understory vegetation in addition to trees along frontages.



- The Township should promote the use landscaping to help buffer residential areas from non-residential uses. The intensity of landscaping should be related to the potential for land use conflict. A combination of preserving existing trees, new landscaping and walls may be acceptable where lot size limits the use of landscaping or berms.
- The Township may consider planting street trees along M-36 through the Old Hamburg commercial district. Two state programs currently provide matching funds to communities for street tree planting. One is through the Michigan Department of Natural Resources and the other through the Michigan Department of Transportation.

Open Space

Open space areas should be integrated into an open space network for the corridor and the Township. This network should integrate the following areas:

- Areas which are protected from development such as wetlands and floodplains;
- Government owned natural areas such as State Recreation Areas;
- Private open space such as conservation areas of open space communities;
- Farm land;
- Areas with constraints to development such as steep slopes and dense forest;
- These open space areas are accessible to a varied group of people. Government owned natural areas are accessible to the general public while private open space such as site condo conservation areas are only open to a smaller group. The Township should try to establish a public open space network by linking public lands with bike paths along existing rights of way.
- Along M-36, the Lakeland trail has been combined with proposed bike paths to interlink some of the open space within the corridor area. These paths should also be linked with other areas of the Township, and areas in adjacent communities, as part of a comprehensive open space network.
- In addition to having open space networks for non-motorized movement, a need exists to have these networks for ecological reasons. Private open space is also important. As the Township becomes more developed, natural ecosystems will be disrupted and the rural character of the community may be altered. Providing for a natural open space which is integrated with development will help to mitigate these impacts.
 - Natural open space networks serve as habitat for wildlife. Many animals will be able to move throughout the community via these networks which should be separated from, as much as possible, major roadways.
 - The natural open space would also serve as buffers between clustered development and ecologically sensitive areas such as wetlands, streams, and wildlife habitat.

- Maintaining open space would also help to minimize increases in storm water runoff resulting from development and preserve areas for ground water recharge.
- Vegetation in the open space will help to maintain air quality by filtering out airborne particulate matter.
- Finally, natural open space will serve to maintain the Township's natural character as an open, rural community.
- Maintaining open space and natural vegetation along the M-36 frontage is essential to preserving the rural atmosphere of the township. Development along the non-commercial areas of M-36 should be set back from the roadway as possible. Natural vegetation within this setback area should be preserved to the maximum extent possible. Building location should consider preserving key vistas of open areas, water features, appealing topography and other natural features.
- The Township may also consider purchasing natural areas along M-36 and other areas such as the Huron River to preserve their visual quality.

Architecture

Township architectural standards should be developed. The development of franchise businesses, retail, commercial, etc. tend to homogenize communities and increase a lack of unique identity. Architectural guidelines can help prevent the "sameness" of franchise stores.

- Architectural standards need to be precise to be defensible. The Planning Commission should consider adopting an architecture/facades standard for the Township.
- A few predominant architectural styles are found along M-36. The township could establish an architectural theme(s) for various areas along the corridor.
- Any standards developed should allow for flexibility and individual creativity. Very specific standards which are rigidly enforced could lead to a monotony.

Building architecture is a key component of good site design. Quality architecture can help ensure that a building/use is compatible with surrounding uses. Quality architecture can also help protect the investment of adjacent landowners. Developing standards for architecture is difficult, since "beauty is in the eye of the beholder." Still, some basic guidelines for architecture should be followed.

- New buildings should be designed to preserve or complement the design character of existing development, and provide visual harmony between old and new buildings.

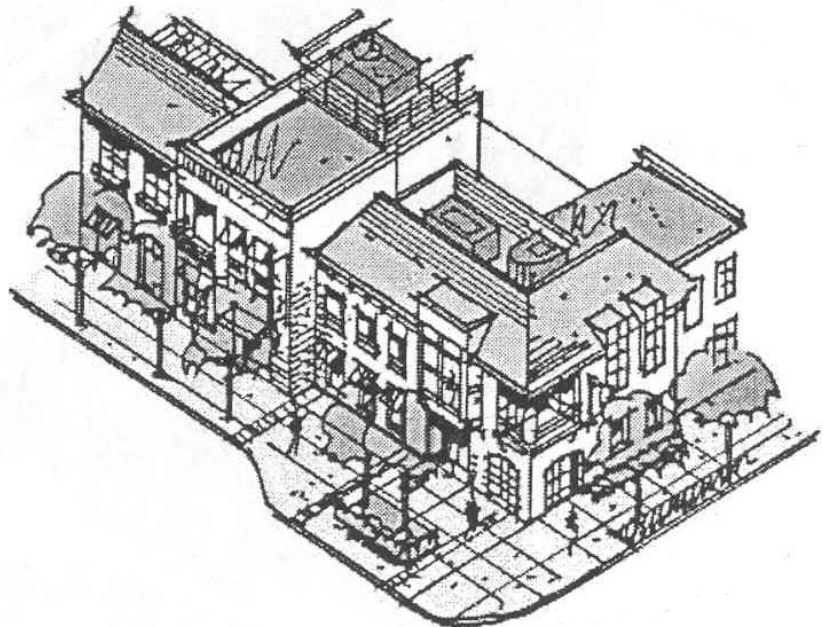
- Buildings should be designed to blend harmoniously into the streetscape. The use of unusual shapes, colors and other excessive characteristics that create visual disharmony should be avoided.



- Building additions should be designed to reflect the existing building in terms of scale, materials, window treatment and color.
- The overall appearance should be "timeless". The intent of "timeless" architecture is style and quality which continues to be admired and copied in any era. This type of building design is distinct from the "glass wall" buildings of the 1950's and 60's, and even the block buildings of the 1980's. Timeless architecture commonly includes features such as brick, peaked roofs, accent features and glass windows. Trendy design or colors should be discouraged.
- Building shapes such as Peaked roof lines, archways and other treatments should be used to give variety while complementing the existing buildings in the area.
- Brick with traditional windows are the preferred for most commercial buildings. Concrete block, aluminum siding, metal panels and plastic should be discouraged. Buildings designed to give a residential appearance is another alternative. In the Old Hamburg Village area and at the Chilson Road Commercial center, continuation of the established Bavarian theme may be desirable.



- Building walls over 100 feet in length should be broken up with varying building lines, architectural accents and trees.
- Subtle earth tone colors should be used for buildings, including the roofing material.
- Traditional facades on existing buildings should not be covered with artificial siding. Natural unpainted brick should be retained.
- Mechanical equipment or other utility hardware on the ground should be screened with plant materials. Mechanical equipment on the roof of buildings should be placed out of view or screened with materials that blend with the building.



Access Management

Typically the approach to addressing high traffic volume is to widen a road to 3.4 or 5 lanes. However, widening can disrupt the rural atmosphere of an area. Maintaining safety and smooth traffic flow along M-36 without unnecessary widening is a goal of this Corridor Plan. One technique to help preserve capacity and promote safety while delaying or avoiding the need for widening is access management.

The lack of controls over the number and placement of driveways increases potential for traffic congestion and crashes. Poor but heavily used access systems conflict with the traffic movement function of M-36. A continuation of the pattern of closely spaced driveways, which serve individual businesses and homes, will hamper the corridor's ability to accommodate additional traffic without severe congestion.

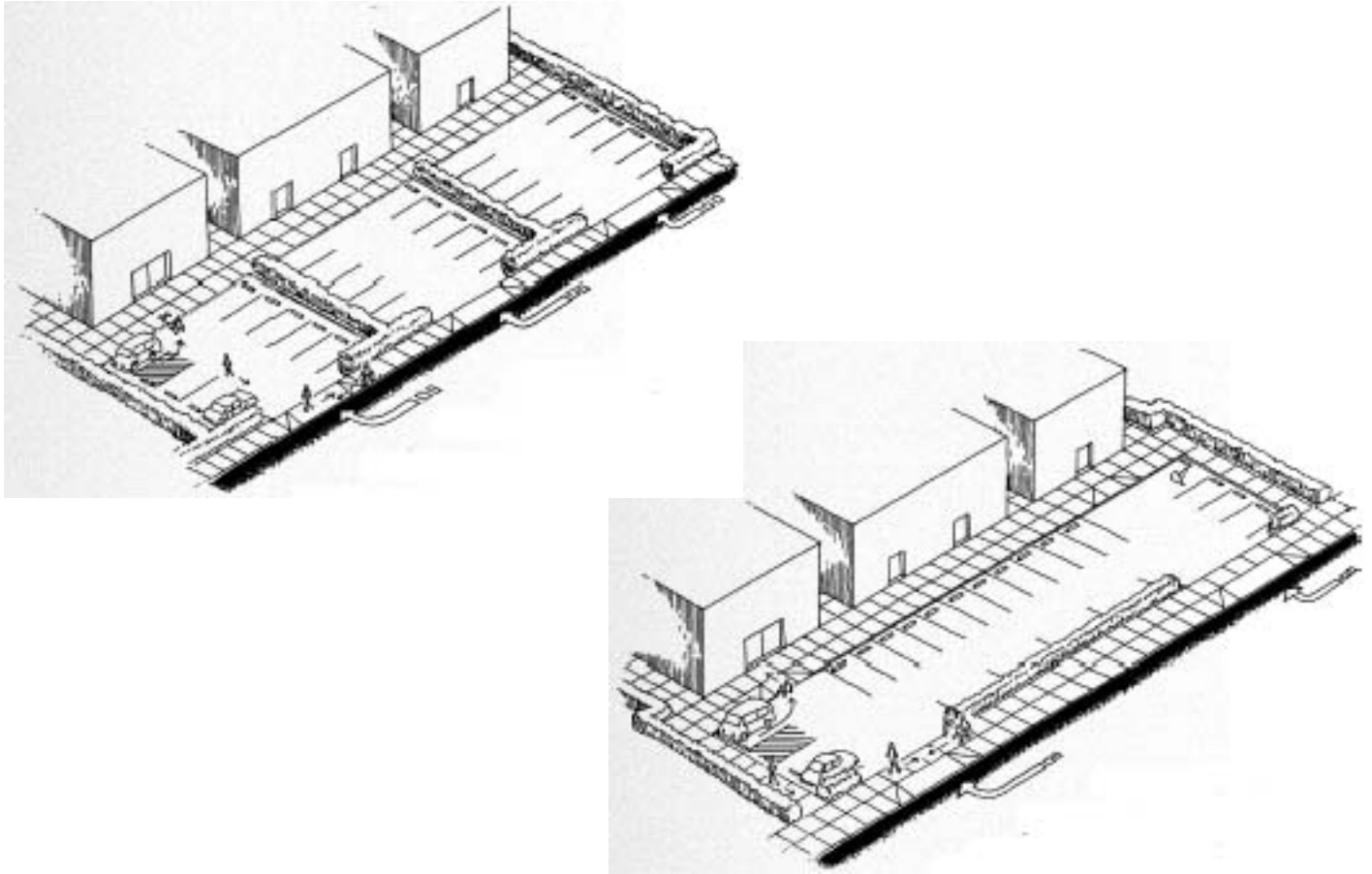
The township has the authority to place standards on access through site plan/condominium/plat review. The township may impose more stringent standards than the road agencies - The Michigan Department of Transportation along M-36, the Livingston County Road Commission along other roads. A joint, coordinated review process is recommended.

Access management involves reducing traffic conflicts (i.e. potential for crashes) and preserving through traffic flow using a variety of measures, such as:

- The number of access points should be limited to one, with allowance for more points only for very long parcels (over 600 feet) or if a traffic study demonstrates it would have a positive impact on safety and roadway operations.
- Driveways should generally be spaced a minimum of 300 feet apart, centerline to centerline; 125 feet from local street intersection and 250 feet from arterial intersections. These driveways should be aligned with those across the street or offset at least 150 feet, centerline to centerline.
- Alternative access should be encouraged, such as shared driveways, rear service drives or frontage roads (least desirable from aesthetic and operations standpoint). Such drives should be 24-30 feet wide and paved to township standards.



Commercial developments and parking lots should be connected through front or rear 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.



- Driveways should be curbed to define access.
- Certain turning movements should be limited, especially left turns, where they may create safety hazards may be created or traffic flow may be impeded.
- Deceleration tapers and left turn bypass lanes should be used to address traffic turning movements.
- Future traffic signals should be generally spaced at one mile or one-half mile points to optimize traffic flow signal progression to maximize green time).
- Locate high traffic generators on the future land use and zoning maps where they can best be accommodated by the roadway system.

- One procedure to help ensure that traffic impacts are properly evaluated is to require a traffic impact study. The zoning ordinance should be amended to require traffic impact studies under certain conditions.
 - A traffic assessment should be required to evaluate site access points for uses which are expected to generate 50-99 directional (one-way) trips in the peak hour or 500 trips in an average day.
 - A more detailed traffic impact statement should be required which evaluates impacts at site access points and nearby intersections or driveways, for uses which would be expected to generate over 100 peak hour directional trips or 750 or more trips on an average day.
 - Trip generation rates should be based on the most recent edition of Trip Generation published by the Institute of Transportation Engineers.
 - The traffic impact study should include the information and procedures recommended in the handbook Evaluating Traffic Impact Studies prepared by the Michigan Department of Transportation, Southeast Michigan Council of Governments (SEMCOG) and Tri-County Regional Planning Commission.

The traffic impact study should address site access issues, such as the potential to share access or use service drives. The study should analyze options to mitigate traffic impacts, such as changes to access or improvements to the roadway.

APPENDIX A

M-36 Overlay Zone Ordinance

Sec. 1.00 Intent

Hamburg Township officials recognize that M-36 is an important transportation corridor through the community. M-36 serves as the virtually only major east-west transportation route through the Township and provides connections with the major north - south routes. The intent of the M-36 Overlay Zoning District is to provide specific standards for the corridor to preserve capacity, natural features, and preservation of the rural character of the Township while accommodating a reasonable amount of growth.

Among the specific purposes of the Corridor Overlay Zoning District are:

- Encourage efficient flow of traffic by disrupting conflicts from turning movements.
- Requiring longer frontages than in other zoning districts to help achieve access management goals.
- Make land use decisions with the transportation system to maximize the capacity of the road by limiting and controlling the number and location of driveways and requiring alternate means of access through share driveways, service drives, and access off cross streets.
- Maximize the Capacity of Road way to delay or avoid premature widening which would detract from the character of the Township.
- Require low level signs to minimize motorist distraction, avoid blight and clutter, promote aesthetics, unify signage with the overall character desired in the corridor while providing property owners and businesses with an appropriate mechanism in which to identify their location and business.
- Achieve the rural and village character by requiring buildings to be located relatively close to the roadway and parking for commercial businesses be located in the rear or sides.
- Preserve future capacity needs in a timely manner and minimizing disruption of existing businesses through preservation of additional right-of-way which may be necessary to widen the road in the future. The additional right-of-way will also promote aesthetics and traffic safety along the corridor in the interim.
- Require planting of landscaping in sites along the corridor as developed to attain the rural character and complement existing natural features along the corridor.
- Promote preservation of existing natural features, including wetlands, steep slopes, woodlands, and natural drainage patterns.
- Promote alternative means of transportation through development of sidewalks and bikepaths along M-36 and connections between the path transportation systems in the Township and new developments.
- Promote architecture that complements the character of Hamburg Village architecture and the established architectural theme in the Village of a unifying factor along the corridor.

Sec. 2.00 Principal Uses Permitted

Special land uses within the M-36 Corridor Overlay Zoning District include special uses identified for the underlying zoning districts along with their permitted incidental accessory uses, buildings and structures.

Sec. 3.00 Signs

Each business along M-36 shall be permitted one monument sign, a maximum of 10 feet in height and 80 sq. ft. of sign area, an additional 40 sq. ft. of sign area shall be permitted for frontages of over 200 sq. ft. Lots with frontages over 600 sq. ft. may erect two monument signs with a total sq. ft. of 160 sq. ft.

Properties with frontages on two streets shall be permitted two monument signs, one in the frontage along each street as at least 100 feet.

Wall signs shall cover a maximum 5 percent of the facade.

The Planning Commission may grant a sign area bonus of up to 15 percent, during site plan approval, for signs which are determined as being innovative and contributing to the rural character of Hamburg Township.

Sec. 4.00 Driveways

Driveways along the corridor shall be located as follows:

- a. Each lot should be permitted one driveway, and additional driveway maybe permitted by the Planning Commission if the spacing criteria listed below are met and a traffic impact study justifies an additional driveway will not create negative impacts on through traffic flow. The second driveway shall be permitted on frontages of over 500 feet.
- b. Spacing: Driveways shall be spaced a minimum of 185 feet from driveways on the same side of the street, centerline to centerline.
- c. Driveways shall be aligned with driveways on the opposite side of the street or spaced a minimum of 150 feet, centerline to centerline.
- d. Driveways shall be spaced at least 125 feet from an intersection of a private road or public street measured from near pavement edge of the street to near pavement edge of the driveway throat.
- e. The Planning Commission may permit tow one-way driveways rather than a single dual movement driveway for particular uses, but generally one-way driveways should be discouraged.
- f. The Planning Commission may require the construction of frontage roads or rear service drives along parcels to connect future or existing developments. In particular the Planning Commission shall require development of service drives where noted in the M-36 Corridor Plan, where service drives can provide access to signalized locations, where service drives may minimize the number of M-36, and as a means to achieve (?). Where service drives and frontage roads are constructed the access shall be setback at least 60 feet from intersections and rights-of-way.
- g. The applicant shall submit a letter from the Michigan Department of Transportation (MDOT) or Livingston County Road Commission as appropriate; indicating that the site distance at the access location proposed is adequate.

Sec. 5.00 Right-of-Way Preservation

Projects along the M-35 Corridor shall provide right-of-way of 50 feet from the centerline of M-36. Setbacks shall be measured from the new right-of-way line.

- a. **Parking Lot Location:** Parking lots along the M-36 Corridor shall be behind the front building line (i.e. on the side or rear of the building). The Planning Commission may allow an exception of two rows of parking with one aisle where service drives are provided.
- b. **Landscaping:** Development and redevelopment along M-36 shall provide one canopy or evergreen tree and four shrubs per each 30 feet of linear frontage. The species of tree shall either complement existing native trees on the site or be from the plant list recommended in the M-36 Corridor Plan.
- c. **Sidewalk/Bikepath:** Installation of a sidewalk or bikepath shall be required for all new development or redevelopment of existing parcels along the frontage of M-36. The Planning Commission required construction of the pedestrian facility or posting a performance bond to cover the cost of constructing a facility in the future

APPENDIX B

Traffic Impact Study Ordinance

Sec. 101 Intent

Hamburg Township recognizes the direct correlation between land use decisions and traffic operations. The intent of this ordinance is to permit accurate evaluation of expected impacts of proposed projects to assist in decision-making. This ordinance is further intended to help achieve the following objectives:

- Provide a standard set of analytic tools and format for preparing traffic impact studies.
- Allow the community to assess the effects that a proposed project may have on the community by outlining information needed and evaluation procedures to be used.
- Help ensure safe and reasonable traffic operating conditions on streets and intersections after development of the proposed use.
- Reduce the negative traffic impacts created by individual developments, and which may negatively impact such developments, by helping to ensure the transportation system can accommodate the expected traffic safely and efficiently.
- For rezonings, the traffic impact study is intended to evaluate if the rezoning is timely and, if inconsistent with the master plan, if the rezoning would be a logical alternative to the master plan.
- Realize a comprehensive approach to the overall impacts of various developments along a corridor or within part of a community rather than a piecemeal approach.
- Provide direction to community decisions makers, road agencies and developers of expected impacts of a project.
- Alert the community, transportation agencies and developers of improvements or modifications needed to the roadway, access or site design.
- Protect the substantial public investment in the existing street system.

Sec. 102 Definitions

The following terms used in this Chapter shall be defined as follows:

Development: A site plan, subdivision tentative preliminary plat, condominium project, mobile home park, redevelopment, reuse or expansion of a use or building.

Gap (Critical gap): The median time headway between vehicles in a major traffic stream which will permit side-street vehicles at STOP or YIELD controlled approach to cross through or merge with the major traffic stream under prevailing traffic and roadway conditions, in seconds.

Level of Service: A qualitative measure describing operational conditions within a traffic stream; generally described in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety.

Master Plan: The plan adopted by the Hamburg Township Planning Commission which illustrates the intended future land use pattern and may also describe roadway functional classifications and intended improvements to the transportation system (a.k.a. Comprehensive Plan, Future Land Use Plan, Thoroughfare Plan, etc.)

Peak Hour: A one hour period representing the highest hourly volume of traffic flow on the adjacent street system during the morning (a.m. peak hour), during the afternoon or evening (p.m. peak hour); or representing the hour of highest volume of traffic entering or existing a site (peak hour of generator).

Study Area: The geographic area containing those critical arterial intersections (and connecting highway segments) which are impacted by the site-traffic generated by the development.

Trip (i.e. Directional Trip): A single or one-direction vehicle movement with either the origin or the destination (exiting or entering) inside a study site.

Sec. 103 Applicability

A traffic impact study shall be required and shall be submitted by a petitioner for a rezoning, site plan or subdivision plan under any of the following situations.

a. Rezoning and Master Plan amendment requests:

1. Request for a rezoning consistent with the Township Master Plan when the community believes the timing of the change may not be appropriate due to traffic issues. This threshold is recommended only for a rezoning which permits uses that could generate 100 or more directional trips during the peak hour, or 1,000 or more trips per day, than the majority of the uses that could be developed under current zoning.
2. Request for a rezoning which is inconsistent with the master plan or for a site along corridor identified as a critical/congested/safety management corridor in the Master Plan or Long Range Transportation Plan when permitted uses could generate 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. Proposed amendments to the Master Plan which would suggest more intense uses.

b. Development Proposals: site plans, plats, mobile home parks and condominium projects

1. Any proposed development which would be expected to generate over 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. A study focusing on site access operations is required for projects which could generate 50-99 directional trips during a peak hour.
2. Any proposed development along a corridor identified in the Township Master Plan or Long Range Transportation Plan as a critical or congested corridor (segments currently or projected to experience significant congestion or relatively high crash rates) which would be expected to generate over fifty (50) directional trips during the peak hour of the traffic generator or the adjacent streets, or over five hundred (500) trips in an average day.
3. For new phases or changes to a development where a traffic study is more than two (2) years old and roadway conditions have changed significantly (volumes increasing more than 1-3 percent annually).
4. A change or expansion at an existing site where the increased land use intensity is expected to increase traffic by at least fifty (50) directional trips in a peak hour.
5. Special land uses or conditional land uses and planned unit developments which are required specifically to provide a traffic impact study in the municipal zoning ordinance.
6. A change in the previously intended use within a Planned Unit Development (PUD) to a more intense use (on a case-by-case basis)
7. Where required by the Livingston County Road Commission to evaluate access issues. Typically this is based on an access code, administrative rules or policy.

Sec. 104 Traffic Impact Study Contents:

- a. Description of the site and surroundings:** Illustrations and a narrative should describe the characteristics of the site and adjacent roadway system (functional classification, lanes, speed limits, etc.). This description should include surrounding land uses, expected development in the vicinity which could influence future traffic conditions, special site features and a description of any committed roadway improvements.
- b. Description of the requested zoning or use**

 - 1. For a rezoning or Master Plan amendment request: a description of the potential uses which would be allowed compared to those allowed under current zoning. If the use is not consistent with the Township's Master Plan, an explanation of the difference should be provided.
 - 2. For a site plan review, mobile home park, condominium project or subdivision tentative preliminary plat, or Special Land Use: a description of factors such as the number and types of dwellings units, the gross and usable floor area, the number of employees and shift change factors. Any intended phasing or future expansion should be noted.
- c. Description of existing traffic conditions**

 - 1. Traffic counts: Existing conditions including existing daily and peak hour traffic volumes on adjacent street(s). Existing counts and level of service for intersections in the vicinity which are expected to be impacted as identified by the Township at a pre-application conference or discussion should be provided for projects expected to generate at least 100 peak hour directional trips or at least 750 trips during an average weekday. Traffic count data shall not be over two (2) years old, except the Township or County Road Commission may permit 24 hour counts up to three (3) years old to be increased by a factor supported by documentation or a finding traffic has increased at a rate of no more than two percent (2%) in the past 3-5 years.

Traffic counts shall be taken on a Tuesday, Wednesday or Thursday of non-holiday weeks. Additional counts (i.e. on a Saturday for a proposed commercial development) may also be required in some cases. The individual or firm performing the impact study shall obtain the traffic counts during average or higher than average volume conditions (i.e. regarding weather or seasonal variations and in consideration of any construction or special events) for the area under study.
 - 2. Roadway characteristics shall be described and illustrated, as appropriate. Features to be addressed include lane configurations, geometrics, signal timing, traffic control devices, posted speed limits, average running speeds and any sight distance limitations. Existing levels of service shall be calculated for intersections included within the study area.
 - 3. Existing driveways and turning movement conflicts shall be illustrated and described.
 - 4. The existing right-of-way shall be identified along with any planned or desired expansion of the right-of-way requested by the Livingston County Road Commission.
 - 5. Traffic crash data and analysis covering the most recent three (3) years for the study area or proximity to site access points may be required by the township, particularly for sites along roadways identified as critical or congested corridors.

d. Trip Generation

1. Forecasted trip generation of the proposed use for the a.m. (if applicable) and p.m. peak hour and average day. The forecasts shall be based on the data and procedures outlined in the most recent edition of the Trip Generation published by the Institute of Transportation Engineers (ITE). The applicant may use other commonly accepted sources of data or supplement the standard data with data from at least three (3) similar projects in Michigan.
2. For rezoning requests where a traffic study is required, the study should contrast the traffic impacts of typical uses permitted in the requested zoning district with uses permitted in the current zoning district. The determination of typical uses shall be made by the Planning Commission.
3. Any trip reduction for pass-by trips, transit, ridesharing, other modes, internal capture rates, etc. shall be based both on ITE recommendations and documentation for the specific uses. The Township may elect to reduce the trip reduction rates used.
4. For projects intended to be developed in phases, the trip generation by phase shall be described.

e. Trip Distribution

The projected traffic generated shall be distributed (inbound v. outbound, left turn v. right turn) onto the existing street network to project turning movements at site access points, and nearby intersections where required. Projected turning movements shall be illustrated in the report. A description of the application of standard engineering procedures for determining the distribution should also be attached (gravity model, market studies, counts at existing driveways, etc.). For projects of regional significance, a network model projection may be required.

f. Impact Analysis

1. **Background Traffic Rates:** For any project with a completion date beyond one (1) year at the time of the traffic study, the analysis shall also include a scenario analyzing forecasted traffic at date of completion along the adjacent street network using a forecast based on a network model (if available), historic annual percentage increases and/or future development in the area which has been approved.
2. Level of service or "capacity" analysis at the proposed access points using the procedures outlined in the most recent edition of the Highway Capacity Manual published by the Transportation Research Board. Before and after capacity analyses shall also be performed at all street intersections where the expected traffic generated at the site will comprise at least five percent (5%) of the existing intersection capacity, and/or for roadway sections and intersections experiencing congestion or a relatively high crash rate, as determined by the Township or Livingston County Road Commission.

Option: Capacity analysis for intersections identified at the pre-application conference.)
3. Gap studies for unsignalized intersections.

4. Hamburg Township may require that the impact on the street network be evaluated for a project of regional significance if a network model is available.

g. Access design/Access management standards

The report shall include a map and description of the location and design of proposed access (driveways or new street intersections) including: any sight distance limitations, dimensions from adjacent driveways and intersections within 250 feet on either side of the main roadway, data to demonstrate that the number of driveways proposed is the fewest necessary, support that the access points will provide safe and efficient traffic operation and be in accordance with the standards of Hamburg Township and the Livingston County Road Commission.

h. Other study items

1. The traffic impact study shall describe need for or provision of any additional right-of-way where planned or desired by the Livingston County Road Commission.
2. Changes which should be considered to the plat or site plan layout.
3. Description of any non-motorized facilities.
4. If the use involves a drive-through facility, the adequacy of the (queuing stacking) area should be evaluated.
5. If a median crossover is desired, separate analysis should be provided.
6. If a traffic signal is being requested, the relationship of anticipated traffic to traffic signal warrants in the Michigan Manual of Uniform Traffic Control Devices. Analysis should also be provided on the impacts to traffic progression along the roadway through coordinated timing, etc.

i. Mitigation/Alternatives

Outline mitigation measures and demonstrate any changes to the level of service achieved by these measures. Any alternatives or suggested phasing of improvements should be described. The mitigation measures may include items such as roadway widening, need for bypass lanes or deceleration tapers/lanes, changes to signalization, use of access management techniques or a reduction in the proposed intensity of use. Any mitigation measure should include correspondence from the Livingston County Road Commission. The responsibility and timing of roadway improvements shall be described.

j. Qualifications

The qualification of the preparer shall be provided in the study. A required traffic impact study must be prepared under the direction of a traffic/transportation engineer registered in Michigan (PE) with a history of completing impact studies and other traffic engineering analyses. The preparer’s resumes or experience list should accompany the report.

Option: Hamburg Township may allow preparation by a transportation planner for certain types of studies. Involvement of a transportation planner is recommended for large scale projects of regional significance.

Sec. 105 Procedures

1. The applicant shall discuss or meet with the Zoning Administrator to determine if a study is needed, what type of study is needed and specific items to be addressed.
2. Applicant submits traffic impact study to the Township, with the request for rezoning or development proposal.
3. Hamburg Township distributes the traffic impact study to the appropriate road agencies, and adjacent community, if appropriate. A copy may also be submitted to the Livingston County Planning Department as appropriate for projects of regional significance or along critical corridors.
4. Livingston County Road Commission provides Hamburg Township with comments prior to any action on the project.

Sec. 106 Appeals

The requirement for a Traffic Impact Study, as provided above, may be waived/modified following consultation with the Livingston County Road Commission by the Township Engineer, Zoning Administrator, Planning Commission or Board of Appeals. Reasons for the waiver or modification shall be documented. Factors to be considered include:

1. Roadway improvements are scheduled which are expected to mitigate any impacts associated with the proposed project.
2. The existing level off service along the roadway is not expected to drop to C due to the proposed project.
3. The existing level of service is not expected to be significantly impacted by the proposed project due to specific conditions at this location.
4. A similar traffic study was previously prepared for the site and is still considered applicable.