OTHER TRANSPORTATION ISSUES/CONCERNS

Areas of concern

Transportation needs do not occur independently of land use considerations. Consequently, the TwinCATS committees have identified a list of community concerns, primarily related to land use, that have a direct impact on the area's transportation network. These concerns are as follows:

- The Hollywood Corridor – There is much current development and much available land along Hollywood Road in both St. Joseph and Royalton Townships. In the findings of a recent corridor study, continuing growth of Lakeland Medical Center required road and drainage improvements and included a new bridge over I-94.
- Harbor Shores – A significantly large residential and commercial development involving three local units of government (described in "Regionally Significant Projects") Surface transportation circulation concerns exist as well as public transit service concerns to and from the development.
- Commercial development in Benton Charter Township – There is a need for non-motorized facilities and an access management plan.
- The continuing residential, commercial, and light industrial developments in Royalton, Lincoln, St. Joseph, and Lake Townships. Especially the proposed new Meijer store on St. Joseph Ave in Lincoln Township.
- The proposed US 31 connection to I-94, east of Business Loop I-94.
- The continuing expansion of the Southwestern Michigan Regional Airport and its surrounding industrial areas.
- The continuing growth of the Lake Michigan College/Western Michigan University complex along Napier Avenue is a potential issue. Traffic on Napier is a concern, especially at the I-94 interchange. This concern will be alleviated upon the completion of US-31 at I-94.
- The locally-driven interests in providing pedestrian and bicycle routes and connections among the various jurisdictions in and around the TwinCATS area remain a focus in the area.
- The growing national and regional concern for alternative forms of transportation to the single passenger car for commuting to and from work.
- The desire to preserve the existing rural character and the viability of agriculture. These issues are dependent on property owners' decisions and the local

implementation of state land use policy. The outcomes of local decisions in this area bear directly on the road network. As employment opportunities spread far from the historic centers of the cities, a less dense population will put a strain on the existing outlying infrastructure. Limited resources present challenges to the extension and maintenance of newly expanded roads and infrastructure.

- Strategic actions in securing the local, state, and federal funds necessary to the St. Joseph River Harbor's development, both commercially and for recreational use. New recreation and/or maintenance committees may be necessary.
- Securing commitments and support for the proposed ferry service from St. Joe/BH to Chicago
- Local government decisions regarding the delivery of services may impact the local road system (Niles Rd. bridge over I-94).
- More fully utilizing opportunities to use rail for passenger and freight. Maintaining Lakeshore rail line as well as developing high speed rail that serves Niles.

US 31

The US-31 freeway project in Berrien County has been under development in various phases for over thirty years. The objective of the project has been to provide a freeway from the Indiana-Michigan border (and the Interstate 80 east-west toll road just south of the Michigan boarder) to a logical terminus at the I-94/I-196 interchange. This freeway has been constructed up to Napier Avenue. The proposed connection of the US-31 freeway to I-94 seeks to provide a cost effective and environmentally sensitive completion with a segment of US-31 between Napier Avenue and I-94. Environmental impacts of this project are further discussed in the Environmental Mitigation chapter.

According to MDOT, as of March 2007, the US-31 interchange project remains a "deferred" project. MDOT is proceeding with design and Plan Review, and is acquiring real estate based on the current approved project design. Beyond property acquisition, no further progress will be made until funding becomes available for construction. Despite the lack of funding, this project remains a local priority. For more information on the US-31 connection to I-94 project, visit the project specific website: http://www.michigan.gov/mdot/0,1607,7-151-9621_11058_22860---,00.html

Intelligent Transportation Systems

Traffic congestion has been increasing worldwide as a result of increased motorization, urbanization, and population growth. Congestion reduces the efficiency of a transportation system thereby increasing travel time, air pollution, and fuel consumption. Interest in Intelligent Transportation Systems (ITS) has been the result of traffic congestion and the development of new technologies. An ITS system manages and controls a transportation system to achieve increased efficiency, promote safer traffic conditions, and provide users with better and more current information.

Development of a regional ITS architecture is required by the FHWA and FTA for a region to be eligible for federal funding of any ITS projects. Projects added to the TIP, must be evaluated to determine if the project contains ITS components. Detected components must be checked against the approved ITS architecture for compliance.

The U.S. Department of Transportation's (DOT) ITS Joint Program Office in 1999 defined ITS as a mechanism to collect, store, process and distribute information relating to the movement of people and goods. Examples include systems for traffic management, public transportation management, emergency management, traveler information, advanced vehicle control and safety, commercial vehicle operations, electronic payment and railroad grade crossing safety.

An architecture and deployment plan is created to provide the desired vision fifteen years hence. An ITS architecture is a high level plan that identifies the need for the various services that ITS can provide and documents how ITS systems and components can be integrated together. ITS architectures provide a framework for implementing ITS projects, encourage interoperability and resource sharing among agencies, identify applicable standards to apply to projects, and allow for cohesive long-range planning among regional stakeholders. With a functional ITS architecture stakeholders are able to plan for what they want their system to look like in the long-term and then break the system into smaller pieces that can be implemented in the short-term. A deployment plan provides a list of sequenced ITS projects to implement within the architecture. The plan will provide geographic location, technologies involved, and time of deployment. The plan also is financially constrained and provides a benefit cost analysis of different deployment options.

Southwest Regional Plan

The southwest regional plan was introduced January 2008 and encompasses nine counties in the southwest corner of Michigan including Berrien, and Cass county and two counties in the university region (Lansing). The purpose of the plan is to identify feasible ITS solutions that can meet the needs of the region and a reasonable implementation plan. The plan focuses on the benefits and costs of various ITS deployments as they relate to the overall system. This gives local agencies the necessary tools to make informed decisions with limited available funding. The southwest region's architecture and deployment will be continually maintained and updated by MDOT's ITS Program Office as the region grows and technology changes to ensure quality and usefulness.

ITS In the Southwest Region

Eight public transit providers in Berrien, Cass, Branch, Kalamazoo, St. Joseph, and Van Buren Counties have purchased and are implementing a web-based system called Dial-A-Ride-Online. This is a route scheduling software which enables automatic trip scheduling/optimal route planning designed to make managing and operating road based, passenger transportation service, quick, simple, and cost effective. The web based software automatically schedules passenger requests to the most appropriate vehicle by providing the operator with a list of available options. The process maximizes the number of passengers per vehicle/route. Dial-A-Ride-Online is helping transit providers to optimize vehicle resources, reduce trip refusals, dead mileage, vehicle running cost, and improves efficiency of service for the customer. Because Dial-A-Ride Online is web-based, there is an opportunity to utilize the software to improve cooperation and communication between the transit providers and human service agencies. The software will allow the transit agencies the potential to expand services where they are most needed, provide more effective cross-county service, decrease duplication of efforts, and make it possible to pool resources regionally.

Development Patterns/Smart Growth

> "In communities across the nation, there is a growing concern that current development patterns, dominated by what some call "sprawl" or leapfrog development, are no longer in the long-term interest of our cities, existing suburbs, small towns, rural communities, or wilderness areas. Though most are supportive of growth, many communities question the economic costs of

> abandoning infrastructure in the city, only to rebuild it in further out" (www. http://www.smartgrowth.org/about/default.asp).

Communities are also observing that sprawl has social affects such as quality of life, social equity, health, transportation and housing.

> "Spurring the smart growth movement are demographic shifts, a strong environmental ethic, increased fiscal concerns, and more nuanced views of growth. The result is both a new demand and a new opportunity for developing in a different and smarter way, smart growth.
>
> The features that distinguish smart growth in a community vary from place to place. In general, smart growth invests time, attention, and resources in restoring community and vitality to center cities and older suburbs. Smart growth is more town-centered, is transit and pedestrian oriented, and has a greater mix of housing, commercial and retail uses. It also preserves open space and many other environmental amenities."

Those that apply smart growth tenants tend to focus on ten key principles to guide them through their land use decisions:

1. Create a range of housing opportunities and choices
2. Create walk able neighborhoods
3. Encourage community and stakeholder collaboration
4. Foster distinctive, attractive communities with a strong sense of place
5. Make development decisions predictable, fair and cost-effective
6. Mix land uses
7. Preserve open space, farmland, natural beauty and critical environmental areas
8. Provide a variety of transportation choices
9. Strengthen and direct development towards existing communities
10. Take advantage of compact building design

Across the MPO area, smart growth design techniques are being incorporated into many projects. Such examples include:

a. Mixed use development in downtown Benton Harbor

b. Creating walk able communities in Benton Harbor, St. Joseph, and St. Joseph Charter Township
c. Transportation options with the new Harbor Shores development which proposes to include 12.2 miles/ of trails for non-motorized transportation

The preservation of open space, farmland, natural beauty and critical environmental areas is being achieved through a tri-county initiative for green infrastructure. This effort is being facilitated by the SWMPC under the title of "Growing Greener in Southwest Michigan."

The value of these lands are gradually becoming apparent as they are incrementally lost or become fragmented by development. With the loss or degradation of land that is vital in the network of green infrastructure in the region, important function and habitat is compromised. The Michigan State University (MSU) land transformation model shows increasing development pressure to be expected, especially along the 55 miles of southwest Michigan's Lake Michigan coast. Without a comprehensive effort to inventory and rank critical resource areas, conservation efforts will not be able to adequately provide an interconnected system of green infrastructure. However, with a common vision, priority resources can be strategically protected, connected and the efforts of organizations and municipalities with common goals can be coordinated. The Growing Greener project will strive to have Green Infrastructure be a major component in land use planning, growth, and economic development decisions. Sustained prosperity in SW Michigan depends on our natural resource infrastructure. To date, this is the complete list of communities and organizations that have signed a resolution of support for the Growing Greener in Southwest Michigan initiative:

- FEDERAL:
  National Park Service, Rivers, Trails, & Conservation Assistance Program
- STATE:
  Michigan Natural Features Inventory, Michigan Department Environmental Quality (MDEQ) Coastal Zone Management Program
- TRIBAL:
  Pokagon Band of Potawatomi Indians
- EDUCATION:
  Michigan State University Land Policy Institute

- REGIONAL:
  Southwest Michigan Planning Commission, Paw Paw River Watershed Group,
- COUNTY:
  Berrien County Planning Commission, Cass County Planning Commission, Cass County Conservation District, Cass County & Road Commission Parks Department, Van Buren County Planning Commission, Berrien County Parks Department
- TOWNSHIP:
  Almena Township, Bloomingdale Township, Chikaming Township Planning Commission, Decatur Township, Hamilton Township, Silver Creek Township, St. Joseph, New Buffalo
- CITY & VILLAGE:
  Bangor, Benton Harbor, Bloomingdale, Hartford, Niles
- NON-PROFIT:
  The Conservation Fund, Chikaming Open Lands, Southwest Michigan Land Conservancy (SWMLC), Meeting Ecological and Agriculture Needs of Dowagiac River System (MEANDRS), Friends of the St. Joseph River
- PRIVATE:
  Homebuilders of Southwest Michigan

Communities throughout the planning region have begun to incorporate Green Infrastructure language into their master plans and recreation planning documents. This incorporation of language will serve as the tool needed to ensure that land with high values within the green infrastructure will not lose its ability to retain its vital function.

Asset Management

In the State of Michigan, under the oversight of the Transportation Asset Management Council (TAMC), it is encouraged that all agencies which spend transportation funds on roads and bridges implement an asset management approach to managing their transportation infrastructure. Asset management consists of a set of business principles and practices for improving resource allocation decisions. Asset management is defined by the State as "an ongoing process of maintaining, upgrading, and operating physical assets cost-effectively, based on a continuous physical inventory and condition assessment." It requires a shift from a traditional tactical project management

approach to a strategic, comprehensive systems management concept (Michigan TAMC 1-1).

The Berrien County Road Commission (BCRC) and TwinCATS have a pavement management system in place to manage their resources by making cost effective allocations. The process begins with assessing the current condition of the transportation infrastructure. Pavement Surface Evaluation and Rating (PASER) is visual evaluation method, based on engineering principals, of rating the surface quality of the road network using a scale from 1 to 10. On an annual basis a three member team is assembled from the road commission, SWMPC, and MDOT to collect the field data necessary to assess the current network. The data collected is used by TwinCATS to set program targets and funding levels. Specifically, Asset Management provides critical analytical insight into the optimal combination of preventive maintenance and capital improvements that will achieve the greatest efficiency. Future candidate projects are identified based on the application of current condition data, further informed through public input, or through engineering judgment and field inspection. The lack of resources makes intelligent prioritization of projects essential. Projects are incorporated in a multi-year program (TIP) and updated on an annual basis. The final step in the process is to report the results to the TAMC through three reports – a summary of current condition, a three-year program, and a summary of actual spending over the past year.

Rideshare

Southwest Michigan Planning Commission has managed a Rideshare program since 2001 The Rideshare program in Berrien County works to effect behavioral change among citizens and businesses to reduce traffic congestion and improve air quality. Rideshare staff works one-on-one with employers, employees, and public agencies to develop options for commuting. Initiatives include an outreach effort to assist area employers in establishing and maintaining effective commuting options for employees and job seekers.

The Go! Rideshare website www.gorideshare.org provides a secure, free, on-line, real-time commuter matching service available to anyone who lives, works or in Berrien, Cass, or Van Buren counties. Interested commuters who register with Go! Rideshare are

sent an email once a match is found of people or co-workers who are going the same direction at approximately the same time of day.

The School Pool program shares space on the GO! Rideshare website and provides a secure on-line real time matching service to all public and private schools K-12, technical schools, universities and colleges located in Berrien, Cass and Van Buren Counties.

Transportation Safety Planning

Federal law requires both the State and MPO to integrate safety conscious planning into the transportation process and to be consistent with the Strategic Highway Safety Plan (SHSP). The Strategic Highway Safety Plan's mission is to improve traffic safety in Michigan by fostering communication, coordination, and collaboration among public and private entities. TwinCATS and their MDOT partners are constantly looking for opportunities to incorporate safety conscious planning into their planning process for the benefit of the entire transportation network.

In the past SWMPC has sponsored traffic safety forums to discuss topical issues regarding traffic safety and emergency transportation operations. Invitees included individuals and organizations charged with enforcement, planning, public works, and engineering within the region. Forums are intended to get input for area stakeholders on how to better to incorporate safety conscious planning into the transportation system.

TwinCATS also incorporates safety conscious planning in the project selection for the LRTP and the TIP. All projects are evaluated against a range of criteria including whether or not they promote a safer transportation network.

Alternative Fuels

Alternative fuels are becoming increasing popular as gas prices increase and the dependency on foreign oil grows. The Michigan Renewable Fuels Commission (RFC) was established in 2006 with the intent of encouraging the production of alternative fuels and developing a strategy for Michigan to lead the nation in alternative energy production and use. The commission is made up of 27 commissioners, representing a broad spectrum of interests in renewable – ethanol growers, agri-business, automobile

manufacturers, alternative energy experts, and researchers from state universities. Michigan's natural resources and established manufacturing sector make Michigan a prime candidate for bio-fuel research and production. Michigan has joined Indiana, Iowa, Kansas, Minnesota, Ohio, South Dakota, and Wisconsin in adopting the Energy Security and Climate Stewardship Platform Plan (Platform) which establishes shared goals for the Midwest region, including increased biofuels production and use. Specifically, the Platform sets the following goals:

- Produce commercially available cellulosic ethanol and other low-carbon fuels in the region by 2012;
- Increase E85 availability at retail fueling stations in the region to 15% of stations by 2015, 20% by 2020, and 33% of all fueling stations in the region by 2025;
- Reduce the amount of fossil fuel that is used in the production of biofuels by 50% by 2025;
- By 2025, at least 50% of all transportation fuels consumed by the Midwest will be from regionally produced biofuels and other low-carbon transportation fuels.

The Platform also establishes a regional biofuels corridor program. The program directs state transportation, agriculture, and regulatory officials to develop a system of coordinated signage across the region for biofuels and advanced transportation fuels and to collaborate to create regional E85 corridors. The program requires standardized fuel product coding at fueling stations as well as increased education for retailers about converting existing fueling infrastructure to dispense E85.

As alternative fuel technology evolves on our region our staff will continue to evaluate the applicability to plans and development projects. It is our goal to incorporate those technologies into our planning process that reduce our dependence on foreign oil as well as reduce the emission of gases that contribute to global warming, particulate matter, and chemicals that combine to form ground level ozone. Three different emerging technologies of particular interest are: ethanol, biodiesel, and hydrogen fuels.[7]

[7] Michigan Dept. of Agriculture: http://www.michigan.gov/mda/
Michigan Dept. of Transportation: http://www.michigan.gov/mdot/

Ethanol

Ethanol is fuel produced by fermenting and distilling starch crops to simple sugars and then into alcohol. Corn, barely, wheat, sugar as well as "cellulosic biomass" such as trees, grasses (swtichgrass in particular), potatoes, molasses, and corn stover can all be used to produce ethanol. Currently 90% of the ethanol made in the U.S. is made from field corn. Like biodiesel, ethanol can be blended with petroleum based fuel, or gasoline, in different increments. For example, E85 (a blend of 85% ethanol and 15% gasoline) qualifies as an alternative fuel under the Energy Policy Act of 1992 (EPAct), and vehicles that run on E85 are considered flexible fuel vehicles (FFVs). A blend of 10% ethanol, 90% gasoline (E10), while not considered an alternative fuel at such a low concentration, can be used in all gasoline vehicles, and in fact ethanol is currently added to gasoline to increase octane and improve emissions in many states. As of 2005, approximately 5 million FFVs have been sold in the United States, although many buyers are unaware that they can refuel with E85. In fact, the Michigan Department of Agriculture estimates that nearly 225,000 FFVs exist in Michigan as of early 2006. Fueling stations that provide E85 are primarily located in the Midwest, with more than 900 public E85 stations operating across the country. E85 fueling equipment differs slightly but is of similar cost to gasoline fuel equipment, and in some cases it may be possible to convert existing petroleum equipment to handle E85. When compared with gasoline-fueled vehicles, the majority of E85 vehicles produce lower carbon monoxide and carbon dioxide emissions, as well as lower levels of hydrocarbons. While a gallon of ethanol contains about 66% of the energy of a gallon of gasoline, in actual use drivers generally experience a fuel economy reduction of 15% relative to gasoline. Despite the lower energy output per gallon, ethanol produced from cellulosic biomass yields at least 25% more energy than is used growing, harvesting, and distilling the ethanol. As technology converting biomass into ethanol improves, estimates of a 71-75% reduction in fossil energy use and a 68-91% reduction in emissions is anticipated with the use of E85 by 2010. On August 5, 2005, President Bush signed into law the 2005 Energy Policy Act, which includes a 7.5 billion gallon renewable fuels standard by 2012. This mandates the use of ethanol (and biodiesel) into the American fuel supply, and as of July 1, 2006, U.S. production of ethanol surpassed the 4.5 billion gallon mark. The state of Michigan has opened three commercial ethanol plants, the first being the Michigan Ethanol LLC in Caro, Michigan producing over 40 million gallons per year, much of which is produced with corn from Michigan corn growers. Three other Michigan

ethanol plants are under construction and each is expected to produce 50 million gallons of ethanol annually. [8]

Biodiesel

Biodiesel (fatty acid alkyl esters) is a diesel fuel replacement made from natural, renewable sources such as vegetable oils and animal fats, which reduce emissions. Biodiesel works very similarly to petroleum diesel in compression-ignition engines, and blends of up to 20% biodiesel, B20, (mixed with petroleum diesel) can be used in nearly all existing diesel equipment, including storage and distribution infrastructure. Blends up to B20 biodiesel do not require modifications to engines and can provide the same payload capacity as regular diesel. Higher blends of biodiesel (100% biodiesel or B100) may also be used with little or no modification in engines built since 1994, however B100 is poorly suited to low temperature conditions. The Environmental Protection Agency (EPA has registered biodiesel as a fuel and fuel additive. B100 has been officially designated as an alternative fuel by the Department of Energy (DOE) and the US DOT.

Biodiesel fuel significantly reduces the emission of unburned hydrocarbons, carbon monoxide, particulate matter, nitrogen oxides and other chemicals, with the reductions increasing as the amount of biodiesel blended increases. Additionally, the exhaust emissions of sulfur oxides and sulfates (major components of acid rain) from biodiesel are essentially eliminated compared to diesel. The use of biodiesel reduces unburned hydrocarbons and nitrogen oxides, which are known ozone or smog forming precursors. Based on EPA engine emissions testing, the overall ozone (smog) forming potential of the hydrocarbon exhaust emissions from biodiesel is nearly 50 percent less than that measured for regular diesel fuel. According to the U. Department of Energy, B100 reduces carbon dioxide (a major contributor to global climate change) emissions by more than 75% over petroleum diesel, while a blend of 20% biodiesel reduces carbon dioxide emissions by 15%. According to the Michigan Department of Agriculture, biodiesel is currently imported primarily from Illinois, Ohio, Minnesota and Kentucky. In August 2006, the first commercial biodiesel plant opened in Gladstone, Michigan by "Ag Solutions, Inc" and is expected to produce at least 5 million gallons per year and may be expanded. Michigan has several other commercial plants presently under construction

[8] Transportation Technology R&D Center. Effects of Fuel Ethanol Use on Fuel-Cycle Energy and Greenhouse Gas Emissions. U.S. Dept. of Energy U.S. Department of Energy: http://www.eere.energy.gov/

and are these plants are expected to open over the next 12 months. Currently, Michigan uses over 1 billion gallons of diesel fuel annually. Southwest Michigan has one plant that produces biodiesel:[9]

Michigan BioDiesel, LLC
700 Industrial Park Road
Bangor, MI 49013

Additionally, Southwest Michigan currently has one site that sells biodiesel:

Berrien Co. Farm Bureau Oil Company
M140 & M62
Eau Claire, MI 49111
(269) 461-4222

Hydrogen

Hydrogen as an alternative fuel is still being researched and tested for use in vehicles; however, it may very well play an important role in meeting our future transportation demands. Hydrogen is the simplest element, made of only one proton and one electron, and each molecule is made up of two atoms. Hydrogen is abundant on earth, but it is almost always found combined with other elements such as oxygen to form water. It is best described as an energy carrier instead of an energy source, that can be produced using nearly every type of domestic energy source available from nuclear to solar and wind energy. Essentially, energy from another source like electricity (usually made from burning coal) is used to separate the hydrogen from other elements (like oxygen) and this gas is then used as a fuel. Hydrogen can be used as fuel directly in combustion engines not that much different from gasoline engines, however storing hydrogen in a gas tank is more difficult because it takes up a great deal more space. There are obviously a number of challenges to introducing hydrogen as a motor fuel, challenges that the Department of Energy is striving to resolve. Experts agree, however, that it will

[9] National Biodiesel Board: http://www.nbb.org/resources/faqs/default.shtm
Michigan Biodiesel Laws and Incentives: http://www.afdc.energy.gov/afdc/progs/ind_state_laws.php/MI/BIOD

probably be approximately 10-20 years before hydrogen vehicles and the infrastructure to support them will begin to make an impact.[10]

Regionally Significant Projects

Harbor Shores

Recently, the Cities of St. Joseph and Benton Harbor, as well as Benton Charter Township, have come together to partner with Harbor Shores Community Redevelopment, Inc. to develop and redevelop over 530 acres of land along the Paw Paw and St. Joseph Rivers near Lake Michigan. The $500 million, multi-year project is slated to bring over 826 residential units, over 43,000 square feet of commercial and office space, two hotels, a conference center, a water park, and a Jack Nicklaus Signature golf course into the TwinCATS area. Harbor Shores also expects to work with local organizations to implement an ambitious community benefits plan.

Because of the significance of this project to the Twin Cities Area, the Interagency Work Group (IAWG) convened on April 23, 2007 at 1:00 pm via conference call to discuss the transportation implications of the development. The identified transportation impacts included reconstruction, resurfacing, shoulder, and/or utility work on Graham Avenue, Klock Road, North Shore Drive, Upton Drive, Paw Paw Avenue, Higman Park Road, and Jean Drive In addition, a deceleration lane may be needed on M-63 to provide an entrance to Parcel 4 (see map in Appendix E).

The IAWG discussed whether or not any of these roads could become regionally significant, and the two with that potential were Klock Road and Higman Park Road. Original plans for Klock Road called for extension and widening to include a center turn lane as well as paved shoulders. Higman Park, a truck route, was to be removed and replaced as a curved road. At the time of the IAWG meeting, Harbor Shores plans were not finalized, and the group determined that there was nothing about the project that warranted air quality analysis. City of Benton Harbor representatives agreed to provide additional project information as necessary.

[10] Grand Rapids Metropolitan Area Long Range Plan
http://www.gvmc.org/transportation/documents/lrtp2035/2035%20LRTP%20-%20FINAL%20DRAFT.pdf

On July 8, 2008, a follow up meeting with Cornerstone Alliance (a local economic development agency that is involved in the Harbor Shores project) and SWMPC staff took place to obtain updates on project parameters. At this time, transportation impacts include minor resurfacing and patching on Upton Drive, Paw Paw Avenue, and North Shore Drive. Higman Park Road may be resurfaced, but will remain in its current footprint. Klock Road will likely be extended to connect to Paw Paw Avenue, but the construction of a center turning lane is unlikely.

Harbor Shore plans also include an extensive network of non-motorized trails (see map in Appendix E). Approximately 12.2 miles of pedestrian and bicycle paths will connect the golf course, wetlands, and other amenities. It is expected that these trails will be funded through private partnerships.

Currently, work on the golf course is ongoing and other sites are being prepared for development. The significance of this project to the Twin Cities area is unmistakable. Many land use changes will take place, new residents will settle in the area, and many visitors will utilize the hotels, water park, and golf course. As the development continues to progress, regular updates will be provided at TwinCATS TAC committee meetings to review transportation impacts and should it become necessary the IAWG will convene again.