



# DELTA TRAILS

**NON-MOTORIZED TRANSPORTATION STUDY**



## PART ONE: EXECUTIVE SUMMARY APRIL 2005



**LANDSCAPE ARCHITECTS & PLANNERS, INC.**  
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**PROJECT TEAM  
DELTA TOWNSHIP**

Supervisor : Joseph E. Drolett , NE

Treasurer : Philip J. Chisholm, SE

Clerk : Janice Vedder, SW

Trustees : John Boles, NE  
 Janice Cunningham, NE  
 Sherry Freeman, SE  
 Dorothy E. Maxwell, SE

Township Manager : Richard Watkins, NE

Assistant Township Manager : Amy McEwan, NE

**PLANNING CONSULTANT  
LANDSCAPE ARCHITECTS & PLANNERS,  
INC.**

Principal : Robert Ford

Project Manager : Michael Bristol

Transportation Engineer : Bill Savage

**STEERING COMMITTEE  
DELTA TOWNSHIP REPRESENTATIVES**

Citizens :

Northeast Resident: Amie Calhoun

Southeast Resident: Dan Morgan

Southwest Resident: Resigned

Northwest Resident: Ron Maguire

Business Owner: Greg Bovee

Waverly Schools: Dan Papas

Grand Ledge Schools: Dr. Michael Johnson

Township Board: Janice Cunningham, NE  
 Janice Vedder, SW

Ex Officio Members:

Asst. Township Manager: Amy McEwan, NE

Planning Commission: Jim Schweitzer, SW

Parks & Recreation: Dick Benkert, SW

Parks Commission: John Keel, NE

Engineering : Dennis Williams

Planning Department : Mark Graham

**EATON COUNTY REPRESENTATIVES**

Road Commission : Blair Ballou  
 Fred Marquardt, SW

Sheriff Department : Lt. Jeff Warder, SW  
 Delta Patrol

Drain Commission : Brady Harrington



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## **INTRODUCTION...**

Many segments of the population are adversely affected by the health consequences that physical inactivity and poor nutrition cause. Local governments should take action by planning and designing communities that will facilitate a healthy lifestyle for all residences of the Township regardless of age or socio-economic status.

Over the last 50 years planning practices in the United States have resulted in communities that are designed more for automobiles than people. The extent of these planning practices is most striking in the suburbs where residents are increasingly required to take more trips in an automobile, and spend less time walking or biking. Pedestrian trips have decreased significantly, 30 years ago, 66% of school children walked to school, today 13% of children walk or bike to school. Another result of the dominance of the automobile is the decline in physical activity, 25% of all trips made in the U.S. are less than one mile in length, and 75% of those short trips are made in an automobile. Furthermore, our population is becoming less active and more obese; 60% of American adults are not regularly active, and another 25% are not active at all. Currently, 64% of the U.S. population is critically overweight and these conditions are due to a lack of physical activity. The result is increased health costs due to serious health conditions. Communities can no longer afford to simply ignore the importance of providing accommodations for the pedestrian to walk or bike.

National trends demonstrate poor pedestrian planning in communities across the country. Trends indicate a decline in physical activity that has contributed to an increase in obesity and rising health care costs. These National trends and statistics provide examples for what is happening across the country, and are a cause for concern on what is happening in local communities across the country. Delta Township is not exempt from these same trends, and has realized the negative consequences of the lack of planning for pedestrians, bicyclists and other forms of non-motorized transportation. Delta Township is now placing a higher priority on creating a safer pedestrian and bicycle friendly community. Planning for non-motorized transportation creates a more pedestrian friendly community, which becomes another community asset, providing a place where people want to live, work and recreate. When individuals and families are making a decision on where to live, the availability of trails and other outdoor recreation facilities are fast becoming a very important factor.

Creating safe places for people to walk and bicycle is also crucial in persuading people to become more active. The sidewalk system provides for walks within neighborhoods and within the existing road right-of-ways; however, it is not always continuous, and does not offer much separation from vehicles. The sidewalk system is very functional by providing walks in front of homes and along roadways but it does not consider the recreational experience of the user and therefore the result is limited use.

Over the past ten years, Delta Township has experienced one of the highest growth rates in the surrounding areas. Between 1990 and 2000, the growth rate for Delta Township was 13.6%. That growth leads to additional vehicles on the roadways as well as more residents who want to walk and bike within the community. The increase in both vehicular and pedestrian activity creates the potential for conflicts between the two necessitating further study to minimize those potential conflicts. To accomplish this, Delta Township administrators began by developing a preliminary Non-Motorized Transportation Plan in 2002. This preliminary study looked at why communities need to plan for non-motorized transportation, national research on how communities can make their area walkable and other related trends from across the country.

As a result of this research, it was determined that the Township would hire a planning firm to focus on a Township-wide study. The Board for Delta Township initiated the "Delta Trails and Greenways: Non-Motorized Transportation Study", here forward referred to as the "Study", in July of 2003. The Study focuses on routes that propose connections to neighborhoods, schools, parks and shopping districts. The Delta Township Board recognized the growing need to provide a network of non-motorized transportation routes for residents of Delta Township and the potential to connect with adjacent communities who are supporting similar efforts.



## **PURPOSE...**

The purpose of the Study was to conduct a comprehensive investigation of potential routing opportunities for non-motorized transportation throughout the Township. The Study identifies specific routes that will be implemented over time, which will allow all residents, regardless of physical or socio-economic differences, to have the opportunity to enjoy non-motorized transportation, recreation, enrichment, and leisure. This was accomplished by studying all areas of the Township including public and private lands. A concerted effort was placed on identifying “on road” and “off road” opportunities that provide continuous north / south and east / west routes which connect neighborhoods, schools, parks, commercial areas, and publicly owned lands.

The Township’s existing sidewalk plan identifies sidewalks within the road right-of-ways; however, it is not a continuous. The Study looked at ways to provide connections to the existing Township sidewalk infrastructure in conjunction with the proposed non-motorized transportation system.

Another goal for the Study was to connect adjacent communities that already have existing trail systems or are currently planning them. Some of those communities are the City of Lansing, the City of East Lansing, Delhi Township, the City of Grand Ledge, and the City of Portland.

These parallel efforts are another reason to develop an overall long-term vision showing where non-motorized routes should be located within the Township to ensure that they connect to trail and sidewalk systems within the other surrounding communities. The study process resulted in the development of a long term community vision that demonstrates what should occur to develop a walkable community from here forward. A formal map called “the Vision” was developed to visually document what the community would like to look like in the future. The Vision will be used as a basis to guide overall decisions about where to obtain easements, make route connections, and indicate where trails should be built. During the study process and the development of the Vision previous planning efforts and/or studies were considered and this plan provides tools or recommendations for coordination in future planning with other agencies. It also identifies land acquisition methods, suggests pilot projects, encourages future communication with citizens, identifies possible funding opportunities, provides recommendations and implementation tools.

The Vision is a tool for the Township to use to communicate the long term vision of what we hope to look like in the future. However, the Township also needed a tool to help prioritize the implementation of the Vision. With limited resources the implementation of this plan may take 25-50 years or more. Therefore, a Priority Plan was developed to focus attention on implementing the first 20 years of the Vision. The Priority Plan recommends which routes should be completed to reduce safety concerns, provide connections between neighborhoods and destination points, and build a pedestrian and bicycle network with significant north to south and east to west connections within the Township.

A preliminary Pilot Project Study was conducted for the Waverly Community School District main campus. The Waverly Community Schools Specific Area Report makes specific recommendations about adding non-motorized routes, street crossings, signs and signals, and road improvements in and around school zones. This model will serve as an example of the tools that can be used to change the physical environment to provide safe routes. These tools and others can then be utilized in other areas across the Township.

As a result of completing and adopting the Study, Delta Township will have the appropriate documentation to apply for State and Federal funding. This allows the Township to leverage local funds and grants through match money (10%–50%), to apply and receive grants to implement the recommended non-motorized transportation infrastructure.

It is therefore recommended that the Delta Township Board adopt this Study. Upon adoption, the Study can be used as a guide for all future non-motorized transportation planning, funding, and implementation opportunities.



## **GOALS & OBJECTIVES...**

The goals of the Delta Township Non-Motorized Transportation Study were to:

- Provide a foundation for non-motorized transportation.
- Obtain citizen input through an interactive public input process.
- Promote safety throughout the non-motorized transportation system.
- Identify community assets or greenways that have potential for supporting an enhanced non-motorized transportation system.
- Recognize and address the specific needs of the Delta community.
- Provide opportunities for all Township residents to use the non-motorized transportation system regardless of their socio-economics or physical abilities.
- Develop continuous primary routes running north to south and east to west.
- Plan and implement connections to other greenways and non-motorized transportation systems in the surrounding area.
- Connect neighborhoods, schools, parks, commercial areas, Township owned lands, natural, cultural, and scenic features whenever possible.
- Encourage physical activity by increasing the number of residents who walk or bike daily.
- Enhance the quality of life the Township provides for it's residents by developing a non-motorized transportation system.

## **STUDY AREA...**

Delta Township is located in the northeastern corner of Eaton County, Michigan. The Township is located in Township 4 North, Range 3 West and contains 36 sections or approximately 36 square miles. The population of Delta Township is estimated at approximately 30,000 residents according to the 2000 census bureau data.

The boundaries of the Township include Eaton Highway to the north, Royston Road to the west, Waverly Road to the east and Jolly Road/Davis Highway to the south.



### **DEFINITION OF THE VISION...**

The Vision is a long-term plan that illustrates specific routes that are proposed within the Township. The Vision is similar to a “roadmap”; where a network of routes demonstrates many different ways to connect to destinations.

However, it is not anticipated that all of the routes will be implemented because of potential roadblocks, such as a lack of obtaining private easements or available funding to build all of the routes. The Vision also symbolizes non-motorized tools such as sidewalks, shared-use paths, or bike lanes that will provide connections.

The implementation tools include the following:

- Shared-Use Paths – both on and off road; offers multi-users to participate in use
- Sidewalks - connect to neighborhoods, schools, parks, and other cultural centers
- Mid-Block Crossings – provide pedestrian safety islands when major pedestrian ways intersect with roadways necessitating a designated pedestrian crossing
- Pedestrian Bridges – provides for safe separation between vehicles and pedestrians by providing designated safe crossings routes
- Road Improvements – when new road construction, reconstruction or restriping projects are reviewed the following should be considered:
  1. Four to three lane conversions – converting existing four lane roads to three lanes that under the appropriate conditions provide enhanced vehicular and pedestrian safety
  2. Designated bike lanes added to the edge of the road
  3. Intersection improvements, round-a-bouts, striping, signalization, etc.
  4. Pedestrian friendly signage
  5. Others as needed



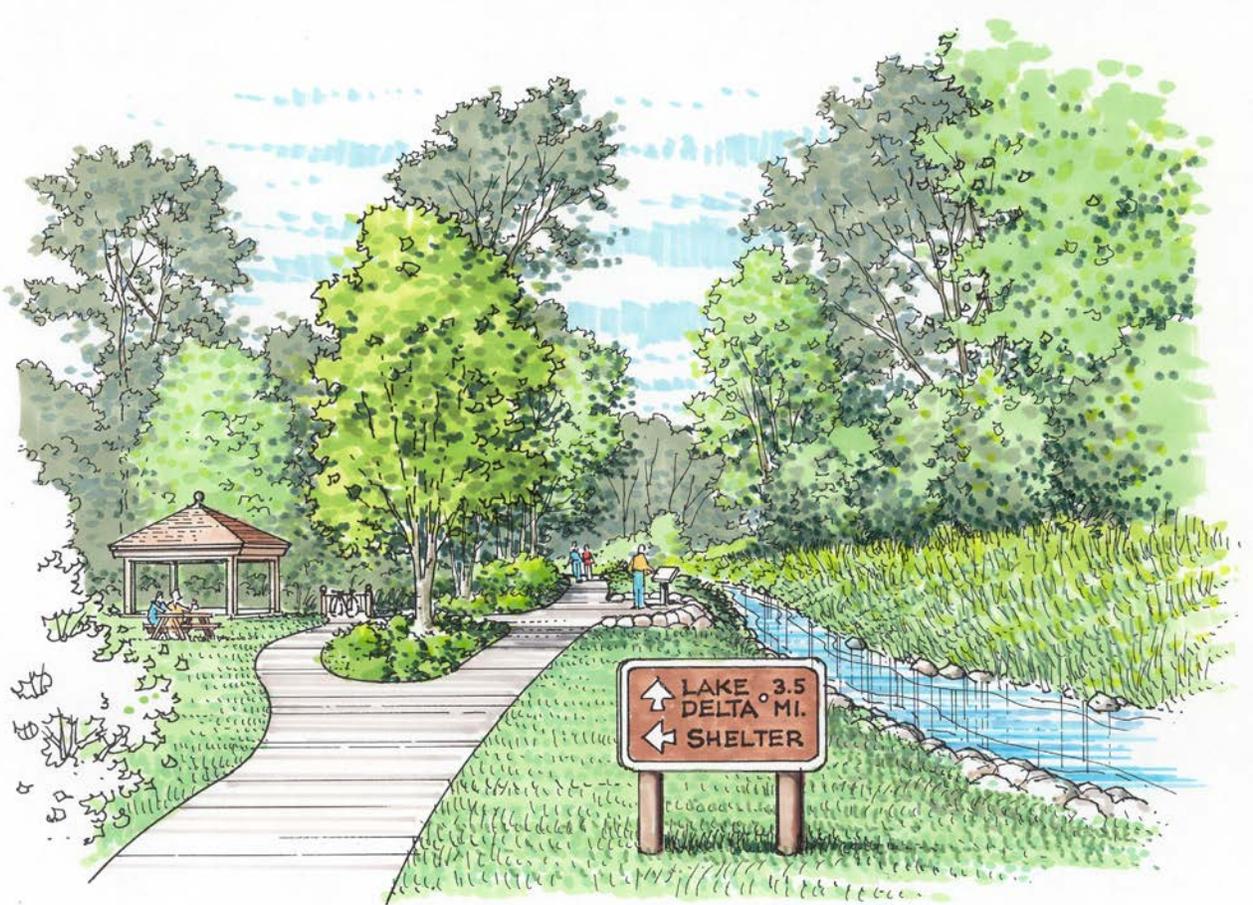
The following example along the Old River Trail Corridor demonstrates non-motorized tools that are recommended, such as a bike lane, as shown at the edge of the road and a shared-use path, as shown next to the road.



VIEW LOOKING EAST ON OLD RIVER TRAIL

The Old River Trail Corridor is the main vehicular link to two township parks located on the north side of Delta Township. This example shows proposed bike lanes on both sides of Old River Trail and a proposed shared use path along the north edge of the road. This would provide a non-motorized linkage to Delta Mills Park and Hunter's Orchard Park.

The Carrier Creek Corridor is an example of an undisturbed natural creek corridor, which runs in a north/south direction in the middle of the Township. The non-motorized tool recommended in the Vision is an “off road”, recreational shared-use path running parallel along the creek.



The Carrier Creek Corridor runs north and south through Delta Township and empties into the Grand River. This natural corridor provides a great north/south connector linking to the northern portion of the Township and its existing park facilities. As this example shows there would be opportunity for small pocket parks and overlooks along the shared-use path.

The Vision is important because it will serve as a reference guide over the long-term for implementation of the non-motorized tools recommended in this Study. The Vision identifies current and future needs for non-motorized transportation. In addition, the goal of the Vision is to provide the Township with a non-motorized transportation network, which is connected through numerous routes running north to south and east to west routes within the Township; and in so doing, provides links between neighborhoods and community services. The Vision is also important because it identifies the main connections to other adjacent community trail systems.

Prior to preparing The Vision other plans and studies that preceded this effort were reviewed and referenced. It is intended for this Study to support other related studies that the Township is currently pursuing such as:

- Delta Township Strategic Plan
- Comprehensive Plan
- Sidewalk Plan
- Five-Year Comprehensive Park Plan

The Vision will require cooperation and coordination internally and with other agencies to plan and implement. The Vision is a tool that allows the Township to share information and communicate specifically with other agencies relative to improvements that their agency controls. Some of the key agencies are:

- Eaton County Road Commission
- Eaton County Drain Commission
- Waverly Community School District
- Grand Ledge School District
- Michigan Department of Transportation
- Others as necessary

Land acquisition is a key component to specific routes identified in the Vision. It will be necessary to acquire land to accomplish some of the routes contained within the Vision. It should be stressed that land acquisitions should be done in an appropriate manner such as:

- Donations - recommended first to lower land costs
- Purchasing land from willing sellers at appraised value or below
- Easements - only needed to acquire specific rights for use

In order to gain local support, it is recommended that Pilot Projects be used. The Vision identifies certain projects that are visible and meaningful to the local community. Many types of generic pilot projects can be illustrated such as a “mid-block crossing” or “pedestrian bridge” but there are also some that have been identified that are unique to Delta Township, that include:

- Safe Routes to Schools – specifically around the Waverly School Campus (see Part Two: Pilot Project, the Waverly Schools Campus Special Area Report for details)
- The East - West Collector – implementation of a shared-use path starting at Waverly Road and running west to I-96/I-69 right-of-way along the existing Township owned right-of-way
- The Carrier Creek – acquisition of voluntary easements for future trail development
- The Grand River – acquisition of voluntary easements for future trail development

It is important to keep the lines of communication open during the implementation process of the Vision. The public should be encouraged to remain involved in the planning process. Encouraging long-term involvement is necessary for support and success of the overall Vision. How specific projects are communicated to the public is another key to the

success of this effort. Open lines of communication should be continued through methods such as public meetings and notifications for each project during the planning and implementation of each phase.

The Vision is a long-term effort that will require substantial funding to implement beyond what the Township can afford alone. It is possible to leverage the Township's local dollars by applying for funding from such sources as:

- State and Federal grants
- Set aside funds for acquisition
- Endowments and foundations
- Other public or quasi public agencies
- Others as they become available

In conclusion, once the Vision is adopted it will be used as a tool for long-term planning. The Vision identifies which tools should be used for specific routing. It will help direct the Township on where to begin obtaining private easements for future trail implementation. It also places the Township in a position to communicate the need to improve roadway safety by providing a comprehensive Study to the Township staff and non-motorized transportation advocates. This allows the Township to work with other local agencies as previously mentioned. Communicating this information directly to the Eaton County Road Commission will provide a basis for discussions about how to improve roadway design to include pedestrians and bicycles in their planning efforts when they are considering changes to the roads, reconstruction, bridge replacements, road resurfacing, or new road construction.

The Vision may be used to obtain funding from the State and other local funding sources. One of the criteria for obtaining funding is having a comprehensive study in place that shows proposed routing and connectivity to other communities and the Vision accomplishes that goal.

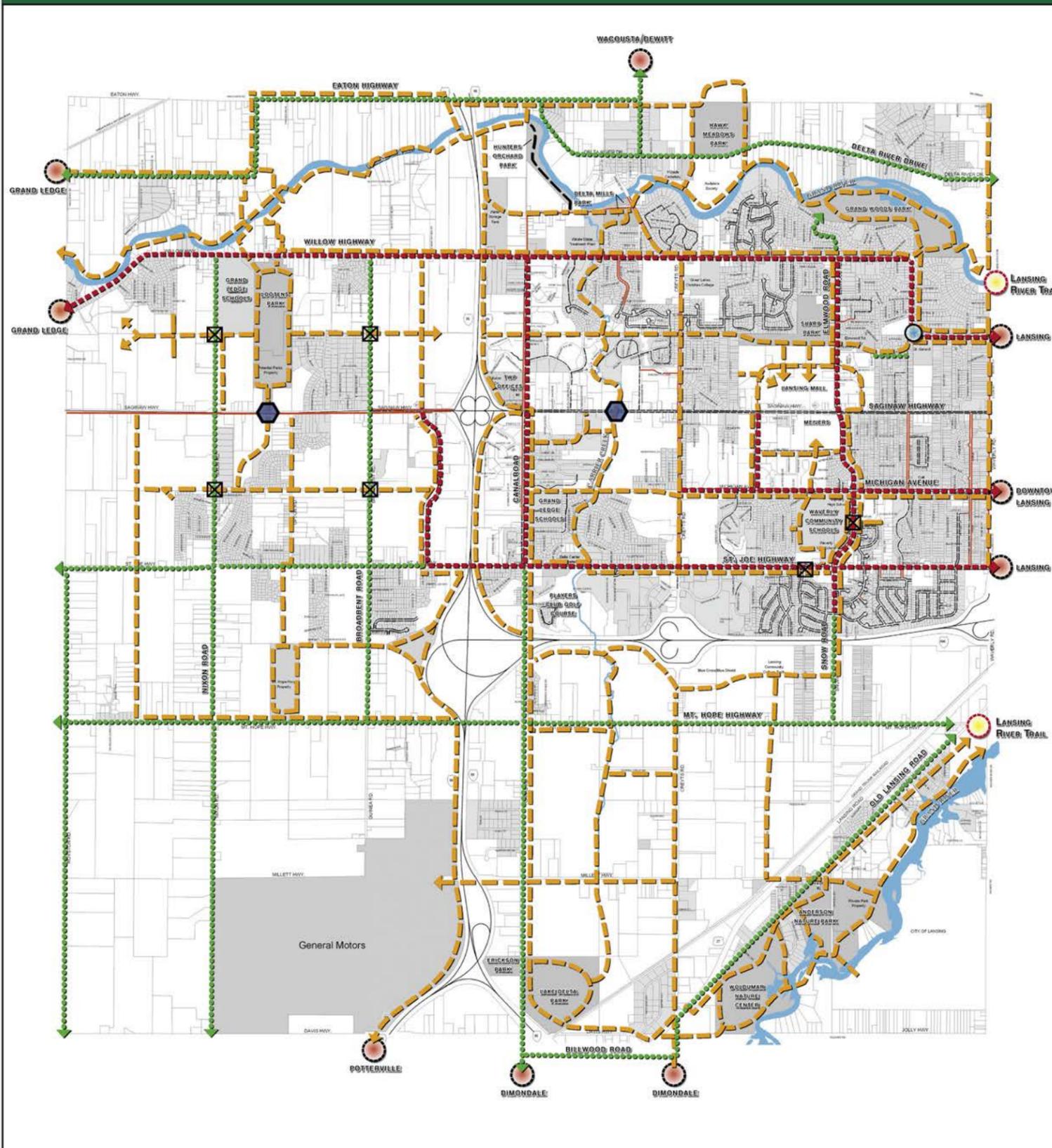
### **PRINCIPLES OF THE VISION...**

Delta Township has determined that it is an essential public service to study and develop a safe and connected transportation system for those traveling the Township on bicycle, by foot, wheel chair or using other forms of non-motorized transportation.

The following principles and guidelines were derived from the Delta Township's previous non-motorized transportation study, the public input process and confirming with other agencies and the Township's administrators. They include:

1. Develop safe routes in areas around the schools, at or near the Township parks, and other publicly controlled property.
2. Connect neighborhoods to major park properties, public amenities, natural and civic attractions, as well as to other communities.
3. Continue to develop & expand the existing sidewalk system as well as connections to other proposed multi-use paths, nature trails, and bike lanes.
4. Work with the Eaton County Road Commission to develop standards for on road bicycle lanes and begin lobbying to include bicycle lanes in new road construction projects and on existing roads where appropriate.
5. Develop a plan for a shared-use path pilot project within the East-West Collector from the I-96/I-69 right of way to Sharp Park and eastward to Waverly Road.
6. Allocate time and resources to acquire voluntary private easements from landowners in accordance with the Vision.
7. Prior to implementation, individual projects should be presented at a public meeting.

# THE VISION



**LEGEND\***

- - - - - PROPOSED LANE CONVERSION
- · · · · PROPOSED BIKE LANES
- - - - - PROPOSED SHARED USE PATH
- - - - - EXISTING SHARED USE PATH
- X PROPOSED MID-BLOCK CROSSING
- ◻ PROPOSED PEDESTRIAN BRIDGE OVERPASS
- PROPOSED SIDEWALK
- - - - - EXISTING SIDEWALK
- POSSIBLE FUTURE TRAIL CONNECTION FOR DELTA TRAILS
- POSSIBLE COMMUNITY CONNECTION FOR DELTA TRAILS
- POSSIBLE TRAFFIC ROUND-A-BOUT

Base Information Provided by the Delta Charter Township Engineering Department

\*SEE PAGES 12 AND 13 FOR DEFINITION OF TERMS LISTED IN LEGEND

**JANUARY 2005**



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### **DEFINITION OF PRIORITY PLAN...**

The Priority Plan identifies development projects within the next 20 +/- years (2005-2025). The red lines represent routes that have been given the highest priority and where the Township is recommended to focus its efforts and financial resources first. These routes were developed based on the input received from the Township wide survey and public input meetings, Township staff, the Steering Committee and the Consultant's professional opinion. The gray lines represent future phases to be considered after 2025. A concerted effort was made to evenly distribute the improvements throughout, with the highest concentration shown in the northeast part of the Township where the highest concentration of people live, work or go to school.

The Priority Plan focuses the efforts of the Township into three districts within the Township. The first area is north of I-496 and east of I-96. The second area is south of I-496 and east of I-96. The third area is located west of I-96. These divisions allow parity throughout the Township based upon population distribution and apparent need. The Township will decide on priority ranking as funding becomes available.

Once the Priority Plan is adopted it will be used as the guide for the Township to implement "Pilot Projects" which can be used as a tool to educate the public. This is accomplished through "seeing is believing", implementing a variety of non-motorized tools, so that, a project can be monitored and the community can see the improvement and gauge the results for themselves. Some specific examples are a shared-use path on the East-West Collector, implementing a four to three lane conversion on an existing road, a mid-block crossing on Snow Road along the Waverly Community Schools main campus, north / south or east / west routes and the acquisition of easements that have a direct influence and impact on the Vision.

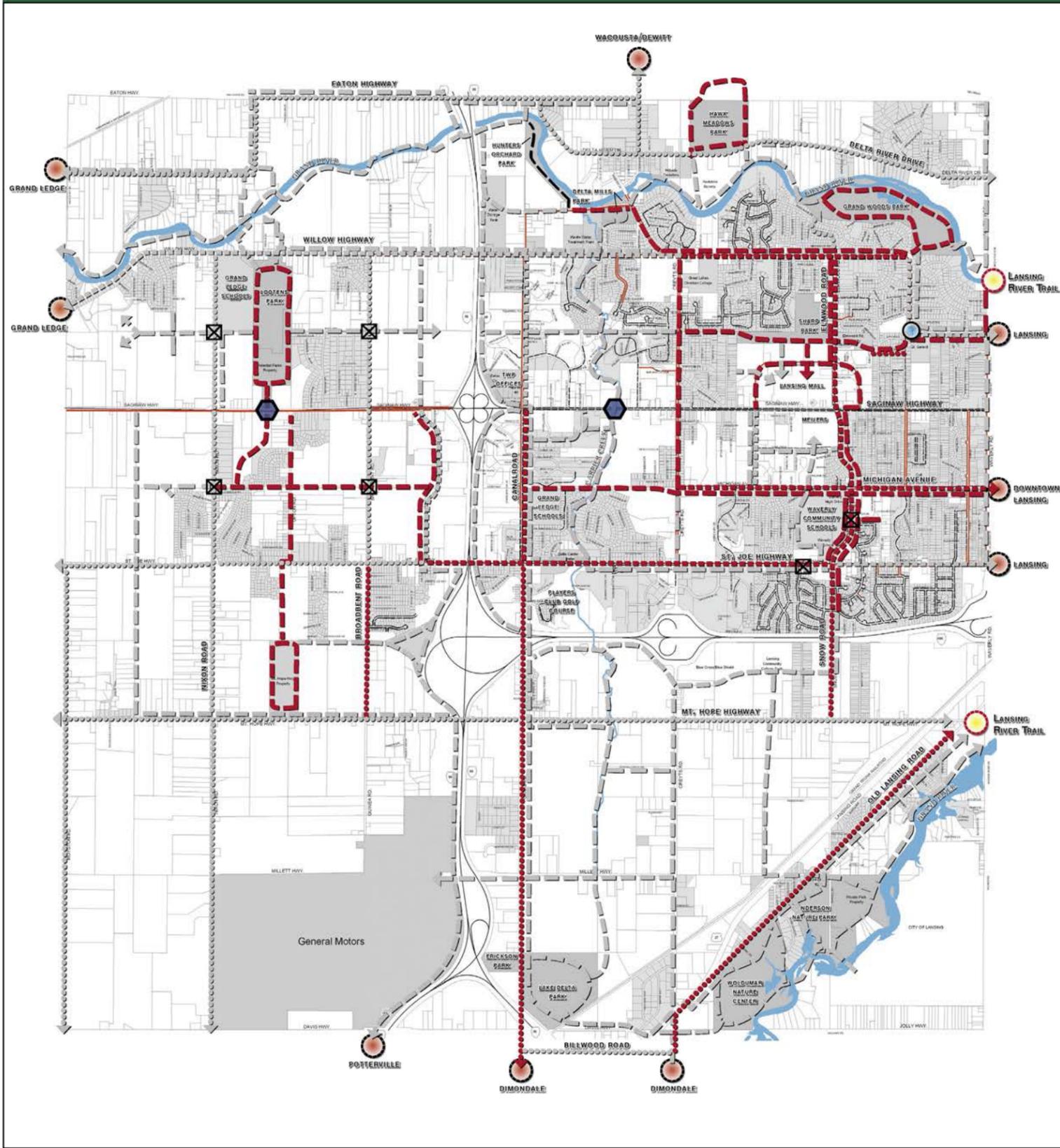
### **PRIORITY PLAN GUIDELINES...**

The following guidelines will assist the Township in making these decisions:

1. Create Safe Routes to Schools – provide safe routes in and around schools where a higher concentration of pedestrians are most common. A high priority pilot project should focus on the main campus of the Waverly Community Schools where the need has already been demonstrated.
2. Provide Recreational Trails within Public Parks – Hunters Orchard Park has proven itself as a success with the development of a 1 ¼ mile "off road" nature trail. Continue to mimic variations of this project throughout the public park system by using public parks for more "off road" trails that will eventually link to the non-motorized transportation system.
3. Develop Connections to Commercial and Community Areas – take advantage of opportunities that allow for connections to be made from schools, parks and neighborhoods to the commercial centers (i.e. the Lansing Mall), and Civic Centers like the new library and/or Township Hall as an example.
4. Acquire and Develop Connections Along Natural Corridors and Undeveloped Lands – utilize the natural systems within the Township as "off road" connections through greenways, along rivers, creeks, fields or other undeveloped lands to provide connections.
5. Connect Neighborhoods to the Non-Motorized Transportation System – whenever possible allow the sidewalk system within neighborhoods to connect to the schools, parks, commercial and community areas as well as the natural corridors.
6. Prepare to Connect to Adjacent Communities – it is evident that the City of Lansing is planning to extend the Rivertrail west toward Delta Township as well as other non-motorized systems. Delta should make a concerted effort to connect with this mid Michigan non-motorized system.
7. Plan for Developing Areas within the Township – development is occurring primarily to the west of I-96 but also south of I – 496. The Township has a unique opportunity to work with developers to set aside greenway corridors within site plans to create future connections with the Non-Motorized Transportation Study throughout the undeveloped areas.



# PRIORITY PLAN



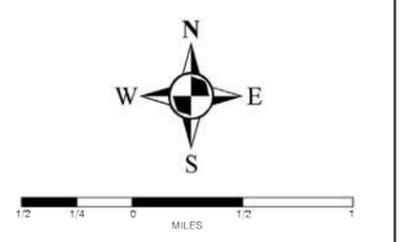
**LEGEND\***

- PROPOSED LANE CONVERSION
- PROPOSED BIKE LANES
- PROPOSED SHARED USE PATH
- EXISTING SHARED USE PATH
- PHASE I
- FUTURE PHASES
- ⊠ PROPOSED MID-BLOCK CROSSING
- ⬡ PROPOSED PEDESTRIAN BRIDGE OVERPASS
- PROPOSED SIDEWALK
- EXISTING SIDEWALK
- POSSIBLE FUTURE TRAIL CONNECTION FOR DELTA TRAILS
- POSSIBLE COMMUNITY CONNECTION FOR DELTA TRAILS
- POSSIBLE TRAFFIC ROUND-A-BOUT

\*Base Information Provided by the Delta Trails Township Engineering Department

\*SEE PAGES 12 AND 13 FOR DEFINITION OF TERMS LISTED IN LEGEND

**JANUARY 2005**



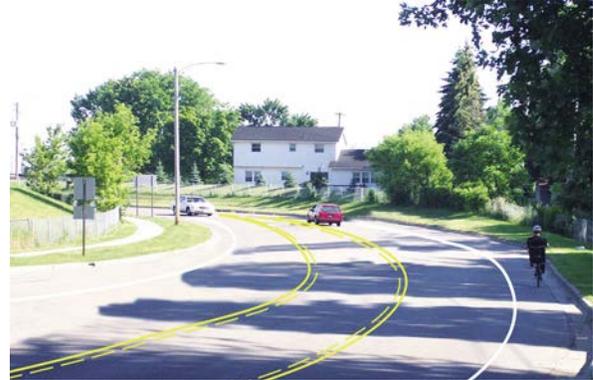
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## DEFINITION OF TERMS...

These are definitions of terms, which are used on The Vision and Priority Plan, as well as, throughout this study.



Elmwood Road looking north from Michigan Avenue



Elmwood Road with lane conversion

## LANE CONVERSION

- Restripe an existing 4 lane road to (2) 10-11' vehicle lanes, adding a 9'-10' left turn lane, and adding 4' to 5' bike lanes adjacent to the curb
- Cost is minimal because striping is inexpensive
- Implement with existing road, road resurface or new road construction projects
- A lane conversion is dependent on approval by the Eaton County Road Commission



Snow Road looking north at St. Joseph Highway

## BIKE LANE

- A paved area 4' to 5' wide
- An area reserved and signed for bicycle use only
- Delineated from the motor vehicle travel lane with a paint stripe
- Located at the edge of the roadway
- Painted bicycle logo in bicycle lane
- Bicycle lane signage

## SHARED-USE PATH

- A paved area 8' to 12' wide
- Provides two-way traffic for users
- Multi use trail users may include bicyclists, in-line skaters, wheelchair users, pedestrians, walkers, runners, baby strollers, and people walking dogs
- Sometimes is located outside the road right-of-way
- Used for "off-road" transportation or recreation

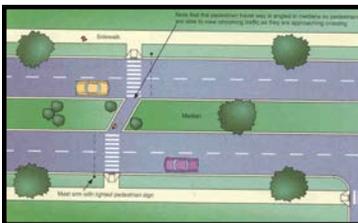


River Trail Portland, Michigan



### SIDEWALK

- A paved area 5'-6' wide (currently 5' wide is the Delta Township standard)
- Typically located in the road right-of-way
- Installed by Delta Township or a developer of subdivisions
- A sidewalk is installed in neighborhoods or along a main road



(AASHTO, 91)

### MID-BLOCK CROSSING

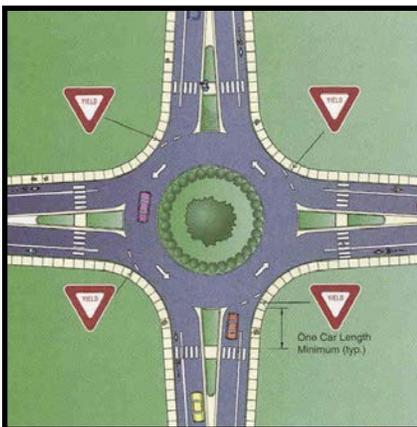
- A crossing point positioned within a block rather than at an intersection (Pedestrian and Streetscape Guide, 171).



www.pedbikeimages.org / Dan Burden

### PEDESTRIAN OVERPASS

- Typically bridge structures over a major highway or railroad.
- Many times these structures are raised and require ramps and stairs to provide for accessible pedestrian crossings of the roadway.
- Enclosure prevents debris from dropping onto the roadway and a minimum width of eight feet is standard. If the bridge is to be shared with bicycles the recommended width is fourteen feet (AASHTO, 97).



(AASHTO, 79)

### ROUND-A-BOUT

- Usually installed at an intersection
- Eliminates the need for traffic lights
- Slows vehicular traffic down to 15-20 mph in the intersection
- Vehicles yield to the right-of-way of a car within the round-a-bout
- Allows a pedestrian to be more visible when crossing at the intersection
- Road Commission currently has jurisdiction for installation and maintenance

## PUBLIC INPUT PROCESS...

Landscape Architects & Planners, Inc., held a series of public meetings, conducted a Township wide survey, and made recommendations for the development of the Delta Trails Non-Motorized Transportation Study. The Study was developed through a series of public input meetings, opinion surveys and mapping exercises. The input process attempted to reach a cross section of the community by also posting information on the Township's website, publicizing in the Township magazine and by organizing a Steering Committee which was comprised of citizens and local government officials.

The first public input meeting was held in September 2003. Since the first input meeting there have been 16 additional public input meetings, with over 550 people attending. Other opportunities for input included the Input Survey, which was mailed randomly to 400 households, representing a cross-section of the community. The Survey was also posted on the Township's website and included in the quarterly Township Magazine. This presented ample opportunity for the community to respond and offer input as an approximate 17,000 additional households were enabled to review it.

The results indicated support of the Vision with 61% in favor and 39% opposed from surveys. Of those opposed they were primarily concerned with three areas; namely Carrier Creek, Grand River North, and the East-West Collector. All of these areas focused on privacy and land ownership issues.

Other significant findings indicated the main destinations included Lansing Mall 27%, Hunters Orchard Park 21%, Delta Mills Park 21%, Grand Woods Park 17%, and Sharp Park 14%. Other destinations indicated specific neighborhoods and schools.

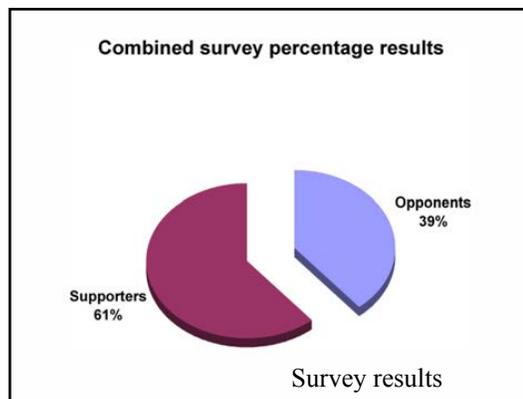
Of the issues raised during the input process most have been recognized in other non-motorized transportation studies and are considered common challenges. During this Study, those concerns seemed to focus on "off road" trails near homes, which is also common. Primary concerns centered on the following:

- There will be an increase in crime because of the trail.
- The litter in the area will increase when the trail is installed.
- Concern about privacy/noise because of the trail.
- The incidence of graffiti will increase in my area because of the trail.
- There will be a reduction in my property values because of the implementation of a trail.

Both local and national statistics overwhelmingly demonstrate that property values stay the same or rise, in most cases 7%-15%. The remaining issues reflect the community and are considered management and/or policy related issues, which must be recognized at the onset of implementation of the prioritized projects.

In an effort to build support for the Vision a friends group has emerged during this public process and has offered a petition of 928 signatures in support of the Non-Motorized Transportation Study, most from within and surrounding the three areas of concern. This is significant because for any new initiative to succeed it requires grass roots support.

In fact, we have found some specific examples of opposition by individuals in the community prior to the implementation of a trail system. However, after it was built and there was time to observe how it functioned, their concerns were eliminated and many became trail advocates because of the positive influence it had on the local community.



The key to any successful planning effort is the use of a public input process where the community has the chance to be involved in the overall planning. In addition, a community can build a contingency of partners (friends of the trail group and many times foes), who have an interest in the planning process, the future of the community, the implementation of the Vision and the overall success of the entire project.

## **FINAL RECOMMENDATIONS...**

General and specific recommendations for the Study are summarized below and categorized into on road facilities, off road facilities, and other recommendations. Many of these recommendations need further study by the Planning Commission and other appropriate review and approval agencies to see how they compare to the current ordinances and other adopted Township planning studies prior to actual implementation. After its adoption, further study needs to be completed for specific routes and conditions. The results of these studies and final analysis of each route needs to be presented to the appropriate municipal body for final review and approval.

### **General Recommendations**

#### On Road Facilities:

1. Bike Lanes – Add bike lanes to existing roadways by restriping the road within the existing section. Some sample roadway sections have been included in this Study to show how the bike lanes can fit into the existing roadway. This kind of change would require approval of the ECRC.
2. Lane Conversion - Typically a road is converted from a four to three lane conversion that works within the existing roadway section. When roads are being repaved or rebuilt, a lane conversion should be considered requiring dialog and cooperation between the Road Commission and Delta Township. See the definition of Lane Conversion section in the definition of terms.
3. Mid-block Crossing - We recommend several mid-block crossings throughout Delta Township. We also recommend that one be installed as a prototype on a road that has been converted from four to three lanes. The installation of one can be used on a trial basis to see how it is utilized. As people become familiar with the function of a mid-block crossing and location, others may be installed.
4. Pedestrian Bridge Overpass – Saginaw Highway is the main road artery, which runs west/east. The large traffic volume and high speed makes it difficult to cross Saginaw Highway. We recommend separation of pedestrians from vehicles with the installation of a pedestrian bridge overpass. One is proposed at Saginaw Highway and Carrier Creek and the other is proposed just south of Lootens Park, over Saginaw Highway.
5. Sidewalks – Currently the Township sidewalk standard width is 5’ minimum but 6’ wide is preferred. We would recommend the Township consider changing the standard width to a minimum of 6’ wide along major roadways to allow adequate room for two-way traffic on sidewalks.
6. Round-a-bout – We are showing a round-a-bout at the corner of Willow Highway and Arden Road. Before a final recommendation can be made in this location, further traffic studies should be conducted. The installation of a round-a-bout can be used as a prototype project since there are no others in the Township. See the Priority Plan for the specific location.

#### Off road Facilities

1. Shared-Use Path – Numerous shared-use paths are recommended throughout the Township. A shared-use path is typically 8’-12’ in width; their purpose is to provide multiple modes of non-motorized transportation for the user. See the Priority Plan for specific locations.

#### Other Recommendations

1. Publicly Owned Land: There are publicly owned lands identified in this study where a trail is being recommended. Any trail design must respect the rights of the adjacent landowners as much as possible. Individual landowners should be consulted during the preliminary design stage of the route to account for privacy measures among other



2. Privately Owned Land: The only way to develop a trail on private land is obtaining the private land and placing it in public ownership. It is recommended that this be accomplished by purchase or donation. It is not recommended that eminent domain or condemnation be used for this purpose. Riparian rights come with the landowner's bundle of rights. Riparian rights cannot be granted without the owner's permission through an easement or purchase.
3. Public Easements: It is recommended that when the Township seeks easements for public use, such as utilities, maintenance, or other uses, a provision should be included to allow for recreational use or future trail construction within that easement.
5. Design Criteria: It is recommended that current design criteria be used to design the trail. This would include meeting the ADA (barrier free) standards, AASHTO (design standards), and others that are common for public trails. Privacy should be accommodated to the extent possible by the use of fencing, landscaping, or other visual barriers.
6. Lighting: Lighting is not recommended along the trail. The hours of operation for trails are generally from dawn to dusk. The need for lighting usually appears only in densely populated areas where use is promoted after dark such as near downtown centers, retail areas, and event venues. Delta Township does not fit this description since it is primarily a residential community.
7. Noise: Non-motorized trails are generally quiet for the most part. Noise usually becomes a factor if large events are scheduled on the trail or if they are motorized. An occasional barking dog or a person's voice are the main sources of noise. However, if this is an area of concern, it is recommended that enforcement of regulations can control most of these disturbances.
8. Materials: It is recommended that the Township consider a wide range of trail surfaces during the planning process. Do not assume that asphalt is the only choice. If strollers and/or roller blades are a primary factor, then asphalt may be the material of choice; but other surfaces should be considered in the design process based upon potential uses.
9. Conservation Practices: The most up to date conservation practices are recommended when developing a trail within any vegetated area. Enhance and/or avoid sensitive natural features whenever possible (primarily large healthy trees and/or underbrush). Use interpretation and education whenever possible to allow for greater appreciation of natural resources. Develop conservation policies that protect and enhance the natural systems associated with this area.
10. Trail Heads and Access Control: Discourage the development of large trailheads in neighborhoods. It is recommended to provide intimate connections to neighborhoods and destinations. Use barriers and/or gates to deter motor vehicles from entering the trail. Post signs to inform users of regulations.
11. Other Agencies: It is recommended to communicate with and utilize the expertise of other agencies (Drain Commissioner, Road Commission, Police Department, Public Service Department, Parks Department, Planning Department, and others) during the design, development, and management of this trail system.
12. Screening: It is recommended that there be adequate setbacks and generous screening or buffers between the trail and the adjacent property owner. Use vertical barriers, fencing or similar means to provide and create privacy where requested.
13. Trail Advocacy Group: A trail advocacy group is recommended to allow public participation in the development and monitoring of the trail. Work with local law enforcement agencies to implement police patrols and neighborhood watch programs from the initial stages of development. Add a regular bicycle patrol component to the police program. Allow designated neighbors to participate in the patrol of the trails and greenways and encourage communication and participation.
14. Maintenance Program: Designate the off-road trail areas as a Township Park and allow the Parks Department to manage the property. The trail will require regular trash pick up, sweeping, and plowing. Provide the personnel and equipment necessary to perform these functions.
15. Adjacent Communities: Delta Township should communicate with the surrounding communities to discuss potential connection locations. The timing and exact connection points should be agreed upon so connectivity will happen between communities.

16. Bridges: Work with Michigan Department of Transportation (MDOT) and the Eaton County Road Commission (ECRC) to coordinate any future improvements. Accommodation should be made to include non-motorized transportation provisions whenever a bridge reconstruction or new bridge is considered within Delta Township.

### **Special Recommendations**

Further study will allow a more in-depth analysis and should be completed when specific routes are being considered. Refer to the Priority Plan for recommended routing. A study process should include: study/design development (design of specific areas based on the Priority Plan), verification of funding (Application for grants and/or allocation of local funds), implementation (Construction plans, bidding and construction), maintenance and post evaluation (The Township to provide maintenance and monitor procedures).

### **Main North/South Routes Recommended Within the Township**

#### **On Road Facilities (bike lanes or lane conversions):**

- A. Elmwood Road – Lane conversion from Willow Highway to south of St. Joseph Highway
- B. Canal Road – Lane conversion from Willow Highway to St. Joseph Highway
- C. Broadbent Road – Add bike lanes on both sides of the road from Willow Highway to St. Joe Highway
- D. Nixon Road- Add bike lanes on both sides of the road from Willow Highway to Davis Highway
- E. Old Lansing Road – Add bike lanes from Mt. Hope Highway to South Township Boundary

#### **Off Road Facilities (shared-use path):**

- A. Creyts Road – Add a shared-use path to one side of the road from Willow Highway to St. Joseph Highway, south of I-496 on the west side to South Township Boundary
- B. Carrier Creek – Add a shared-use path from Hawk Meadows Park, south past the water treatment plant, across Willow Highway to St. Joseph Highway, south of I-496 to Lake Delta Park
- C. Canal Road- Add a shared-use path on the east side of Canal Road from Willow Highway to Lake Delta Park
- D. West Route – Add a shared-use path from Eaton Highway, through Lootens Park across Saginaw Highway

### **Main East/West Routes Recommended Within the Township**

#### **On Road Facilities (bike lanes or lane conversions):**

- A. Eaton Highway – Currently road is gravel. If road is paved, add bike lanes in the design of the road construction.
- B. Willow Highway – Lane conversion from West Township Boundary to Waverly Road.
- C. St. Joseph Highway – Lane conversion from Market Place Drive to Waverly Road. Add bike lanes on St. Joseph Highway from Royston Road to Market Place Drive.
- D. Mt. Hope Highway – Add bike lanes from Royston Road to Waverly Road.

#### **Off Road Facilities (shared-use path):**

- A. Eaton Highway – Add a shared-use path from West Township Boundary to Hawk Meadows Park.
- B. Willow Highway – Add a shared-use path from Lootens Park to Waverly Road.
- C. Michigan Avenue- Add a shared-use path on the south side from Creyts Road to Waverly Road.
- D. St. Joe Highway – Add a shared-use path from Carrier Creek to Snow Road.
- E. Millet Highway – Add a shared-use path on the south side from I-96 to Creyts Road.
- F. East-West Collector – Add a shared-use path from I-96 to Waverly Road.

**Proposed Implementation Process** - It is recommended that an implementation process be adopted such as the following:

### **Planning**

- A. Obtain the following information
  - 1. Boundary Survey
  - 2. Topographic Survey
  - 3. Tree Survey
  - 4. Ecological Survey
  - 5. Hydrological Survey
- B. Analyze Data
- C. Prepare a Preliminary Plan
- D. Determine Ownership – Agency in Charge (Dedicated Park vs. Others)
- E. Determine policies to govern the trail
- F. Prepare a Preliminary cost estimate

### **Funding**

- A. Apply for Grant funding - Federal and State funding opportunities, private foundations, others.
- B. Review Budgetary Allocations - matching funds for grants or approve allocation of local funds for implementation

### **Design Development**

- A. Meet with citizens to discuss design parameters
  - 1. Discuss individual needs
    - a. Trail location within the proposed route
    - b. Individual access to trail from adjacent property
    - c. Privacy Issues – fencing, landscaping, setbacks
- B. Review Specific Design Issues
  - a. Vehicle deterrents – bollards, gates, barriers
  - b. Drainage – trench drains, culverts, catch basins, etc.
  - c. Road crossings and/or intersections
  - d. Signs (location, type, size etc.)
  - e. Amenities (benches, trail markers, exercise stations, etc.)
  - f. Materials (asphalt, concrete, limestone, cinders, etc.)
  - g. Refine preliminary cost estimate

### **Construction Documents**

- A. Prepare construction documents
- B. Prepare written specifications
- C. Develop Final cost estimates
- D. Publicly Bid project
- E. Construction observation
- F. Maintenance and post construction evaluation (The Township to provide maintenance and monitor procedures)



## **ORDINANCE CONSIDERATIONS**

Some communities have completely restructured their zoning ordinances to permit mixed-use developments with higher densities, increased densities in proximity to major destination points and transit lines, and traditional neighborhood developments. Many of these ordinance considerations would need to be studied further by the Planning Commission and other appropriate review and approval agencies to compare how each ideal would impact the current ordinances and other adopted Township planning studies prior to actual implementation. Final trail policies should align with current ordinances or be modified to allow for pedestrian friendly design and implementation.

We recommend that Delta Township consider the following principles which can make the Township more pedestrian friendly. Numerous tools can be used to accomplish this however; one is to upgrade the land development/subdivision regulations. The principles that should be considered are:

- Discuss pedestrian accommodations early in the site planning process so that existing transportation efforts can be coordinated with any proposed developments.
- During review of new residential developments, consider sidewalk design that includes connectivity between adjacent parks, schools, other residential communities and commercial centers.
- During review of commercial developments, consider sidewalk design that includes pedestrian connections to neighborhood parks, schools, other residential communities and commercial centers.
- In commercial districts consider placing a higher emphasis on pedestrian access by setting maximum limits on the amount of parking, encouraging shared parking, and provide direct access to the front of building sites with direct sidewalk connections to the main streets
- Consider having the developer pay for improvements such as sidewalks, shared-use paths as shown on the Vision for all new developments. This would include sidewalks or shared-use paths within the development and along right-of-ways.

## **SIDEWALK ORDINANCE**

The existing sidewalk ordinance requires a 5' wide sidewalk be installed. Two people walking side-by-side or passing one another generally require 1.4m (4.67') of space, while two people in wheelchairs need a minimum of 1.5m (5') to pass one another, so the current 5' wide sidewalk should be reviewed.

The sidewalk ordinance should be reviewed and consider a revision to require:

- 6' minimum width for all new sidewalks along major thoroughfares.
- 10' wide minimum for shared-use paths; in rare exceptions when volumes are smaller, then an 8' wide, shared-use path should be considered.

## **SHARED-USE PATH DESIGN CRITERIA**

Shared-use paths should contain minimum design criteria:

- Minimum 10' in width
- Minimum 2' graded area adjacent to both sides of trail
- Minimum 5' separation between the edge of the path to top of slope when it is greater than 1 vertical unit to 3 horizontal units
- Vertical clearance to obstructions of 8'

- Grades not steeper than 5% recommended, with a graduated scale up to 11% or more for short distances
- Separation from roadways should be a minimum of 4'
- Cross slopes should not exceed 2%.
- Path-roadway intersections should be carefully designed,. (See AASHTO Guide for the Development for Bicycle Facilities.)

Once reviewed by the proper public process, the new widths should be adopted and incorporated into the zoning ordinance for implementation of future sidewalks.

## **FUNDING**

The current Township budget allocation for sidewalks is \$50,000 per year for replacement and construction of new sidewalks for the entire Township. In 2004 construction dollars, that equates to approximately 2,500' of 5' wide sidewalk, which is less than one half of a mile of sidewalk.

There are two recommendations to fund the implementation of the trail system. One is to allocate additional funding for the sidewalk improvements and the second is to consider issuing a sidewalk millage.

Because of the increasing demand and safety concerns on the existing sidewalk system, the Township should consider a long-term commitment to the implementation of the non-motorized transportation system. One tool other communities use to fund trails is a sidewalk millage. This would allow for an annual funding source to provide maintenance and construction of the trail system. A sidewalk millage would also enable Delta Township to apply for federal and state funding where local money can be leveraged to obtain grant funding from these agencies.

If the Township issued a millage that could generate between \$400,000 and \$450,000, it would allow the Township to have money to apply for state or federal grant funding. If the township received a grant, it could increase funding by approximately another 25% per year. These funds could then be used to begin the design, construction, and maintenance of the first phase.

## **CITIZEN INITIATIVE**

Once implemented, it is citizen participation that is crucial for the success of the approved Study. A trail advocacy group is needed to continue to voice support for non-motorized issues in the Township. It will take long-term commitment and support by the residents to begin to change old planning practices where non-motorized transportation had not been previously considered in the planning process. One way to implement change is to have citizens attend the Park Commission, Road Commission, Delta Township Planning, and Township Board Meetings and express concerns about pedestrian safety and to show support for the non-motorized transportation issues. A continuous presence will communicate the desire for a more pedestrian friendly community.

We have also included some implementation tools in the back of this study to identify some common traffic-calming measures being used across the country. Traffic-calming measures are physical measures that reduce the negative effects of motor vehicle use, alter driver behavior, and improve conditions for non-motorized street users.

## **ROADWAY WIDTHS**

The Eaton County Road Commission (ECRC) is responsible for the design, construction and maintenance of the roads in Delta Township. The road width most commonly used in design at the current time is a 12' wide lane.

The number of lanes on a roadway is selected primarily to serve the demands of vehicular traffic at a desired level of service. However, future roads should consider the effects of roadway width on pedestrians. The wider the road, the faster the vehicles travel making it more difficult for pedestrians to cross. Our study recommends a 10' or 11' lane as a standard width for future road design and implementation.

The selection of lane widths for roadways in developed areas involves reaching a balance between the competing needs of motor vehicles, bicycles, and pedestrians. The issues to consider in reaching a balance include safety, traffic operational efficiency, and mobility. Site-specific considerations strongly influence this balance, and should be addressed when making lane choices.

## **ROADWAY RADII**

The radii at most intersections in the Township are designed by the Eaton County Road Commission to allow for adequate truck turns. The large turning radii encourage higher turning speeds for trucks. In future intersection design smaller radii should be considered. This serves as a traffic calming tool which slows traffic down and increases safety for pedestrians.

## **MAINTENANCE**

Proper trail maintenance is just as important as using correct design and construction techniques. A sidewalk that becomes inaccessible because of inadequate maintenance or improper construction zone provisions can be just as inconvenient or undesirable as failing to construct the proper pedestrian facilities in the first place.

Public works agencies should have a program for routine maintenance checks of trails and should have a process in place to quickly respond to citizen reports of damaged surfaces, particularly along high-priority routes, so that pedestrians with mobility impairments do not have to seek alternative routes.

Public works agencies should adopt a snow removal program for trails that includes ensuring that the most heavily used pedestrian routes are cleared, including bus stops and curb ramps at street crossings so that snow plows do not create impassible areas.

Vegetation along trails can be a safety issue. Prevent vegetation from encroaching into walkways. Roots should be controlled to prevent break-up of the sidewalk surface. Adequate clearances and sight distances should be maintained at driveways and intersections; pedestrians must be visible to approaching motorists.

A regular pruning and maintenance program is recommended. Vegetation and litter including, leaves and branches, should be removed on a regular basis. A checklist of surface repair and vegetation maintenance items should include:

- The inspection of walkways regularly for surface irregularities
- Responding to citizen complaints in a timely manner
- Repairing potential hazardous conditions immediately
- Performing preventative maintenance operations, such as keeping drains in operating condition and cutting back intrusive tree roots
- Sweeping a project area after repair to any surface
- Cutting back vegetation to prevent encroachment in the path's clear zone



## VISION AMENDMENTS...

The Vision should be reviewed and updated every five years. Prior to the expiration of the Vision, the Township may want to update portions of the Vision, in particular to review the priorities for each route, and status of obtaining easements. The approved vision may be amended at any time during the five-year period to reflect significant changes in community conditions, needs, or change in obtaining significant easements in a particular area. If an amendment takes place during the five-year period, the changes should be presented at a public meeting where public participation is encouraged and considered. It is especially important to update the Vision if the Township is considering a grant application with the State of Michigan such as the Michigan Department of Natural Resources (MDNR) or Michigan Department of Transportation (MDOT).

At a minimum a vision amendment or update should include:

- Public Input – This should include a description of the public involvement process used in development of the amendment including the public input methods utilized. Public input should be encouraged when considering any amendments or revisions to the Vision.
- Review current base information and inventory changes such as new developments that have taken place since the adoption of the Vision and how they affect the overall Vision.
- Update the Priority Plan and make changes to the Vision.
- Discuss new technology for construction methods and materials.
- Update implementation costs based on inflation and priority adjustments.
- Review progress of securing easements or newly acquired Township properties.
- Review and evaluate overall connectivity to destination points such as parks, schools, neighborhoods and commercial areas, Township owned properties and adjacent communities.
- Review and discuss possible funding opportunities; public and private.
- Document local adoption of the amendment or update to the Vision.
- Develop a written summary indicating what aspects of the original Vision have been revised and why the changes were made.
- Communicate and distribute the revised Vision to the general public and other public agencies.

Amendments should be adopted in a similar process to the Vision. Therefore, the same governing body or bodies that adopted the original plan should adopt the amendment unless the approving governing body has specifically delegated authority.

In conclusion, after review and analysis of the information summarized in this Study, numerous public input meetings, reviews by the Steering Committee, input from other public agencies, the Eaton County Drain Commission, and the Michigan Department of Transportation, Township staff, the Study has been submitted to the Township Parks, Recreation and Cemeteries Commission and Planning Commission for review and therefore, we recommend the Board adopt:

1. The Executive Summary (Part One)
2. The Vision (Part One)
3. Priority Plan (Part One)
4. The Waverly Community Schools Special Area Report (Part Two Pilot Project)

We also recommend as an option to also adopt:

5. Supplemental Information (Part Three) - Background information to the Study process

Adoption of the Executive Summary (Part One), The Vision (Part One), Priority Plan (Part One), The Waverly Community Schools Special Report (Part Two Pilot Project) and Supplemental Information (Part Three) if desired, are all components of the Study. Adoption allows the Township to begin the process of obtaining private easements, applying for funding opportunities, working with other agencies, implementing a pilot project for evaluation, and working with the public to implement the non-motorized transportation routes as identified in The Vision, Priority Plan and The Waverly Community Schools Special Area Report.





# DELTA TRAILS

**NON-MOTORIZED TRANSPORTATION STUDY**



## PART TWO: PILOT PROJECT WAVERLY COMMUNITY SCHOOLS FOCUS AREA REPORT SEPTEMBER 2004



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## **WAVERLY COMMUNITY SCHOOLS FOCUS AREA REPORT...**

The Waverly Community Schools Specific Area Study was developed as a “Pilot Project”. This Study focuses specifically on the area surrounding the Waverly Community Schools main campus on the west side of Snow Road between Michigan Avenue and St. Joseph Highway. In this study, vehicles and pedestrians were discussed and studied in a focus group with school administrators, students and the general public. They voiced their opinion on issues related to existing sidewalks, connections to the school, safety concerns on roadways and crossings to the schools. The results are recommendations for non-motorized transportation implementation tools to improve connection, safety, and direct pedestrians to the main campus. A phasing plan was developed to indicate a priority for which tools should be implemented first.

Further traffic studies should be completed on some of the non-motorized transportation tools such as four to three lane conversions and mid-block crossings.

It is also recommended that studies similar to this be completed at other school sites in the Township for the Waverly Community Schools and Grand Ledge School District.

The Waverly Community Schools Specific Area Study contains the following information:

- Introduction
- Purpose
- Public Input
- School Safety
- Definition of Terms
- Recommendations
- Conclusion



## INTRODUCTION

Delta Township administrators had been working on a Non-Motorized Transportation Plan since 2002. As a result of this study, it was determined that the Township would hire a planning firm to focus on a Township-wide study. The Board for Delta Township initiated the Delta Trails and Greenways: Non-Motorized Transportation Study, here referred to as the Study, in July 2003. They requested that the Delta Township staff advise and obtain proposals to develop the Study, which focuses on routes to connect neighborhoods, schools, parks and shopping districts. The Delta Township Board recognized the growing need to provide a network of Non-Motorized Transportation routes and safer pedestrian routes for residents of Delta Township. The Township has an existing sidewalk system network, which is ongoing and being implemented over time. The sidewalk system limits pedestrian movement to within the existing right-of-way which is not always continuous nor does it offer separation from vehicles. It also does not provide the highest recreational experience.

The goal of the Study is to:

- Provide a foundation for non-motorized transportation.
- Obtain citizen input through an interactive public input process.
- Promote safety throughout the non-motorized transportation system.
- Identify community assets or greenways that have potential for supporting an enhanced non-motorized transportation system.
- Recognize and address the specific needs of the Delta community.
- Provide opportunities for all Township residents to use the non-motorized transportation system regardless of their socio-economics or physical abilities.
- Develop continuous primary routes running north to south and east to west.
- Plan and implement connections to other greenways and non-motorized transportation systems in the surrounding area.
- Connect neighborhoods, schools, parks, commercial areas, Township owned lands, natural, cultural, and scenic features whenever possible.
- Encourage physical activity by increasing the number of residents who walk or bike daily.
- Enhance the quality of life the Township provides for it's residents by developing a non-motorized transportation system.

The following is an pilot project as a result of the planning process. This study was, in part, a response to the request made by the school district and by citizens located in close proximity to the Waverly school districts' main campus (high school, middle school, and elementary school). The main campus is bordered by Michigan Avenue to the north, St. Joe Highway to the south, and Snow Road to the east.

Landscape Architects & Planners, Inc., a planning firm located in Lansing, Michigan, was retained to develop the Study. The Study was developed through a series of input meetings where the public had numerous opportunities to voice their opinions regarding existing conditions, perceived concerns, and proposed physical improvements. This pilot project is a direct result of citizen input to address specific safety issues while allowing pedestrians safer routes to schools.

## PURPOSE

The purpose of this document is to serve as a guide for the main campus of the Waverly Community Schools and the surrounding area. This is a separate insert in the Delta Trails Non-Motorized Transportation Study, which is designed to address specific safety issues relating to non-motorized routes, street crossings, signs and signals, and road improvements.

## PUBLIC INPUT

In September, 2003 two public input meetings were held at the middle school auditorium on Snow Road. In the first meeting over 100 middle school and high school students participated. The students were asked to locate on a map which routes they currently use to walk or bike to school. They also identified specific locations where safety conflicts occur on their route to school. The data was gathered and summarized from the public meetings and then used to develop the Vision and Priority Plan.



The consultant also attended numerous meetings with Waverly Community School administrators to gain their perspective regarding pedestrian safety in and around the schools' campus.

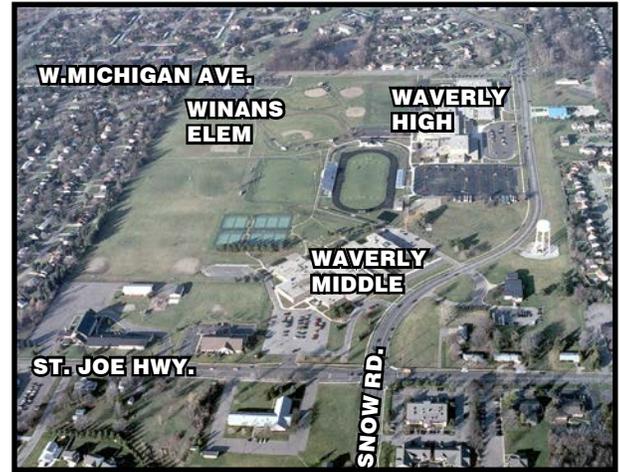
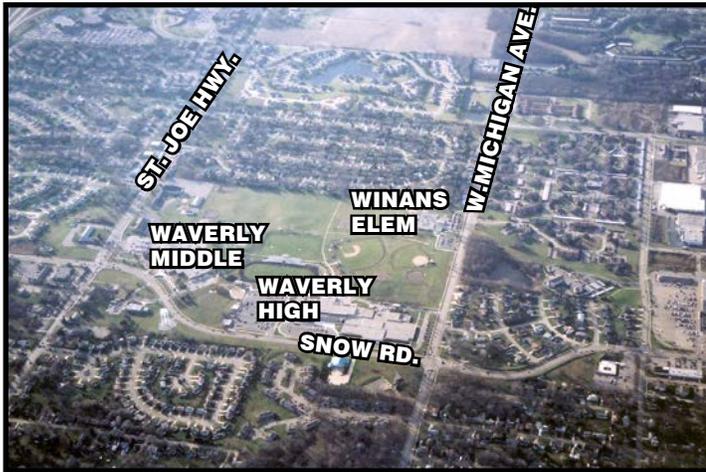
Other opportunities for input included: an Input Survey which was mailed randomly to 400 households which represented a cross-section of the community. The Input Survey was also inserted in the Delta Township Magazine for the fall 2003 issue (distributed to approximately 17,000 households), and posted on the Delta Township website where residents were encouraged to submit their comments electronically.

## **RECOMMENDATIONS**

The recommendations in this report have been graphically illustrated on a map showing the campus of Waverly Schools and surrounding area. Some of the proposed improvements include sidewalks, shared-use paths, crosswalks, mid-block crossings and lane conversions. A suggested phasing outline has also been developed and is encouraged to be used as a guide when funding becomes available from Waverly Community Schools, Delta Township, and/or the Eaton County Road Commission. Obviously, grants from the State of Michigan, private foundations, and other sources of funding need to supplement the local match to become truly effective.



## WAVERLY COMMUNITY SCHOOLS



The Waverly Community School District is located in Delta Township and is comprised of seven school facilities:

- Four elementary facilities (grades K-4)
- One intermediate school (grades 5&6)
- One middle school (grades 7&8)
- One high school (grades 9-12)

Student enrollment is approximately 3,000 for the entire school district. There are 700 students who attend the school district as part of the School of Choice Program.

### SAFETY FIRST PROGRAM

In the fall of 2003, the Waverly Community School District, introduced the “Safety First, Public Safety Awareness Initiative.”



“We are introducing a campaign to increase student, parent and citizen awareness of pedestrian and traffic safety around the schools and community-wide. It is our intent that the “Safety First” campaign will spread throughout the community and involve students, parents, citizens, motorists, area businesses, churches and service organizations. Keeping students safe as they travel to and from school is a priority. Waverly will cooperate with law enforcement authorities, emergency responders, and township and county officials to achieve this very important goal.” - Tom Pillar, Superintendent

This program was launched to remind their students about safety. The Safety First Program reminds students and parents that children’s safety needs to be first priority.

### SCHOOL SAFETY

A growing number of students receive rides to and from school, which causes peak vehicle usage in the school zone to occur from 7:00 to 9:00 a.m. and 2:00 to 4:00 p.m. Because of these peak usage times, schools create a unique situation when recommending non-motorized transportation improvements.

This high volume of traffic, both vehicular and pedestrian, can lead to situations that are unsafe. If located properly, sidewalks, crosswalks, and mid-block crossings can create a safer environment for both the students and the motorists.

## **DEFINITION OF TERMS**

### **SIDEWALKS**

The standard width for concrete sidewalks within Delta Township is 5' wide. Current trends indicate that sidewalk widths should vary depending upon its intended use. Typical users include; pedestrians, skaters, joggers, walkers, and bicyclists. Some of these areas have been identified under the shared-use path section of the proposed Study.

For a non-motorized transportation sidewalk/path network to be successful, it should eliminate gaps in the existing sidewalk network and provide a seamless connection between home and school.

Maintenance of the sidewalk system is also important in providing a safe sidewalk network. The Township currently does not clear snow on sidewalks within the road right-of-way. The Township staff reviews all existing sidewalks for cracks or settling on an annual basis to determine whether minor repair or replacement is required.

### **SHARED-USE PATH**

A shared-use path is typically 8-12' wide and is made of concrete or asphalt. Shared-use paths can be located in or outside of the road right-of-way. A shared-use path allows for two-way traffic. Shared-use paths are commonly used by bicyclists, in-line skaters, wheelchair users, walkers, runners, people with strollers, and dog walkers. Shared-use paths provide another alternative to a sidewalk for students to use when traveling to and from school. Areas where continuous sidewalks do not exist are candidates for shared-use paths. Like sidewalks, shared-use paths can provide a continuous route for students traveling to and from school and/or to connect neighborhoods, community centers, and shopping districts.

### **CROSSWALKS**

A crosswalk is a marked area in the road delineating a location for pedestrians to cross the roadway. By using proper signage and pavement markings, crosswalks alert motorists to exercise caution. Crosswalks alone do not guarantee safety. It is important that adults and children are taught to observe proper crosswalk safety practices and realize the dangers of crossing a roadway. When used properly, crosswalks can greatly improve safety of students and the general public.

### **MID-BLOCK CROSSINGS**

A mid-block crossing is a marked pedestrian crossing area and provides a pedestrian crossing island in the center of the road between intersections. It is recommended that a crossing guard be present at mid-block crossings during peak school hours. A mid-block crossing functions best if it is installed in a road that has been converted from four to three lanes. The characteristics of a mid-block crossing are:

1. Crosswalk pavement markings communicate to motorists and students that there is a designated pedestrian crossing area.
2. Proper signage must be installed along the roadway to warn motorists and bicyclists that they are approaching a pedestrian crossing. Signage must be installed to notify the students of the mid-block crossing.
3. A pedestrian crossing island should be provided in the center of the road, usually the width of the middle turn lane. Typically a crossing island is not less than 6' wide.
4. The crossing island is made out of different material than the road to help delineate the area. In many cases, the crossing island is slightly raised to emphasize the difference between the vehicle and pedestrian zone.



## LANE CONVERSIONS

There are different forms of lane conversions. One form takes an existing road and adds bike lanes by restriping the exiting traffic lanes. Another common type of lane conversion is to change an existing four-lane road into a three-lane road with bike lanes. In order to achieve a four to three lane conversion, a travel lane is removed in each direction, a left turn lane is added, and bike lanes are added along the edge of the road.

A lane conversion allows for on-road bicycles and decreases the number of traffic lanes and distance a pedestrian has to cross at a marked crosswalk or mid-block crossing.

Any lane conversion will require the support of the community and approval from the Eaton County Road Commission (ECRC). The Road Commission is the only agency that can approve changes within the public roadway system. ECRC is the public agency responsible for design and implementation of all road improvements in Delta Township. No lane conversions have been installed in the Township to date. However, as new roadway projects are considered, this study can be used as a guide for more pedestrian friendly improvements to allow Delta Township to become a more walkable community.

Recent studies of lane conversions have shown that reduced vehicle speeds lower the rate of collisions and injuries, while improving access for all modes of transportation. Traffic speed is typically reduced three to five miles an hour after a lane conversion. Other benefits include increased safety for bicyclists, pedestrians, and motorists.

Implementing lane conversions should be considered on roads with 18,000 (ADT) average daily traffic or less. In areas where traffic volumes are increasing, the cost versus benefit of the conversion should be studied further. When traffic levels exceed 18,000 to 20,000 ADT's, a lane conversion can result in increased traffic congestion and is not recommended.

Michigan Avenue, Snow Road and St. Joseph Highway should all be considered for a 4-3 lane conversion following additional traffic study and projection for future increases in traffic volumes on these roadways.

## RECOMMENDATIONS

It should be understood that the Study is intended to serve as a tool for long-term implementation. Many of the recommendations identified in this study will require further investigation and analysis prior to actual implementation. The scope of work for this study is to identify routes around the main campus for non-motorized transportation improvements which includes, pedestrian crossings, shared-use paths, bike lanes, lane conversions and possible future connections to Delta Township's existing and proposed trail system. Any additional road changes above and beyond what is recommended in this section will require additional traffic studies and a geometric intersection analysis. Mid-block crossings shown on the Priority Plan outside the Waverly main campus vicinity will require further study prior to implementation.

### Steps for Approval of Specific Non-Motorized Transportation Study Recommendations

1. (1) Meeting – Review recommendations with Steering Committee\*
2. (1) Meeting – Township Board reviews and approves recommendations for Waverly Community Schools study area.
3. (1) Meeting – Eaton County Road Commission\*\* Meeting - Present findings and request implementation.

#### \* Steering Committee

- |                                   |   |
|-----------------------------------|---|
| - Citizen Representation          | - Eaton County Sheriff Department   |
| - Business Owners                 | - Eaton County Drain Commission   |
| - Waverly and Grand Ledge Schools | - Michigan Department of Transportation (MDOT)  |
| - Parks & Recreation Commission   | - Ex Officio Members included Township Departments to include Planning, Engineering, and Parks & Recreation |
| - Eaton County Road Commission    |   |



\*\* The Eaton County Road Commission (ECRC) is the jurisdiction in charge of road construction and maintenance for Delta Township. Any proposed road changes require approval by the ECRC. LAP has presented these concepts before the ECRC to inform them of the proposed lane conversions and mid-block crossings that are being recommended by this study. The Schools and Delta Township staff should work closely with the ECRC as they plan and prioritize their on and off the road improvements.

## PHASE I

### SNOW ROAD

- The section of Snow Road from Michigan Avenue to St. Joseph Highway should be implemented first and used as a pilot project for non-motorized improvements in Delta Township. The cost of adding bike lanes to Snow Road will be minor since it will only require minimal changes in striping. A lane conversion is not required since three lanes already exist in this section of the roadway.
- Restripe the existing 40' wide Snow Road from Michigan Avenue to St. Joseph Highway as follows:
  - Existing road cross section: a 2' wide shoulder, three 12' wide lanes, and a 2' wide shoulder
  - Proposed restriping: a 4' wide bike lane, two 11' wide traffic lanes, one 10' wide center lane, and a 4' wide bike lane or a 5' wide bike lane, two 10' wide traffic lanes, and one 10' wide center lane, and a 5' wide bike lane
- Install a mid-block crossing on Snow Road between Michigan Avenue and St. Joseph Highway, connecting the Waverly Community Schools' Campus with the Dutch Hill Farms Neighborhood to the east. The crossing should be implemented only if the road is restriped, making the three lanes a standard width to allow space in the left turn lane for installation of a crossing island.
- Add an 8' wide shared-use path starting from the southwest corner of Snow Road and St. Joseph Highway and running south along the west side of Snow Road, continue west, just south of the existing storm water retention pond and connect into the Snow Ridge neighborhood on the Chimneyrock/Durango frontage of Outlet A. (An easement is required adjacent to the storm water basin.)

## PHASE II

### SNOW ROAD

- Add a shared-use path along the east side of Snow Road. The path would begin at Michigan Avenue and extend to St. Joseph Highway. This allows a connection to surrounding neighborhoods and the Waverly School Complex on Snow Road. Adequate right-of-way already exists in this area for the proposed path.

### ST. JOSEPH HIGHWAY

St. Joseph Highway is a candidate that should be studied for non-motorized improvements because of the recent accidents and fatalities along the roadway. The following are recommendations for St. Joseph Highway:

- Study the potential to convert four to three lanes from Waverly Road to Snow Road. The traffic counts are 15,909 average daily trips (ADT) which are currently below the maximum of 18,000 ADT's and are within the acceptable range for lane conversions.
- A traffic study needs to be conducted to determine if traffic projections will increase or stabilize. Other considerations include the number of driveways, the locations of driveways, the proximity of driveways to the intersection, and peak hour traffic volumes. Any of these factors could influence or preclude the four to three lane conversion.
- Realign the St. Joseph Highway and Snow Road intersection with striping to properly align with proposed traffic lanes if a four to three lane conversion proves feasible.
- Install a mid-block crossing between Farmstead Lane and Snow Road with crosswalk warning signage and crosswalk striping. It is recommended that the mid-block crossing should be installed only if the road is converted from four to three lanes. The exact location of this crosswalk will require additional study.
- Add a 6' wide sidewalk to the south side of St. Joseph Highway from Snow Road to Meadowview Lane (Installed Fall 2004).
- Restripe the Snow Road and St. Joseph Highway intersection if the four to three lane conversion proves feasible.

## **PHASE III**

### **MICHIGAN AVENUE**

- Study the potential to complete a four to three lane conversion from Waverly Road to Creyts Road.
- There is an existing mid-block crossing east of the Michigan Avenue/ Snow Road intersection west of Winans Elementary School. If Michigan Avenue is converted from four lanes to three, the crossing should be updated with proper signage, pavement markings, and a mid-block crossing island.
- Restripe the Snow Road and Michigan Avenue intersection if a four to three lane conversion proves feasible.
- Add a shared-use path on the south side of Michigan Avenue from Creyts Road to Waverly Road.

### **WAVERLY MAIN CAMPUS AREA**

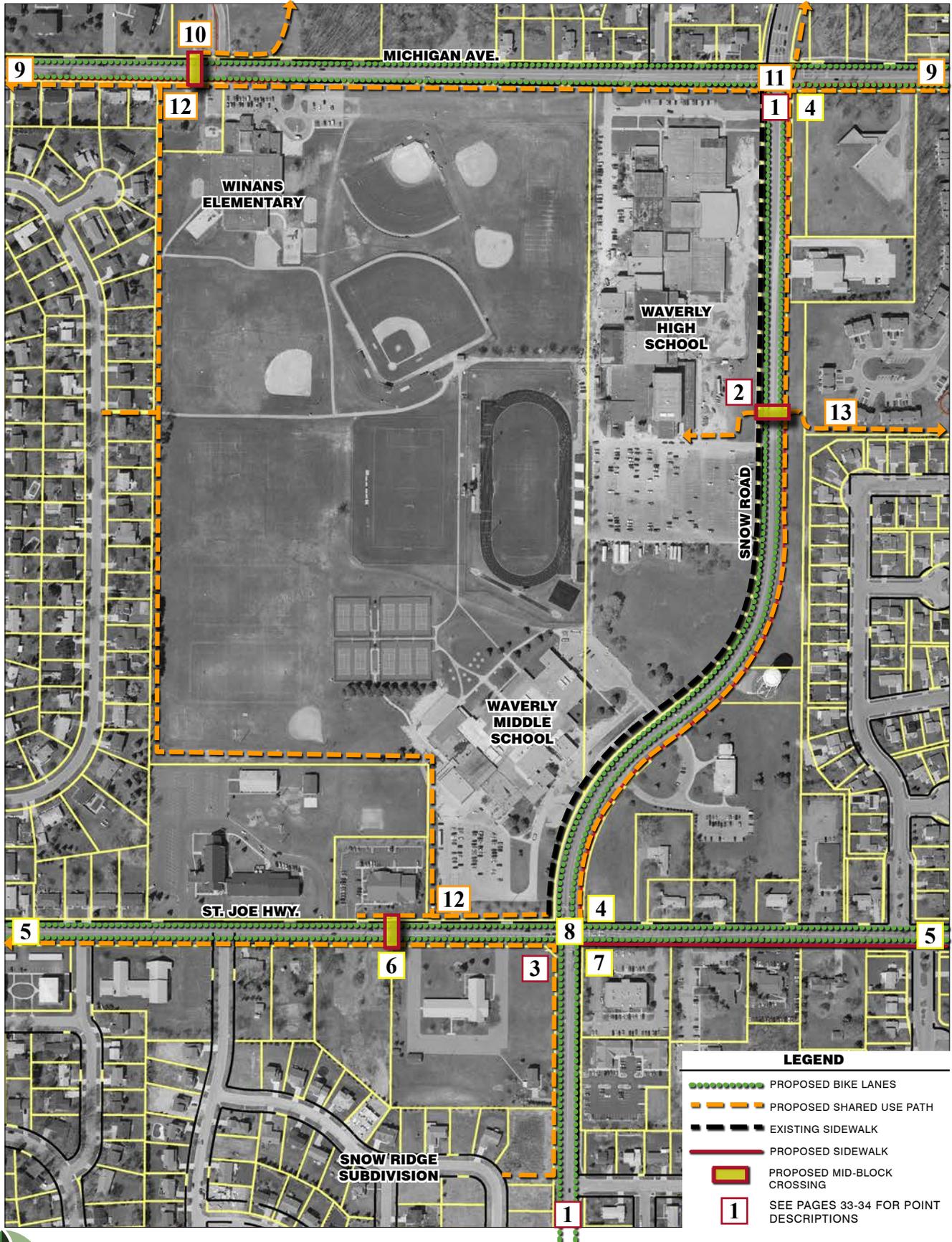
- Add a shared-use path along the west edge of the Waverly Community Schools Campus. The path would begin at the Michigan Avenue mid-block crossing by Winans Elementary and continue to the mid-block crossing at St. Joseph Highway south of Waverly Middle School.
- Add a shared-use path connecting the Waverly Community Schools Campus with the Dutch Hill Farms Neighborhood. This Trail would start at the proposed mid-block crossing on Snow Road and proceed east to Stoll Road.

A map of the Waverly Schools area has been prepared showing the location of the recommended improvements. The numbers shown on the map are the approximate location of the recommended improvements, see pages 33-34 for descriptions.

It is the intent of this interim report to provide timely information to the Delta Township Board of Trustees and the Waverly Community Schools so that decisions can be made to improve the pedestrian safety to and from school.



# Waverly Schools Area: Non-Motorized Transportation Improvements

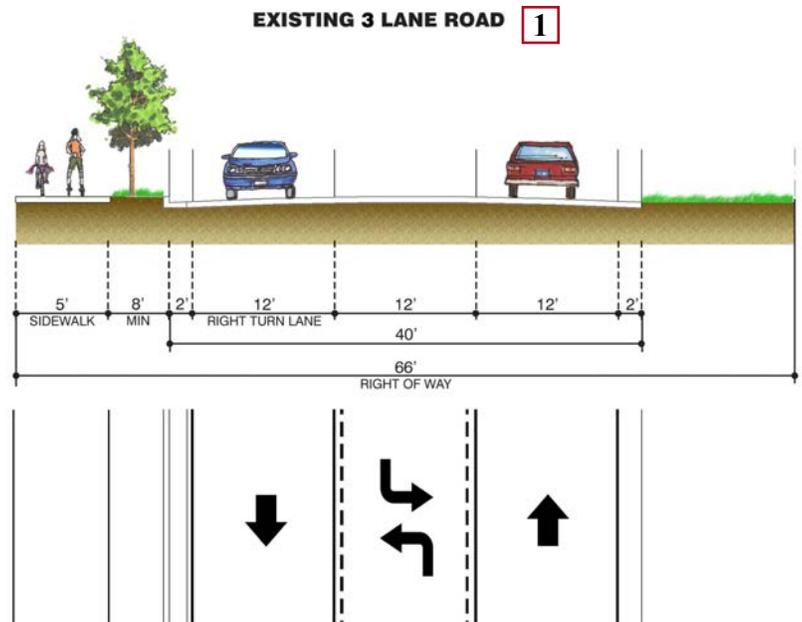


## SNOW ROAD - PHASE I:

- 1 Lane Restriping:**  
Restripe the existing roadway from Michigan Avenue to St. Joseph Highway. This section of roadway currently measures 40'.  
-Existing road cross section:  
2' shoulder, three-12' lanes, and a 2' shoulder  
-Proposed restriping:  
4' bike lane, two-11' lanes, one 10' center lane or  
5' bike lane, two-10' lanes, one 10' center lane

- 2 Mid-Block Crossing:**  
Install a mid-block crossing between Michigan Avenue and St. Joseph Highway.

- 3 Shared-Use Path:**  
8' wide shared-use path from the northwest corner of Snow Road and St. Joseph Highway intersection, proceeding south along the west side of Snow Road across from Southwick Circle, continue west, just south of the existing storm water retention pond and connect into the Snow Ridge neighborhood



## SNOW ROAD - PHASE II:

- 4 Shared-Use Path:**  
Shared-use path along the east edge of Snow Road. The path would begin at Michigan Avenue and extend to St. Joseph Highway.

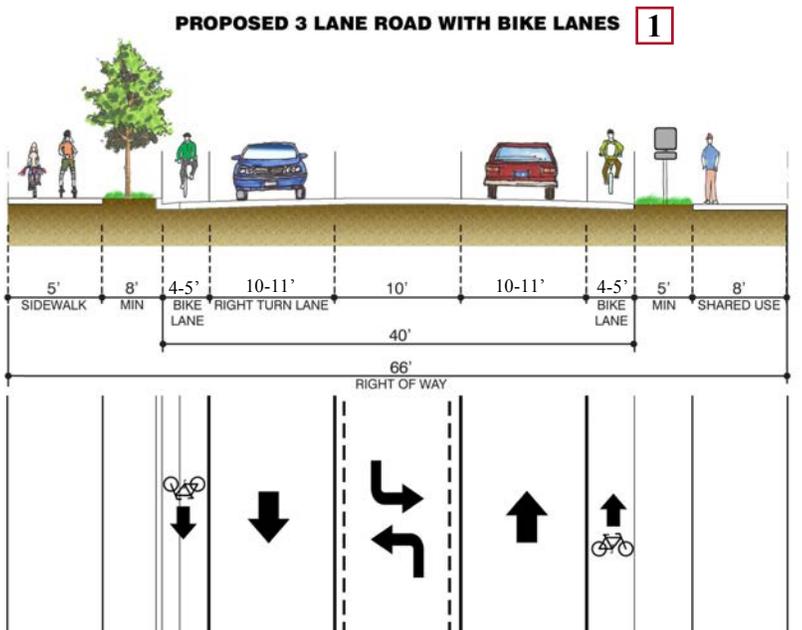
## ST. JOSEPH HIGHWAY:

- 5 Lane Conversion:**  
Four to three lane conversion from Waverly Road to Canal Road.

- 6 Mid-Block Crossing:**  
Install a mid-block crossing island between Farmstead and Snow Road with crosswalk warning signage and crosswalk striping. It is recommended that the mid-block crossing island should be installed only after the road is converted from four to three lanes.

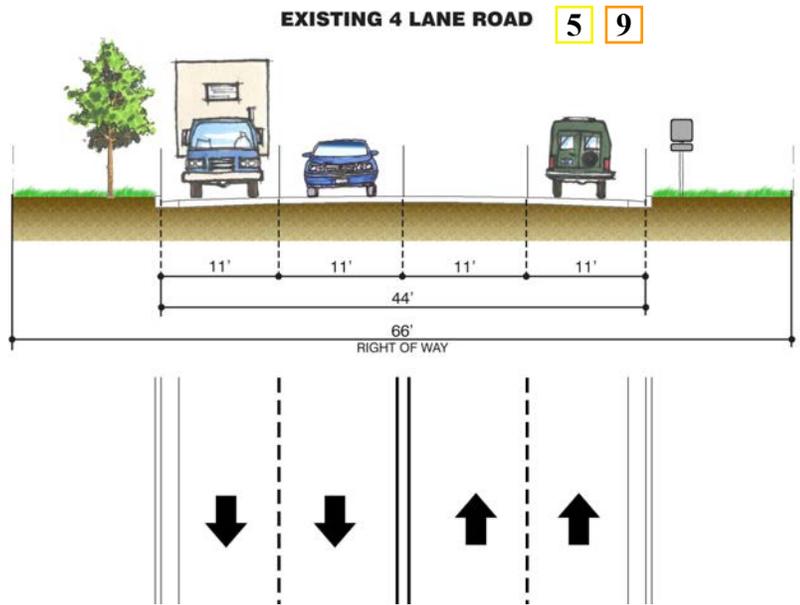
- 7 Sidewalk:**  
Add a 6' wide minimum sidewalk on the south side of St. Joseph highway from Snow Road to Meadowview Lane extending an existing sidewalk route allowing for a more continuous route. (Installed Fall 2004)

- 8 Lane Conversion:**  
Restripe the Snow Road and St. Joe Highway intersection to allow for a four to three lane conversion.



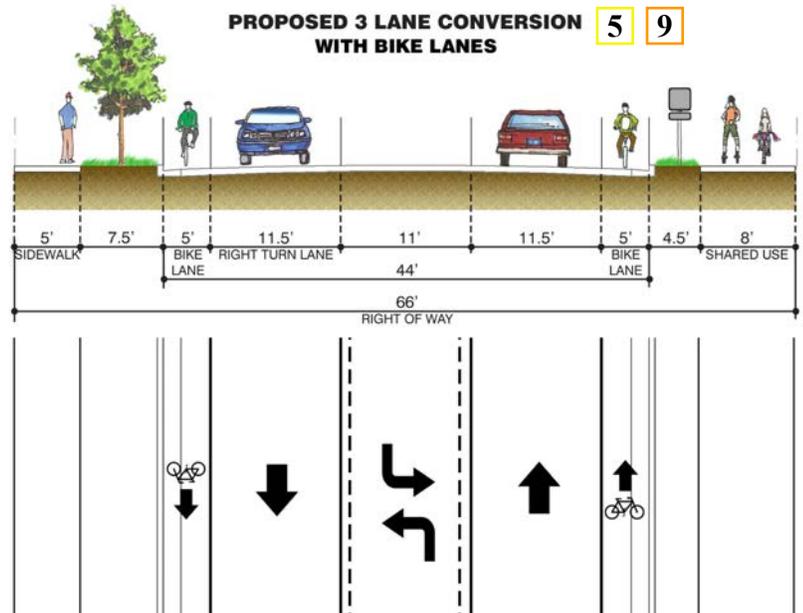
### MICHIGAN AVENUE - PHASE III:

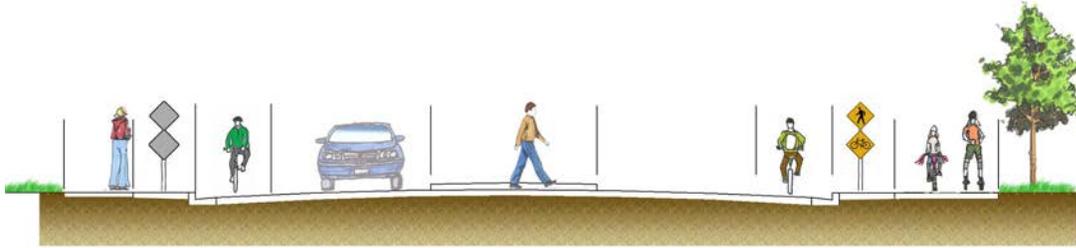
- 9 Lane Conversion:**  
Four to three lane conversion suggested from Waverly Road to Creyts Road.
- 10 Mid-Block Crossing:**  
There is an existing mid-block crossing east of the Michigan Avenue/Snow Road intersection across from Winans Elementary school. When Michigan Avenue is converted from four lanes to three, the crossing should be updated with proper signage, pavement markings, and a crossing island.
- 11 Lane Conversion:**  
Restripe the Snow Road and Michigan Avenue intersection to allow for a four to three lane conversion.



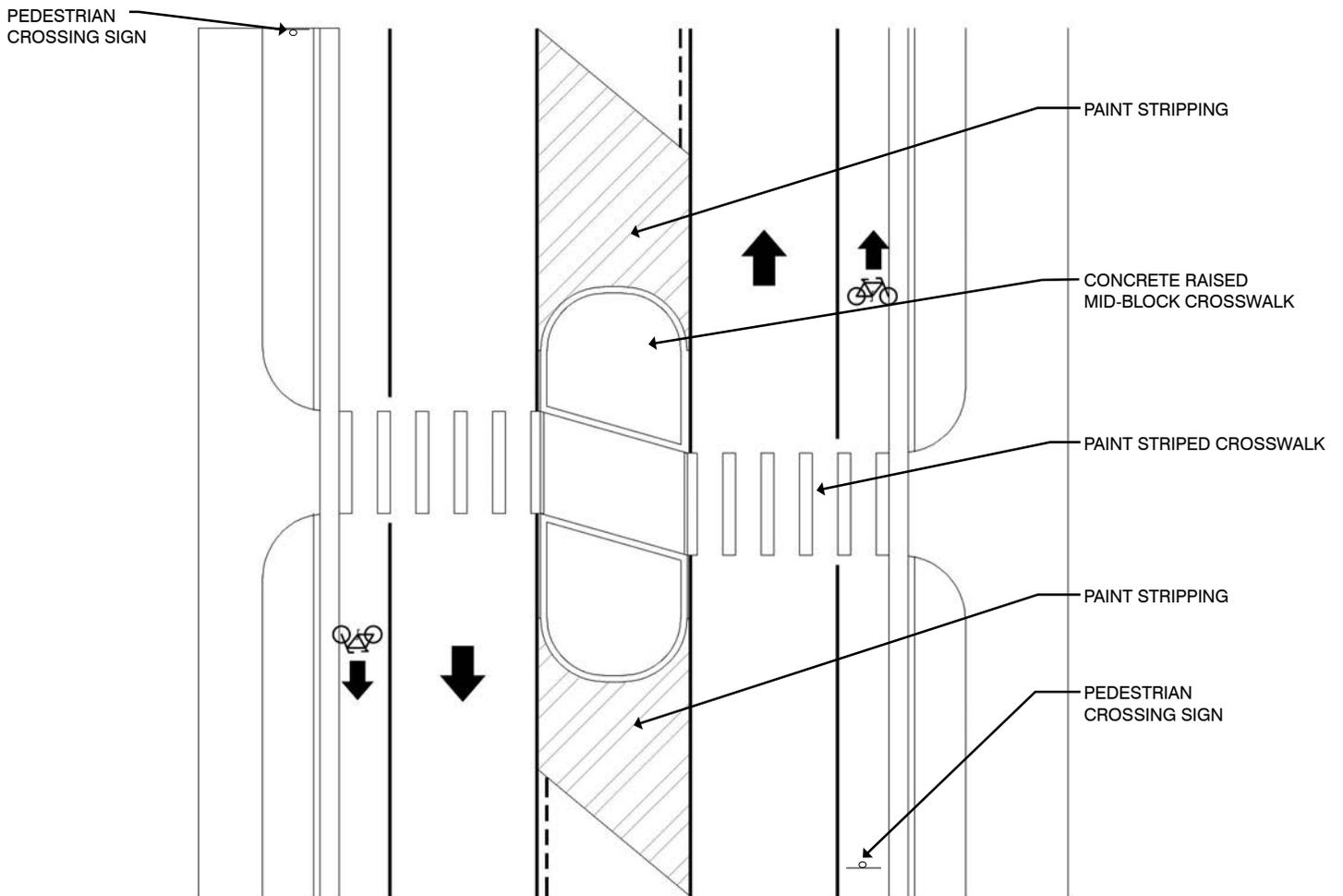
### WAVERLY SCHOOLS AREA:

- 12 Shared-Use Path:**  
Shared-use path along the west edge of the Waverly Community Schools Campus. Path would begin at the Michigan Avenue mid-block crossing by Winans Elementary and continue to the mid-block crossing at St. Joseph Highway by Waverly Middle School.
- 13 Shared-Use Path:**  
Shared-use path connecting the Waverly Community Schools Campus with the Dutch Hill Farms Neighborhood. This trail would connect at the proposed mid-block crossing on Snow Road.



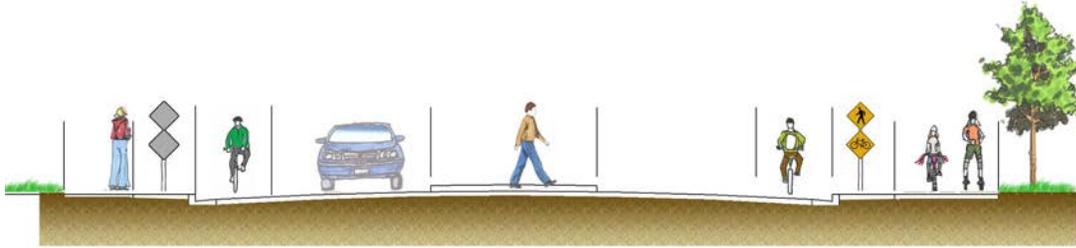


**TYPICAL MID-BLOCK CROSSING - SECTION**

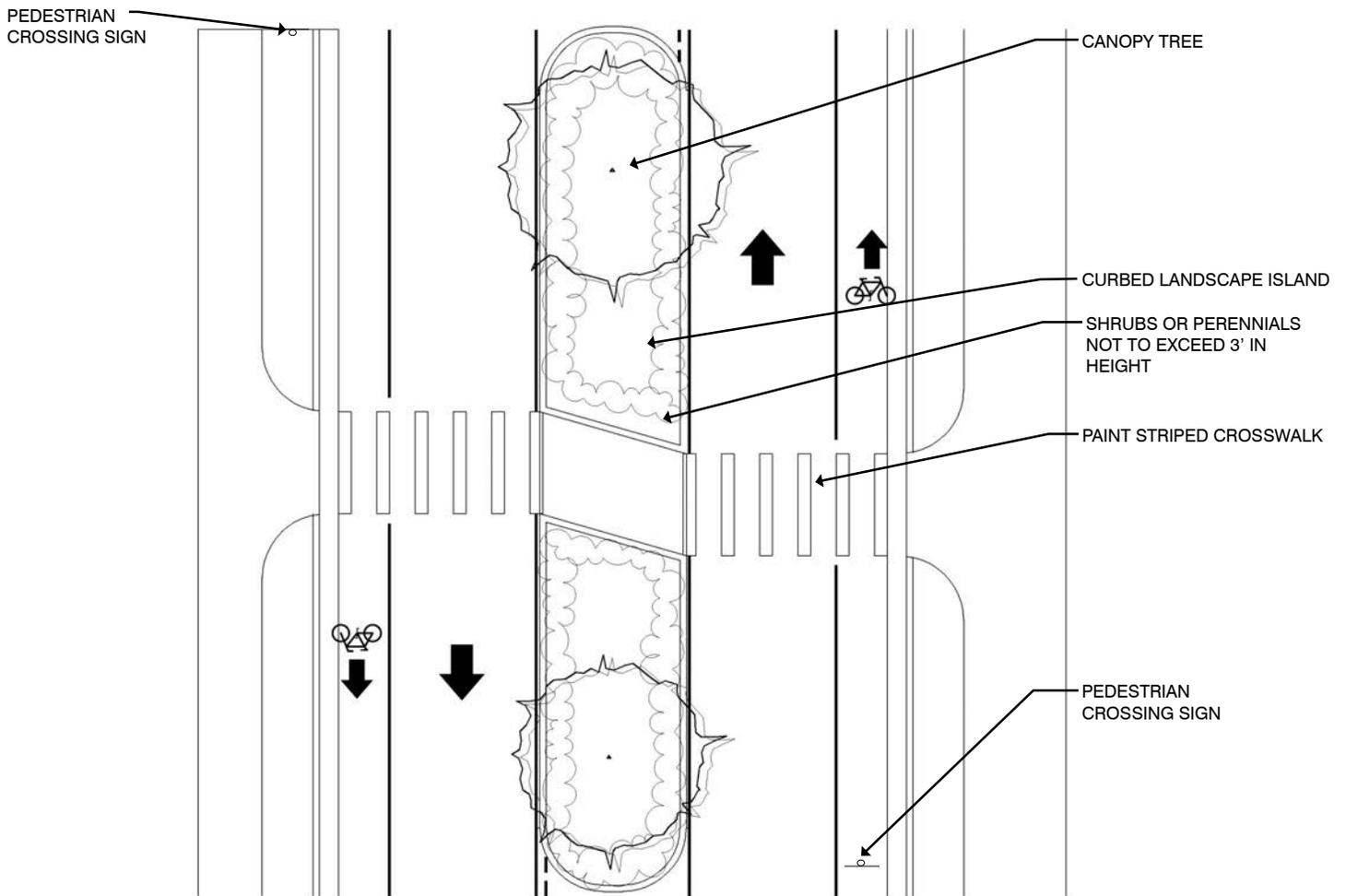


**TYPICAL MID-BLOCK CROSSING - PLAN VIEW**

2 6 10

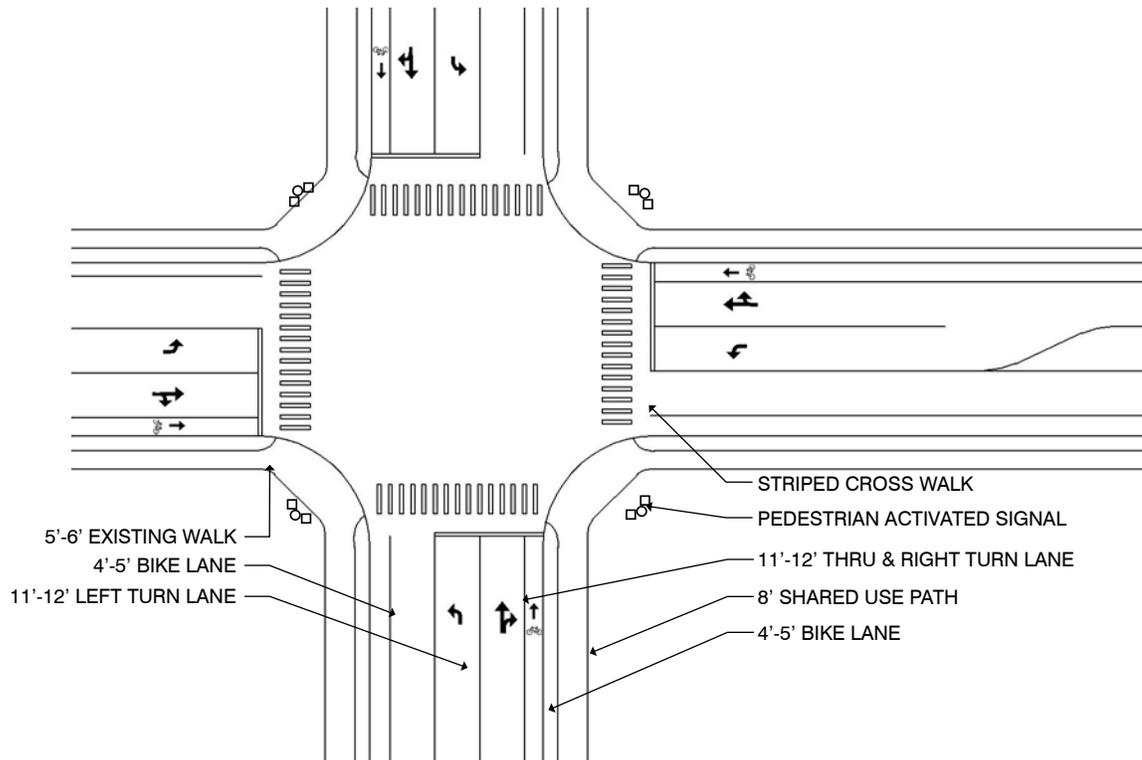


**TYPICAL MID-BLOCK CROSSING - SECTION**



**TYPICAL MID-BLOCK CROSSING - PLAN VIEW**

2 6 10



**PROPOSED INTERSECTION IMPROVEMENTS** 8 11  
**FOUR LANE TO THREE LANE CONVERSION**

**CONCLUSION...**

This study is designed to be used as a guide for The Waverly Community Schools and Delta Township to use in the implementation of the Non-motorized transportation. Both will have a guide to refer to when planning the installation of new sidewalks, trails, or roadway projects and for use in budgeting and pursuing grant opportunities. It is crucial to have the Eaton County Road Commission endorse portions of this Study for it to be effective since they are the municipal entity responsible for design implementation and maintenance of roadways.

The Non-Motorized Transportation Study is an essential component to begin the process of creating a network of non-motorized infrastructure for bicyclists and pedestrians. Providing an opportunity for physical activity and transportation is a key to developing a non-motorized network, which will provide a more pedestrian-friendly environment for the residents of Delta Township. The Priority Plan identifies specific areas that have been provided to help guide the implementation of the Non-Motorized Transportation Study.



# DELTA TRAILS

**NON-MOTORIZED TRANSPORTATION STUDY**



## PART THREE: SUPPLEMENTAL INFORMATION



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## **SUPPLEMENTAL INFORMATION**

The Supplemental Information should be used as additional reference material. Provided in the supplemental information is a more detailed explanation about the study process, how and why certain decisions were made based on the public input received. The supplemental information documents a detailed account of the information collected, reviewed, analyzed at each public input meeting and provides statistical data used to support the recommendations by providing the basis for the findings in the Study. There are also detailed statistics from national and local sources where non-motorized transportation has been successfully implemented indicating the need to further develop and provide non-motorized transportation for Delta Township. The following is provided in the supplemental information section:

- Summary of the process for the Study
- Public input meetings outline
- Aerial obliques areas - NW, SW, NE, SE
- Public input meetings - detailed account of each meeting
- Focus group meetings
- Future considerations
- Basis for preliminary recommendations
- Funding opportunities
- Opinion survey example
- National support statistics



## SUMMARY OF PROCESS FOR STUDY...

Below is an outlined summary of the public process used to develop the Study. The five main areas of emphasis used to prepare the Study are listed below:

### ANALYSIS

#### TASK 1 - ORIENTATION AND MANAGEMENT

Organize, review goals and create a Steering Committee

#### TASK 2 - INVENTORY AND ANALYSIS

Gather data, photos, create the GIS data base and analyze

### PUBLIC INPUT/ DEFINE ISSUES

#### TASK 3 - THE VISION INPUT MEETING

Public workshops, interviews, public opinions, public support

#### TASK 4 - VISION DEVELOPMENT

Designs and solutions, alternate routes, general costs, and public presentation

### ADDRESS ISSUES/ RECOMMENDATIONS

#### TASK 5 - THE VISION PRESENTATION

A draft report for the Township, phasing, specific design solutions, and Focus Group meetings of Grand River, Carrier Creek, and East-West Collector neighborhoods

#### TASK 6 - PUBLIC MEETINGS

Public meetings to review the Study, analysis and recommendations, and adoption and approval

#### TASK 7 - VISION PLAN AND FINAL WORK PRODUCTS

Submit reports, phasing, funding, and costs

## PUBLIC INPUT MEETINGS...

The public meetings for this planning process have engaged the public through the use of opinion surveys and map exercises. These tools have allowed for an interactive style of public involvement at all meetings. The data received at the public meetings was collected, analyzed and summarized after each meeting. The results of the data collected helped prioritize the routing. Listed below are the dates and locations of Public Input Meetings.

## PLANNING & PUBLIC INPUT PROCESS...

Numerous public meetings were held for this project in order to gather information on routing locations. The table below shows the type, date, location and purpose for each meeting.

	<b>TYPE OF MEETING</b>	<b>DATE</b>	<b>LOCATION</b>
1.	Public Input Meeting #1 - Middle school and high school students #2 - Public Input Meeting	September 30, 2003	Waverly Middle School

Purpose: Obtain input on non-motorized transportation routes through an input survey and map exercises. The group map exercises involve middle and high school students and public comments from Delta residents. Current health statistics were also presented.





- |     |   |                   |  |
|-----|---|-------------------|--|
| 10. | Address Specific Concerns/<br>Preliminary Recommendations<br>Carrier Creek, Grand River Corridor<br>Focus Area  | October 14, 2004  | Delta Charter Township<br>Municipal Building |
|     | Purpose: Address specific concerns in the Carrier Creek and Grand River Corridor. Present the preliminary recommendations for each area and receive public comments on the recommendations.   |                   |  |
| 11. | Address Specific Concerns/<br>Preliminary Recommendations<br>East/ West Collector<br>Focus area   | October 19, 2004  | Delta Charter Township<br>Municipal Building |
|     | Purpose: Address specific concerns in the East-West Collector and present the preliminary recommendations for their area. Receive public comments on the recommendations.   |                   |  |
| 12. | Dan Burden<br>Safety Meeting  | November 7, 2004  | Delta Charter Township<br>Municipal Building |
|     | Purpose: Dan Burden is a nationally recognized authority on street, roadway and intersection redesign for bicycles, pedestrians, traffic calming, health (more active living), and economic revitalization. He has presented numerous before and after photographs. The photographs show existing roads and intersections within the Township and how non-motorized changes could improve the safety of them. |                   |  |
| 13. | Steering Committee  | December 9, 2004  | Delta Charter Township<br>Municipal Building |
|     | Purpose: Present response to citizen comments and make recommendations for Carrier Creek, the Grand River Corridor, and the East-West Collector. Discuss the future action steps to implement the Study.  |                   |  |
| 14. | Steering Committee<br>Meeting   | December 21, 2004 | Delta Charter Township<br>Municipal Building |
|     | Purpose: Present response to citizen comments and make recommendations for Carrier Creek, the Grand River Corridor, and the East-West Collector. Discuss the future action steps to implement the Study.  |                   |  |
| 15. | Parks and Recreation Commission   | January 6, 2005   | Delta Charter Township<br>Municipal Building |
|     | Purpose: Review the final recommendations for the Study and discuss and provide a recommendation to the Township Board.   |                   |  |
| 16. | Planning Commission Meeting   | April 11, 2005    | Delta Charter Township<br>Municipal Building |
|     | Purpose: To hold a public hearing on the Study and discuss and prepare a final recommendation which will be forwarded to the Township Board.  |                   |  |
| 17. | Township Board<br>Meeting   | April 18, 2005    | Delta Charter Township<br>Municipal Building |
|     | Purpose: Review the final recommendations for the Study and review the final recommendations by the Planning Commission and adopt the recommendations outlined in the beginning of the Study.   |                   |  |

## NORTHWEST AREA



### MAIN CHARACTERISTICS

The Northwest area is the most rural section in the Delta Township with many subdivisions and farm fields throughout the northwest section. The majority of the area is zoned single family residential.

Saginaw Highway (M-43), runs east/west through the area with a commercial district tapering off west of Broadbent Road. The development along Saginaw Highway is sporadic between Broadbent Road and Nixon Road.

### AERIAL OBLIQUE DESCRIPTIONS

1. This picture shows the rural character of the northwest area. This view shows some residential neighborhoods near the Grand River. The view is looking southeast toward the Grand River and I-96.
2. The aerial oblique shows a view looking southwest at the Saginaw Highway / I-96 interchange. The commercial development extends to Broadbent Road.
3. This a view of the Grand River corridor is looking east from Nixon Road towards Interstate I-96 south of the Grand River.
4. This view looks northeast along the Grand River corridor toward Willow Highway and Nixon Road.
5. This aerial is taken at the I-96/Saginaw interchange. The area South of Saginaw Highway remains rural in character. South of Saginaw Highway East of Broadbent Road is commercial development.

## NORTHEAST AREA



### MAIN CHARACTERISTICS

The Northeast area is the most developed section in Delta Township. The main commercial corridor, Saginaw Highway (M-43), runs east/west through the area. Waverly High School, Waverly Middle School, Winans, and Colt Elementary Schools are also located in this area.

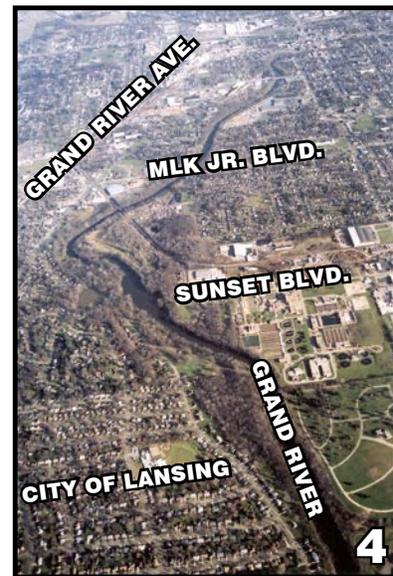
Many commercial destination points exist in this area such as the Lansing Mall, Meijer, and Target. The school sites are other main destination points. The Aerial Oblique descriptions indicate the general characteristics of each picture.

### AERIAL OBLIQUE DESCRIPTIONS

1. Looking northeast near I-496 and Creyts Road are multiple office buildings and industrial warehousing, which provide many employment opportunities.
2. Colt Elementary School between Michigan Avenue and Saginaw Highway is shown. Many residential neighborhoods surround the school, which is typical of the other school sites in the Northeast area.
3. Lansing Mall and Meijer are the number one destinations identified from the Public Input Meeting Survey. Saginaw Highway is the major east/west road cutting between the Lansing Mall and Meijer.



## NORTHEAST AREA - GRAND RIVER CORRIDOR



### MAIN CHARACTERISTICS

The Northeast area, Grand River Corridor, is predominately a natural, scenic corridor with residential lots adjacent to it. The residential lots tend to be long and narrow providing a large distance between the house and the river. The floodplain elevations require housing be set back from the river.

The Grand River Corridor was identified as an important east–west connection in the Northeast area. There are three major parks south of the Grand River Corridor, Hunters Orchard Park, Delta Mills Park and Grand Woods Park.

If the easements are obtained now, over time this important connection will tie into the Lansing River trail in the eastern part of the Township. A shared use path could link the three parks and continue west to connect Grand Ledge.

### AERIAL OBLIQUE DESCRIPTIONS

1. Grand Woods Park contains 128 acres and lies south of the Grand River just west of Waverly road. This picture is taken south of the Grand River looking east toward Waverly Road. This connection would allow a direct access to the Lansing River Trail on the east side of Waverly Road where the trail currently ends.
2. This picture is taken near the Creys Road and Willow Road intersections. This view is taken south of the Grand River looking north. This area shows residential parcels to the South and existing farmland to the North.
3. Hunter’s Orchard Park contains 26 acres and lies South of the Grand River. This picture shows the Grand River near Interstate 96 and Willow Highway.
4. This view shows the proposed Lansing River Trail connection to the east of Delta Township. The view is looking east near Waverly Road toward Lansing.



## SOUTHWEST AREA



### MAIN CHARACTERISTICS

The Southwest area is predominately characterized by a mixture of residential neighborhoods and agriculture. The Southwest area is the most rural area in the Township out of the four areas analyzed. This part of the Township has large parcels that are undeveloped with the majority of them are currently being farmed.

### AERIAL OBLIQUE DESCRIPTIONS

1. Aerial Oblique Number One shows an industrial park area. The picture is taken from I-96/I-69 and Millet Highway looking east toward Canal Road.
2. This view shows the rural characteristics of this part of the Township. The proposed General Motors Plant is planned for this area so the character will change to industrial. The view is looking east toward the I-69/I-96 interchange near Millet Highway.
3. This picture also shows the area where the future General Motors Plant will be constructed. The view is looking east from the south of the I-96 and I-69 Interchange.
4. The aerial view shows a typical residential neighborhood south of Saginaw Highway. This is a bird's eye view showing St. Joseph Highway and Nixon Road.



## SOUTHWEST AREA

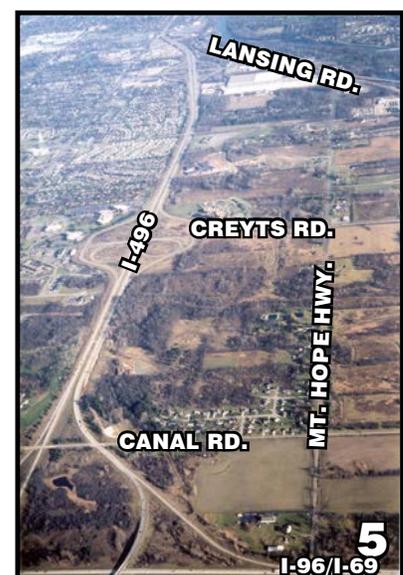


### AERIAL OBLIQUE DESCRIPTIONS

5. This aerial view is looking at the intersection of Mount Hope Highway and Broadbent Road. The rural characteristic is shown with the large open parcels of undeveloped land.
6. Looking east from the corner of Nixon Road and Mount Hope Highway, this area is rural on both sides of Mount Hope Highway.
7. Just north of the I-96/I-69 interchange where the I-496 interchange breaks off to downtown Lansing, you can see residential neighborhoods clustered around Broadbent Road.



## SOUTHEAST AREA



### MAIN CHARACTERISTICS

The Southeast area contains a mixture of residential, agriculture, office buildings, and industrial warehouse complexes. I-96 and I-496 are barriers to pedestrian access from north to south or east to west in Delta Township.

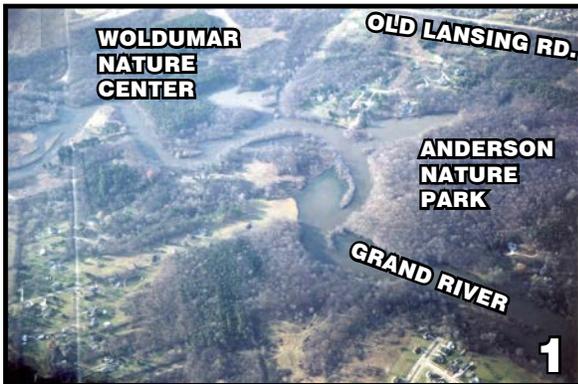
Special provisions may be required to change existing road bridges to accommodate pedestrian traffic across the interstates. If the road bridges are not wide enough, separate pedestrian crossings over the interstate will be required for the main non-motorized routes.

### AERIAL OBLIQUE DESCRIPTIONS

1. The industrial complex shown in this picture is located near the corner of Lansing Road and Mount Hope Highway. This picture is looking east toward Lansing Road.
2. This view is of the industrial complexes located north of I-96/I-69, looking east toward Creyts Road.
3. Looking northwest on the east side of I-96 toward Lansing Road is the Summit Complex which is a privately-owned commercial complex. Lake Delta, owned by the Board of Water & Light, is in view to the north of Lansing Road.
4. The aerial oblique is looking south near I-496 and Creyts Road. The Blue Cross & Blue Shield Office complex is shown in the lower left of the picture. Industrial warehouse buildings dominate the landscape southeast of Mount Hope Highway and the Creyts Road intersection.
5. Along the I-496 corridor near Creyts Road the predominant uses of land are residential and agricultural. This view is looking East toward Creyts Road.



## SOUTHEAST AREA - GRAND RIVER CORRIDOR



### MAIN CHARACTERISTICS

The Southeast area, Grand River Corridor, is a natural scenic river corridor in Delta Township. The Grand River corridor contains two natural areas, which would be ideal destinations for a shared-use path. The Woldumar Nature Center and Anderson Nature Park are located south of Lansing Road just north of the Grand River.

Old Lansing Road parallels the Grand River in this location. Old Lansing Road has a 100' wide road right-of-way allowing for a shared-use path on the south side of the road. There are some grade challenges that would need to be overcome near Waverly Road for a shared-use path.

### AERIAL OBLIQUE DESCRIPTIONS

1. This aerial oblique shows a view of the Woldumar Nature Center and Anderson Nature Park. The view is taken south of the Grand River looking north toward Lansing Road.
2. Anderson Nature Park is located just south of Old Lansing Road. This view shows an enlargement of Anderson Nature Park. The view is looking north.
3. This aerial oblique shows Grand River near Waverly Road. The view is taken south of Grand River looking north toward Old Lansing Road.



## PUBLIC INPUT MEETINGS... SEPTEMBER 30, 2003

This meeting was held to obtain input from the public. One meeting was held with middle school students and high school students. The second meeting was held to obtain input from the residents of Delta Township.

### LOCATION

Waverly Middle School, 620 Snow Road, Lansing, MI 48917

### ATTENDANCE

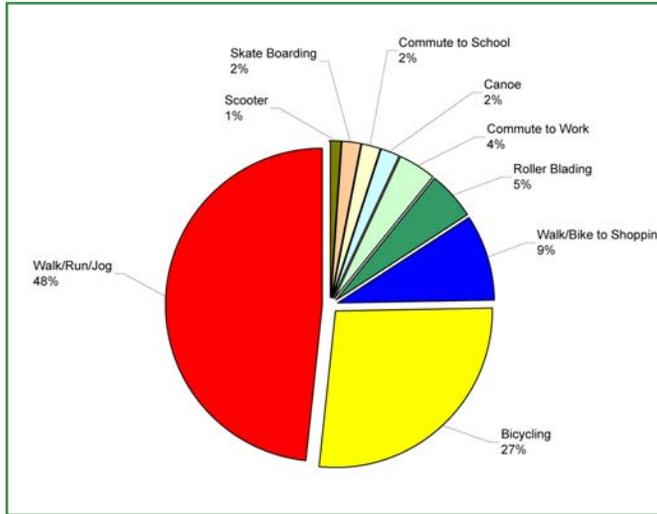


figure 1.0

Approximately 90 middle school and high school students attended the meeting from 1-3 pm. The second public meeting was attended by approximately 100 residents of Delta Township.

### INPUT SURVEY

A Delta Township Activity Survey was handed out at the September 30 Public Input Meeting. The survey asked specific questions about how the residents of Delta Township were using the existing system. A survey was available at the meeting and was filled out and returned. The survey was also available on-line and was randomly mailed out to 400 residences.

### RESULTS OF SURVEY

The Township received 182 responses between August and October, 2003.

The results of the Delta Township Activity Survey were compiled in November, 2003. Each activity was broken into a percentage as shown in the pie chart. (see figure 1.0)

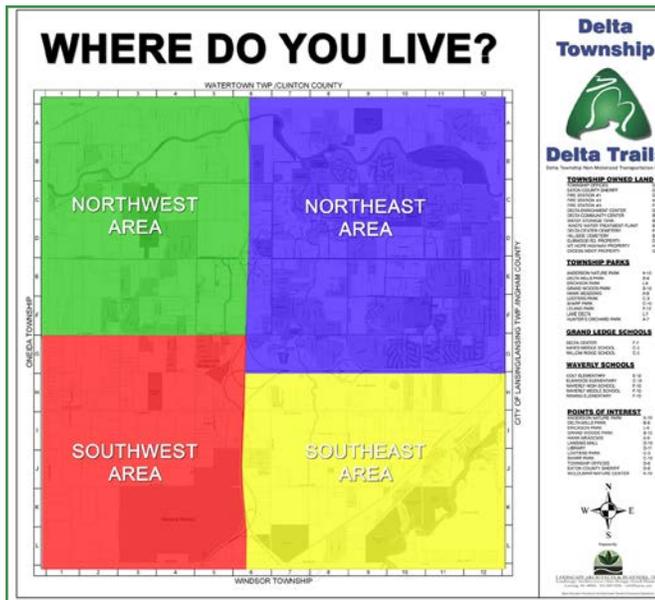


figure 1.1

### TWO PUBLIC MEETINGS WERE HELD

1. Middle & High school - a meeting was held with Waverly Middle School and Waverly High School students. They completed the same map exercise that was used at the Public Input Meeting. There were approximately 90 students in attendance.

2. Public Input Meeting - a public meeting was held at the same location and was open to the general public with 100 attendees.

### MAP SURVEY INPUT-PUBLIC MEETING

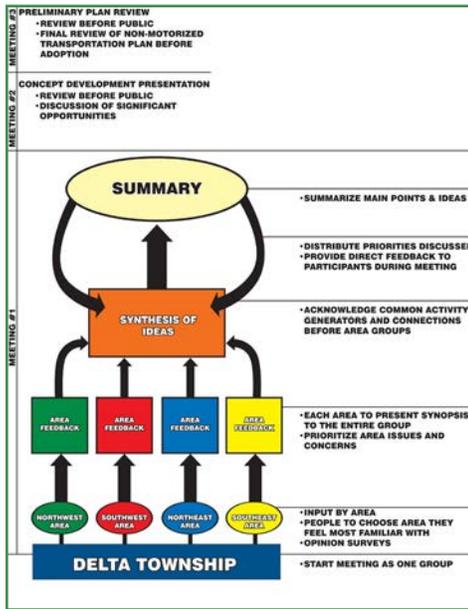
Attendees at the meeting were asked to break into groups based on where they live.

The Township was divided into four quadrants; the Northeast, Northwest, Southeast and Southwest areas. A Township map (11" x 17" size) was handed out to each person. (see figure 1.1)

Each person was asked to participate in a map exercise designed to obtain input. They were asked:

- To place a green dot on the map where they live.
- To place a red dot on the map of where they wanted go in the township using a non-motorized transportation mode.
- To highlight with a marker the route(s) to get from where they lived to where they wanted to go.
- To place a yellow dot on their map identifying an obstacle or challenge area.
- Describe in the note column their route or obstacles or challenges in getting from one point to another.

figure 1.2



The Township received 147 responses:

- Public Map Exercise - 57 Responses
- School Map Exercise - 90 Responses\*

\*Waverly High School & Middle School Participants

Figure 1.2 describes the process that was used in the Public Input Meeting. An introduction was given to the group where instructions were given about how the meeting was going to progress. The Township was divided into four quadrants, Northeast, Northwest, Southwest and Southeast. Each person was asked to find the area they were the most familiar with, either where they lived or worked. Each person completed a map exercise indicating non-motorized routes they wanted to use. Next, each area presented a synopsis of the priority routes and concerns. The routes from the four quadrants were then summarized on one map.

The data from the map exercises was summarized and presented at the November 12, 2003 Public Input Meeting. The top five responses from the students and the general public were compiled separately for the map exercise.

### DESTINATIONS FROM MAP INPUT

#### (WHERE PEOPLE WANT TO GO)

The top five responses were:

#### PUBLIC INPUT

1. Lansing Mall (27%)
2. Hunter's Orchard Park (21%)
3. Delta Mills Park (21%)
4. Grand Woods Park (17%)
5. Sharp Park (14%)

#### STUDENT INPUT

1. Waverly Schools (40%)
2. Lansing Mall (31%)
3. Meijer (18%)
4. Sharp Park (7%)
5. Library (4%)

## CHALLENGE AREAS FROM MAP INPUT

The top five responses were:

### PUBLIC INPUT

1. Willow Highway	(31%)
2. St. Joe Highway	(24%)
3. Creyts Road	(17%)
4. Canal Road	(17%)
5. Saginaw Highway & Elmwood	(15%)

### STUDENT INPUT

1. Saginaw Highway & Elmwood	(27%)
2. St. Joseph Highway	(20%)
3. Saginaw Highway	(20%)
4. St. Joseph Highway & Snow Road	(15%)
5. Michigan Avenue	(14%)

## SIDEWALKS - ADDITIONAL REQUEST

The top five responses from public surveys were:

1. Willow Highway (31%)
2. St. Joe Highway (25%)
3. Creyts Road (24%)
4. Canal Road (12%)
5. Saginaw Highway (8%)

## THE VISION INPUT MEETING..

### NOVEMBER 12, 2003

The purpose of the Vision Input Meeting was to present the Vision to the public. This was the first time routing had been shown to the public and public comment was taken on the Vision.

### PRIOR TO THE MEETING

The Consultants met with the Township officials and staff to obtain input from the Drain Commission, Eaton County Sheriff's Department and the Steering Committee. Traffic data was obtained from the Eaton County Road Commission. The Traffic Engineer working on the Study completed individual traffic studies at key intersections. The Consultant drove the entire roadway system. The Consultant walked some of the route and observed exiting vehicles and non-motorized patterns. The data from the September, 2003 Public Input Meetings were summarized.

### LOCATION

Delta Township Hall, 7710 W. Saginaw Highway, Lansing, MI 48917

### ATTENDANCE

The meeting was attended by approximately 40 residents of Delta Township.

### PURPOSE

- Share results of input data from September 30, 2003 public meetings
- Summarize results of the Delta Township Activity Survey
- Review the Vision with the public
- Obtain additional public comments on routing



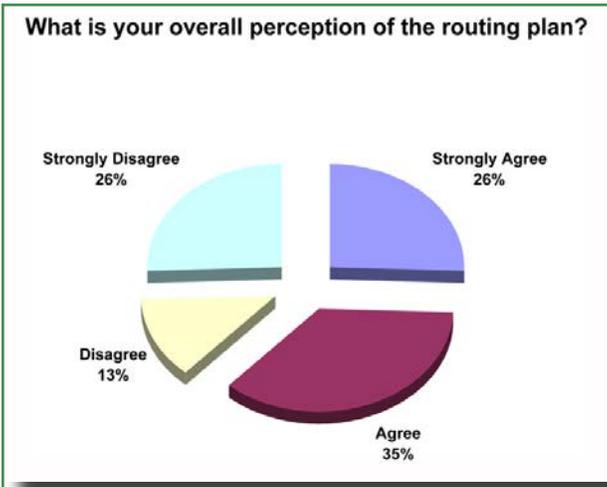


figure 1.3

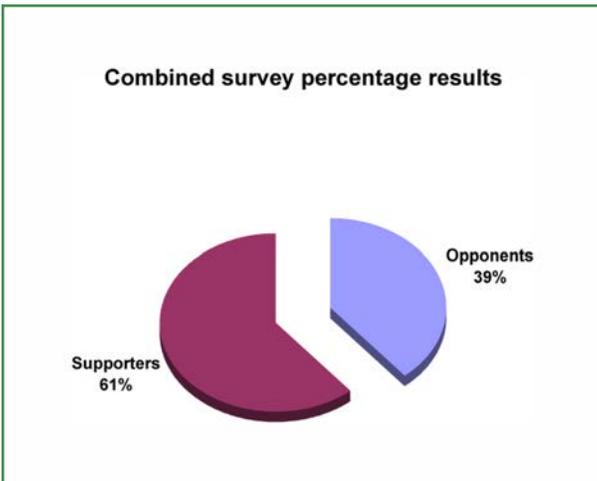


figure 1.4

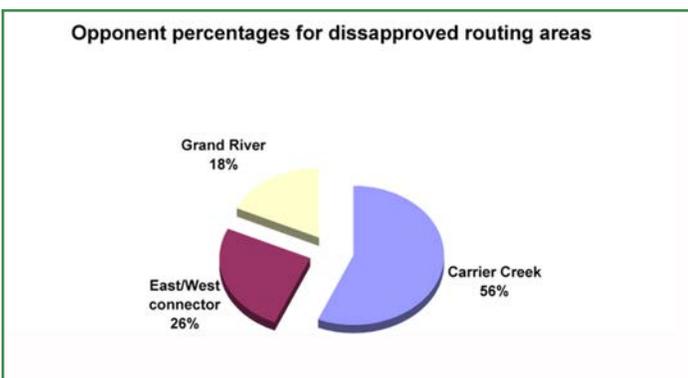


figure 1.5

## PRESENTATION

A PowerPoint presentation was prepared by the Consultant summarizing the data obtained in the Activity Survey and the Map Survey Input exercise from the September 30, 2003 Public Input Meetings.

The Vision was presented showing preliminary routing for the entire Township. The Township map was broken up into four areas: the Northeast, Northwest, Southeast, and Southwest. Some intersection plans and typical road cross sections were reviewed. The typical sections showed how the existing roads could be modified to accommodate bike lanes, shared use paths, and sidewalks.

## GROUP PARTICIPATION

The participants were asked to break up into groups and comment on the validity of the Vision. An 11"x17" map was handed to each participant. Each person had an opportunity to draw and note on the map any bike lanes or shared-use paths that were not shown on the Vision. They were asked to highlight and comment on the routes that they did or did not agree with and then tell why they did or did not agree with each route. Each person was asked whether they supported the overall Vision. The results are shown in figure 1.3 and combined in figure 1.4.

## PUBLIC INPUT

An opportunity for general public input was provided and the attendants voiced their opinion on the proposed bike lanes, shared use paths, and sidewalks from the Vision. In figure 1.5 the specific areas that express concern with the Vision were identified.

## EATON COUNTY ROAD COMMISSION...

### DECEMBER 23, 2003

The purpose of the meeting was to share the Vision with the Road Commission. There was a specific concentration placed on the four to three lane conversions.

### LOCATION

1112 Reynolds Road, Charlotte, MI

### ATTENDANCE

Road Commission Board.

**PRESENTATION**

A PowerPoint presentation was shown about the health, safety, and economic benefits of non-motorized transportation. Examples of case studies from other cities showing lane conversions were presented. Statistics show that road crashes were reduced significantly with the conversions.

Bill Savage, Transportation Engineer, shared intersection data analysis showing the impact lane conversions could have on the intersection capacity of the roadways that may be changed. See figure 1.6 for Snow Road at St. Joseph Highway and Snow Road at Michigan Avenue.

The roads being recommended for lane conversions in the first phase are:

- Michigan Avenue from Waverly Road to Creyts Road
- St. Joseph Highway from Waverly Road to Creyts Road
- Snow Road from Ivan Drive to Mt. Hope Highway
- Elmwood Road from Willow Highway south

The Eaton County Road Commission did not take action on the Study at this stage of the project. This meeting was more informational at this time to review the progress of the study.

	<u>EXISTING</u> 5 - Lanes Peak Hour Traffic			<u>PROPOSED</u> 3 - Lanes Peak Hour Traffic			<u>PROPOSED</u> 3 - Lanes Peak 15 Minutes		
	AM	Noon	PM	AM	Noon	PM	AM	Noon	PM
	Snow @ St. Joseph	71%	70%	74%	77%	74%	80%	94%	76%
Snow @ Michigan	67%	65%	69%	74%	80%	90%	92%	83%	98%

Figure 1.6

**PROPOSED TRAFFIC CALMING TECHNIQUES**

**Lane Conversions (Four to three)**

- Criteria for lane conversions:
  - It is recommended that lane conversions be considered on roads with less than 18,000 average daily trips (ADT)
- Benefits of four to three lane conversions:
  - Pedestrian/bicyclist:
    - Pedestrian has fewer vehicle lanes to cross
    - Bicyclist has a dedicated bike lane (It is safer for bicycles to be in the road.)
    - Slows vehicles down an average of five mph

**Vehicles:**

- Reduces vehicle weaving and side-swipe crashes
- Separates left turns and thru movements and can reduce rear end crashes
- Can change function of roadway to “access” oriented
- Eliminates vehicle passing and can lower speeds
- Cost is minimal because re-striping costs are substantially lower than road reconstruction
- Emergency vehicles use the left turn lane to travel

## INTERSECTION CAPACITY

These locations were presented as possible pilot projects for lane conversions. Additional lane conversions were discussed for future phases..

### Phase I

<u>Road</u>		<u>ADT (1)</u>	<u>Year</u>	<u>ADT (2)</u>	<u>Year</u>
•Snow Road	N. of Michigan to Saginaw Highway	16,649	1996	17,281	1996
	S. of Michigan to St. Joseph Highway	14,445	1996	14,445	No date given
•Michigan Ave.	W. of Snow Rd. to Mall Drive South	7,470	2002	11,068	1992
	E. of Snow Rd. to Waverly Road	13,781	1995	15,801	1992
•St. Joe Highway	W. of Snow Rd. to Creyts Road	9,584	1993	7,966	2004 (e.bound only)
	E. of Snow Rd. to Waverly Road	15,909	1998	13,688	1993

### Future Phases

<u>Road</u>	<u>Range</u>	<u>Year</u>
•Willow Hwy. from Broadbent Road to Creyts Road	2,006-8,247 ADT	2000
•Canal Rd. from Millet Highway to Saginaw Highway	5,541-8,584 ADT	2001
•Elmwood Rd. from Saginaw to Willow Highway	3,696-6,234 ADT	1996

(1) Average Daily Trips (ADT) taken from Eaton County Road Commission Map printed January 30, 2003.

(2) ADT provided by Delta Township traffic counts

## CASE STUDIES: LANE CONVERSIONS IN THE CITY OF EAST LANSING, MICHIGAN

### Burcham Drive (Converted in 1996)

- 41-44 feet wide
- Average daily traffic volume approximately 8,400 vehicles

### West Grand River Avenue (Converted in 1997)

- 46 feet wide
- Average daily traffic volume approximately 18,000 vehicles

### Abbott Road (Converted in 1999)

- 40-45 feet wide
- Average daily traffic volume approximately 16,100 vehicles

## THE EFFECTS OF THE CHANGES

### Preliminary Study Results:

- Traffic crashes on Abbott Road reduced by approximately 37% (I.E. 40 before to approximately 25 after)
- In general, on Abbott Road the average speed was lowered an average of 5-10 mph. Traffic accidents on West Grand River were reduced by approximately 22% (1995 & 1996 totalled 118 accidents vs. 1999 & 2000 total of 92)
- Traffic crashes on Burcham Drive reduced by approximately 5% (1994 & 1995 totalled 41 crashes vs. 1999 & 2000 total of 39)



## **MID-BLOCK CROSSINGS**

### **Key Issues:**

- Effective at school sites (crossing guards preferred)
- Provide a marked crosswalk
- Provide a flashing signal/sign
- Install pedestrian crossing signage
- Recommend a safe haven/island in the middle of the road

## **STEERING COMMITTEE MEETING...**

### **JANUARY 15, 2004**

The purpose of the meeting was to update the Steering Committee on the progress of the Public Input Meeting and the general response of the public.

### **LOCATION**

Delta Township Hall, 7710 W. Saginaw Highway, Lansing, MI 48917

### **ATTENDANCE**

The meeting was attended by the Steering Committee members and Delta Township staff.

## **THE VISION PRESENTATION**

### **JANUARY 29, 2004**

This meeting was held to update the residents of Delta Township of the progress and present the Vision and Priority Plan.

### **LOCATION**

Delta Township Hall, 7710 W. Saginaw Highway, Lansing, MI 48917

### **ATTENDANCE**

The meeting was attended by approximately 85 residents of Delta Township.

### **PRESENTATION**

Robert Ford from Landscape Architects & Planners, Inc., (LAP), the planning consultant, opened up the meeting. Joe Drolett, Township Supervisor, spoke and indicated that the Vision and Priority Plan that LAP will be presenting were lines on a paper at this point. Some of the lines shown will change. In the areas where residents have concerns, such as Carrier Creek, the East-West Collector and the Grand River, the Township will use a separate public process with the residents of these areas to discuss their specific concerns before final recommendations are made.

Amy McEwan, Assistant Township Manager, indicated that the Township Board had decided at the January 20, 2004 meeting to extend the planning and public input process. Additional public input meetings will take place to discuss further areas where there are concerns. The consultants will continue on their original pace to provide recommendations around the school areas. It is expected that the Township Board may review the school area recommendations in May of 2004. She indicated that after the additional meetings were completed and concerns were addressed, it might cause the final Study to be delayed as much as a year. The three focus group areas are the Grand River, Carrier Creek, and the East-West Collector.



## **PURPOSE OF MEETING**

- Update public on the status of the Study
- Review public input received to date from the previous public input meetings

## **PRESENTATION**

A PowerPoint Presentation followed with national, state, and local statistics on overall benefits of trails in three main categories:

- Health issues
- Safety issues
- Economic benefits of trails and greenways

The Vision and Priority Plan were presented showing the proposed road lane conversions; bike lanes, shared-use path, mid-block crossings, and potential overpass locations. The Presentation, the Vision, and Priority Plan were posted on the Delta Township website which is as follows: [www.township.delta.mi.us](http://www.township.delta.mi.us)

## **PUBLIC COMMENTS**

After the presentation was completed, residents were asked if they wanted to comment on the Study. Participants filled out a 3"x5" note card and put their name and address on it.

Names were announced from the 3"x5" cards and 34 people commented on the Study.

This list of comments from the public meeting is summarized below. Not all comments are stated specifically.

- We have to take our bikes, load them on our bike rack and drive to somewhere else to ride them. We need places to ride. Willow Highway needs sidewalks.
- Issues of privacy were of concern to residents adjacent to proposed trails.
- Some residents were concerned that the trail would reduce their property values.
- Residents off Lansing Road indicated that they did not want to see the natural island in the Grand River destroyed because of the trail.
- Forward looking Vision; we need safer pedestrian areas and the Road Commission should endorse the 4-3 lane conversions.
- Some residents were opposed to the Carrier Creek routing shown on the Vision. Concern over potential privacy and trash issues were expressed.
- Support the overall Vision. We need to have a pedestrian/bicycle document that the Road Commission can use as a reference when considering road improvements.
- Trail supporter; improving safety for children is good.
- Health, safety is good, favors the paths.
- Supports walkable communities; suggests Willow Highway be moved to Phase 1 improvements.
- Midland has a trail system; and now when they list things residents like most about their community, the trail ranks first over parks and other community services.
- Adults need to be an example to kids by being active.
- Need time for people to become comfortable with the Vision. Trails are good for edge habitat.
- Webster Street Bridge needs a way for pedestrians to cross. Its too narrow now.
- Sidewalks should be added on Creyts Road.
- Privacy, maintenance, and safety issues are a concern. Working with Carrier Creek, the East-West Collector and Grand River Neighborhoods is a good idea.



- Sometime residents of a community have to make a sacrifice for the community. I would like to see a trail on the Carrier Creek.
- Waverly Road and Lansing Road intersection is dangerous for cars and pedestrians.
- Lansing Road needs paths. It is dangerous because people are walking in the road.
- Developers should be part of the planning process and be required to submit more pedestrian friendly neighborhoods.



\* Following the Vision presentation, the Township Board requested that the consultant, Landscape Architects & Planners, Inc. (LAP), host a set of citizen input meetings designed to focus on the “off road” routes. The three areas to focus on were Carrier Creek, the Grand River Corridor, and the East/West Collector. The overall Study was delayed to allow time for these specific areas to have more public dialog and to afford the consultants time to collect and present more data on existing trails in other areas. The process resumed again in September, 2004 to obtain additional public input from these three groups.

## **GRAND RIVER / CARRIER CREEK FOCUS AREA PUBLIC INPUT MEETING...**

### **SEPTEMBER 16, 2004**

The purpose of this meeting was to meet with the Carrier Creek Neighborhoods and Grand River Corridor Residents that raised concern in previous Public Input Meetings about trail routing in their specific area.

### **LOCATION**

Delta Township Hall, 7710 W. Saginaw Highway, Lansing, MI 48917

### **ATTENDANCE**

The meeting was attended by 71 residents.

### **PRESENTATION**

It had been eight months since the last Public Input Meeting. The goals of the study, status, and progress were reviewed with the Delta Township residents. A PowerPoint presentation was shown and included:

- Goals for the study
- A review of the meeting schedule to obtain additional public comment for the three focus areas of Carrier Creek, the Grand River area, and the East-West Collector
- Locally implemented trails in the City of Portland, Lansing, and the City of East Lansing as successful examples of trail systems. Three different Carrier Creek sections were shown at various points along the Carrier Creek representing the lay of the land showing topographic relief, property lines, the existing drainage easement, and existing trees. Existing pictures of the Carrier Creek area were shown and areas were highlighted where the Eaton County Drain Commission was conducting maintenance along the Carrier Creek Corridor.
- An input survey on green paper was distributed to the Carrier Creek neighborhoods and on blue paper to the Grand River residents. They were asked to fill out the survey at the meeting or return it to Delta Township by September 24, 2004. The results of these surveys were skewed because they represent a limited amount of information from a focus group and do not represent the overall sentiment of the Township wide approval of the vision.
- The public was allowed to comment on the Study and express concerns about their specific area. General comments were recorded.



## **SUMMARY OF COMMENTS RECEIVED AT PUBLIC INPUT MEETINGS...**

### **GRAND RIVER CORRIDOR – PUBLIC COMMENTS FROM SEPTEMBER 16, 2004 MEETING**

- Neighborhood does not want trail on Grand River and does not want to tie into other Lansing community trails. The neighborhood walks in the streets and on the sidewalks and does not want people outside the neighborhood using the proposed trail.
- Waterfront property comes at a premium price, and we paid extra for the views and nature and want that protected by our government officials.
- Do not want privacy or security compromised and in return will have to pay more taxes.
- No trails are needed through Woldumar and Anderson Nature Centers due to existing trails to the river. The proposed bike trail on Old Lansing Road has already made adequate access for walking, running, and nature enjoyment.
- How can you build in the floodplain when the actual property owners cannot build in the floodplain?
- Concerned about people walking around in private property backyards and the potential for trash littered along the trail.
- What is the purpose of building a bridge over Grand River? A bridge is too long and too expensive. A clear need for the proposed trail has not been demonstrated.
- The Grand River is a rare resource. The River Cove subdivision already has trails and doesn't need anymore.

### **CARRIER CREEK NEIGHBORHOODS – PUBLIC COMMENTS FROM SEPTEMBER 16, 2004 MEETING**

- The proposed trail would provide a vital north/south route away from traffic, eliminating unsafe or unpleasant feelings along the roads.
- Carrier Creek needs a bike lane throughout the area.
- Carrier Creek's ecology and drainage should be maintained but also include boardwalks.
- We would like to see a trail system implemented including Carrier Creek and Grand River.
- The neighborhood streets are adequate for walking and jogging.
- One-hundred-year floodplain would put the trail on private property as well as disturb the salmon spawning in the creek.
- The proposed Carrier Creek trail would ruin the natural aesthetics of the area and could affect wildlife habitats.
- I would not use the trail because of security issues.
- Put sidewalks along the streets in the Township to give people a place to walk and ride bicycles.
- We already have sidewalks along streets and in our subdivision, which are not private walks and already accessible.
- I am concerned about trash and security issues as well as how the trail could be maintained.
- Would like to see an environmental impact statement. The floodplain is an issue. What is the potential for flash floods and the associated safety factor?
- Don't need anymore paved areas. Are there other options to the trail being paved?
- Brookside Condo had 300 residents who signed a petition against the proposed trail because we don't want our community retrofitted.
- Worried about dogs creating noise (barking) on the trail, and do not want to see any lights along the proposed trail.
- Not enough people were surveyed, and who are the people that were surveyed?
- Our house is close to the proposed trail. The proposed trail section is narrow and does not illustrate our situation.
- Proposed Delta Trail is not like the Lansing River Trail, Portland's trail, or East Lansing's trail.



- What are the impacts on the floodplain? The Drain Commissioner has already cleared too much and cut down trees 80 to 100 years old. The Drain Commissioner promised to return the area to normal.
- How do you propose to build a bike path on this road? We own the land so you can't build a trail.
- The planning process thus far has done a good job of informing citizens.
- Can't run or jog past the wastewater treatment plant.
- Is it possible to put the 50-year time frame in writing? How long is this process?
- Riparian rights of the citizens cannot be violated and need to be addressed.
- Would the township use eminent domain for the process of the Vision?
- The proposed trail along the creek is a good idea, but not on the creek. The proposed trail would allow neighbors to get to know each other.
- I live in the middle of the condos and would like to be able to go on a nature walk.
- I like the idea of a long-term vision, included in the Vision.

**Attended Meeting: 59**  
**Surveys Completed: 56**  
**Mailed-In Surveys: 16**

## **EAST - WEST COLLECTOR FOCUS AREA PUBLIC INPUT MEETING...**

### **SEPTEMBER 21, 2004**

The purpose of this meeting was to meet with residents in the local vicinity of the proposed trail commonly referred to as the East-West Collector. At this meeting we listened to specific comments from residents surrounding the East-West Collector prior to forming specific recommendations.

### **LOCATION**

Delta Township Hall, 7710 W. Saginaw Highway, Lansing, Mi 48917

### **ATTENDANCE**

The meeting was attended by 50 people.

### **PRESENTATION**

It had been eight months since the last Public Input Meeting. The goals of the study, status, and progress were reviewed with the Delta Township residents

A PowerPoint presentation included:

- Goals for the study.
- A review of the meeting schedule to obtain additional public input for the three focus areas of Carrier Creek, the Grand River Corridor, and the East-West Collector.
- Locally implemented trails in the City of Portland, Lansing, and East Lansing were presented as successful examples of trail systems. Three different Carrier Creek sections at various points along the creek representing the lay of the land and existing trees; some pictures of the Carrier Creek area were shown and areas were highlighted where the Eaton County Drain Commission was conducting maintenance along the Carrier Creek Corridor.
- Pictures that were taken along the East-West Collector from Creyts Road to Sharp Park.
- Aerial maps showing the East-West Collector beginning at Creyts Road to Sharp Park were



enlarged and broken down into five area maps.

- An input survey was distributed to the East-West Collector residents that attended, and they were asked to fill out a survey at the meeting or return it to the Township by November 1, 2004.
- Public comment on the Study was collected at the end of the meeting.

## **EAST-WEST COLLECTOR – PUBLIC COMMENTS FROM SEPTEMBER 21, 2004 MEETING**

- What are the costs associated with this project and will state, and federal funding be provided?
- Do not want to see this developed. Lots of people that walk daily do not want this in our area.
- Potential connector destroys privacy, increases crime, increases strangers, decreases property value and costs money.
- There should be alternative places that trails can be built that don't encroach on private property. Don't want problems from other areas.
- Install sidewalks, using the money for the proposed trail, along the roadways before considering trail options.
- The sidewalks in our front yards are adequate, and we do not need sidewalks and trails in our front and back yards.
- I am concerned about additional noise and whether the trails would be open at night and how the trail could be enforced.
- Please implement the proposed trail Study so I can get to stores, etc. without having to dodge traffic and always drive everywhere.
- Providing nature trails in the East-West Collector and Carrier Creek areas would be attractive.
- What demographic groups are projected to use the proposed trails and Saginaw Highway?
- Safety issues need to consider Willow Highway and children.
- Would like to see statistics on connecting a trail to a mall, concerning dogs, reports of crime, motor vehicles and off-road vehicles.
- Would like to see traffic counts and statistics on whether trails reduce single vehicle trips?
- What is the potential for increased runoff and flooding from the trail?
- Vehicle traffic on Saginaw, Willow and St. Joe Highway is increasing and dangerous. Would like to see asphalt trails including the proposed East-West Connector, which provides a safer, more pleasant way to get across populated areas.
- Is there a written report on maintenance?
- What funds have been allocated for the proposed trail Study so far?
- Property values have increased on the White Pine Trail.
- I currently live on a trail and don't have to lock the doors.
- Attendee requested that a public hearing be held in front of the Planning Commission and wondered if the Planning Commission is involved?
- Once the land is developed it is hard to restore it back to its original condition.
- Using sidewalks as trails are potentially dangerous.
- The proposed is a great concept, which could increase the quality of life, draw employees and provide recreation.
- East-West Collector is public property owned by all residents in Delta Township and the land should not be given to adjacent property owners.
- Building homes has already disturbed nature and wildlife and a trail is more desirable than a road.
- Demographics of the people at the meetings do not represent the opinions of the Township as a whole and many people are intimidated and afraid to voice their opinions in favor of the proposed Vision.

**Attended Meeting: 43**

**Surveys Completed: 41**

**Mailed-In Surveys: 1**



## **STEERING COMMITTEE MEETING...**

### **SEPTEMBER 30, 2004**

Following numerous public meetings the Delta Township Board requested that the consultant meet with the residents in three focus areas to gain additional input before forming specific recommendations. The three focus areas were the Carrier Creek, Grand River Corridor, and the East-West Collector.

The purpose of this meeting was to meet again with the Steering Committee to share results of the three focus areas of Carrier Creek, Grand River Corridor, and East-West Collector and discuss the preliminary recommendations, response to citizens' comments, and future actions for these specific areas.

### **LOCATION**

Delta Township Hall, 7710 W. Saginaw Highway, Lansing, MI 48917

### **ATTENDANCE**

The meeting was attended by ten Steering Committee members.

### **PRESENTATION**

A PowerPoint presentation was shown to the Steering Committee since it had been eight months from the last time we met. The PowerPoint presentation showed:

- A review of the project progress and the current status were shared with the Steering Committee.
- Health, safety, and economic benefits of trails and greenways; a handout with the summary of statistics was distributed.
- The additional public meetings to focus on the Carrier Creek, Grand River and the East-West Collector requested by the Township were reviewed with the Steering Committee.
- The surveys for each focus area and public comments recorded at the input meetings were distributed.
- The basis for preliminary recommendations, response to citizens' comments, the preliminary recommendations and future actions were presented to the Steering Committee.

## **PRESENT PRELIMINARY RECOMMENDATIONS... GRAND RIVER/CARRIER CREEK**

### **OCTOBER 14, 2004**

The Delta Township Board requested the consultant meet with the residents in three focus areas to gain additional input before forming specific recommendations. The three focus areas are the Carrier Creek, Grand River Corridor, and the East-West Collector. The meetings were held and comments were gathered from residents in attendance. The purpose of this meeting was to present specific recommendations for the Carrier Creek and Grand River Corridor based on input received throughout the planning process.

### **LOCATION**

Delta Township Hall, 7710 W. Saginaw Highway, Lansing, MI 48917

### **ATTENDANCE**

The meeting was attended by ten people.



## PRESENTATION

A PowerPoint presentation was shown highlighting:

- The four phases to implement the Study were discussed with an estimated range of years for each phase.
- Some statistics were shared about the Nebraska Recreational Trail and Pere Marquette Rails-Trail.
- The basis for preliminary recommendations were reviewed for the Carrier Creek and the Grand River Corridor areas.
- Response to citizens' comments from the September 16 public meeting were presented.
- Some statistics were shared about use and safety of the Lansing River Trail.

Local and state parks directors, trail coordinations, and administrators were interviewed. The results were highlighted:

- Comments on crime statistics, vandalism, property values, and maintenance issues were discussed.
- The trail examples discussed included Lansing, East Lansing, Dewitt, Portland, Delta Township, Kent County and Oakland County.
- The process of working with owners of privately-owned land and obtaining easements to the land was outlined.
- Working in floodplains, wetlands, and environmentally sensitive areas was discussed.
- The process of allowing a trail easement in the existing drain easement was discussed.
- The criteria used for designing trails was reviewed citing the American Disabilities Act (ADA) and the Association of State and Highway Transportation Officials (AASHTO) as guides to developing trails.
- During the previous meeting, specific concerns were expressed. A response to each issue was discussed. The specific issues addressed were noise, litter, trail surface materials, easements, conservation practices, trail heads, sharing information between agencies, screening, patrols, and maintenance.
- Future actions were discussed which outline what happens to the Study following adoption. The future actions included specific phasing for the Grand River Corridor and Carrier Creek area. There was a discussion about how to acquire easements from private property owners and obtain future land acquisitions.
- It was mentioned that further study of ownership and obtaining information such as boundary surveys, topographic surveys, tree surveys, ecological surveys, and hydrological studies was needed. The information after it is collected should be analyzed and a Preliminary Plan should be produced. The policies to govern the trail should also be established.
- The design development process was outlined and it was mentioned that the designer of the trail should meet with citizens to discuss trail alignment, trail location, individual access, privacy issues, fencing, vehicle deterrents, drainage, road crossings, signs, amenities, materials, and width of trail.
- Operation procedures need to be determined to include hours of operation, maintenance schedule, security, and support.
- Public comment was received on the preliminary recommendations presented.
- This represents a brief outline of the recommendations presented to the public. A more detailed list of specific recommendations are listed in the back of this report.

## BASIS FOR PRELIMINARY RECOMMENDATIONS GRAND RIVER / CARRIER CREEK (10-14-04)...

The preliminary recommendations were presented to both the Grand River and the Carrier Creek area in the same meeting. Many of the recommendations were the same for each area however, when there is a difference, it is noted by project area in the recommendation.

## FOCUS AREA

Non-motorized trails and greenways are becoming very popular throughout the country. They are fast becoming part of



the “green infrastructure” for healthy, walkable communities. Trails and greenways are generally recognized as a component which contributes to increasing real estate sales and values by seven to fifteen percent according to National Geographic Magazine. They also contribute to a healthy life style, promote socialization, and provide an alternate form of transportation from the automobile. One of the main purposes of a non-motorized system is to connect parks, neighborhoods, municipal services, schools, and retail centers. For these reasons, the creation of trails and greenways are in the best interest of the long-term welfare of a community.

#### **GRAND RIVER:**

The Study has identified the need for “off-road” routes in an East/West direction along the Grand River in both the northern and southern portions of the Township. The northern portion of that route is the most populated area of the Township. The southern route is also mostly developed along the Grand River. Because both areas are mostly developed, the opportunity for creating a new “off-road” non-motorized corridor is very limited. Although non-motorized improvements along roadways are a primary objective of the Study, they do not offer the highest quality recreational experience. In addition, both areas are in alignment with the proposed future “River Trail” that has been developing throughout the City of Lansing for the past 25 years. It is conceivable that both sections might someday connect to the City’s trail system, which currently connects to Michigan State University, City of East Lansing, and Meridian Township, with future plans to connect to the City of Williamston and beyond. Trail development along the northern tier of Delta Township would allow connection to the City of Grand Ledge, who is also contemplating a trail system. Lansing’s priority at the present time is to connect to Delhi Township on its southern border, which is proposed to continue to the City of Mason and beyond. Therefore, the “North Grand River” and “South Grand River” trail concept appears to meet this long-term regional goal, which is currently supported by many of the surrounding Mid-Michigan communities.

There are significant challenges to this idea. First, the land where the trail/greenway is proposed is privately held. Secondly, many existing residents do not favor this idea and appear unwilling to provide easements. There are some landowners that favor the trail and are willing to grant easements for future trail development. Therefore, this project will require education and patience for it to become reality. It will take significant time to acquire easements and will be costly to construct.

The Delta Township Board requested that the consultants, Landscape Architects and Planners, Inc. (LAP) host a set of Citizen Input Meetings designed to focus on the “off-road” routes. The East-West Route commonly referred to as the Grand River Corridor was identified as a potential route during the conceptual development phase of the planning process. Following the Citizen Input Meeting held on September 16, 2004, LAP collected and analyzed comments made by citizens. For specific comments, please refer to the “Summary of Comments” which is attached.

Below on this page is a response to citizens’ questions and comments raised during the Citizen Input Meeting and provides a basis for recommendations for their specific non-motorized route.

#### **CARRIER CREEK:**

The Study has identified the need for “off-road” routes within the Township. One off-road route has been identified to run in a north/south direction. Most of that route is located in the northeast quadrant, which is the most populated area of the Township. Because the northeast quadrant of the Township is mostly developed, the opportunity to create a new “off-road” non-motorized corridor is very limited. Although non-motorized improvements along roadways are another primary objective of the Study, they do not offer separation from vehicles or the highest quality recreational experience. Therefore, Carrier Creek, which is a natural corridor, appears to service this need. The corridor is undeveloped from the Township’s Waste Water Treatment Plant to the abandoned golf course previously known as the Players Club. The width varies from 100’ to 250’ +/- . Almost the entire corridor is comprised of wooded areas, floodplain, and wetlands.

However, there are significant challenges to this idea. First, the land where the trail /greenway is proposed is privately held.



Secondly, many existing residents do not favor this idea and appear unwilling to provide easements. There is, however, a minority of landowners that favor the trail and are willing to grant easements for future trail development. Therefore, this project will require education and patience for it to become reality so that is why this project is proposed as the last phase of the Study. It will take time to acquire easements and will be costly to construct.

Delta Township Board requested that the consultants, Landscape Architects and Planners, Inc. (LAP) host a set of Citizen Input Meetings designed to focus on the “off-road” routes. The North-South Route commonly referred to as Carrier Creek was identified as a potential route during the conceptual development phase of the planning process. Following the Citizen Input Meeting held on September 16, 2004, LAP collected and analyzed comments made by citizens. For specific comments, please refer to the “Summary of Comments” which is attached.

The following is a written response to questions and comments raised during the Citizen Input Meeting and provides a basis for recommendations for this specific non-motorized route.

### **RESPONSE TO CITIZENS' COMMENTS** (response common to both the Grand River and Carrier Creek)

Security: Trails are generally safe. Statistics have shown trails to be as safe as the neighborhoods in which they are constructed. Crime statistics are generally not related to the trails but more to the land uses near the trails. In Mid-Michigan trail statistics are lacking. However, reports from local police departments do not indicate there is significant crime on any of the Mid-Michigan trails and many indicate no crime being reported at all.

Design Criteria: It is recommended that current design criteria be used to design the trail. This would include, American Disability Act, (ADA - barrier free), American Association of State Highway and Transportation Officials (AASHTO) and others that are common for public trails.

Lighting: Lighting is not recommended along the trail. The hours of operation for trails are generally from dawn to dusk. The need for lighting usually appears only in densely populated areas where use is promoted after-dark such as near downtown centers, retail areas, and event venues. This area of Delta Township does not fit this use since it is primarily a residential community.

Noise: Non-motorized trails are generally quiet. Noise usually becomes a factor if large events are scheduled on the trail or if they are motorized. Neither of which is being proposed for this segment of the trail. An occasional barking dog or a person’s voice are the main sources of noise. Enforcement of regulations can control most of these disturbances.

### **GRAND RIVER:** (response specifically to the Grand River)

Privately Owned Land: The Grand River parcels for the most part are privately held land. The only way to develop a trail is by obtaining the private land and placing it in public ownership. It is our recommendation that this only be done by purchase or donation. We do not recommend using eminent domain or condemnation for this purpose. The act of acquisition using these methods would undermine the intent and spirit of the trail and its intended use. Riparian rights come with the landowner’s bundle of rights. Riparian rights cannot be granted without the owner’s permission through an easement or purchase. It is unlikely the Township will commit the funds to purchase private land without receiving some type of grant from the State of Michigan, a corporation, or a private foundation.

Floodplains /Wetlands: The Grand River is naturally associated with floodplains and wetlands. A pathway cannot be developed in a floodplain or wetland without obtaining a Michigan Department of Environmental Quality (MDEQ) and United States Army Corps of Engineers (USACE) Joint Permit from the State of Michigan. This type of permit requires a separate public review process from Delta Township’s planning process. The permit requires a hydrological analysis of the river corridor and specific computer modeling before such a permit could be granted. It also requires an Environmental

Impact Study of both flora and fauna. Rigorous design standards must be met before any such permit would be granted. Pervious versus non-pervious surfaces (trail material) would also be evaluated during this process as well as any vertical obstructions.

Drain Commissioner Jurisdiction: The Eaton County Drain Commissioner has jurisdiction in many tributaries flowing into the Grand River. It would be necessary to coordinate this project with that agency when contemplating the design of this type of project.

**CARRIER CREEK:** (response specifically to the Carrier Creek)

Privately Owned Land: Carrier Creek for the most part is privately held land. The only way to develop a trail is by obtaining the private land and placing it in public ownership. It is our recommendation that this only be done by purchase or donation. We do not recommend using eminent domain or condemnation for this purpose. Acquisition of land using these methods would undermine the intent and spirit of the trail and its intended use. Riparian rights should be considered when obtaining easements. Riparian rights cannot be granted without the owner's permission through an easement or purchase. We are estimating that it would take more than 50 years to acquire and build the trail along the Carrier Creek knowing the current sentiment of the landowners in this area. The trail is placed in the last phase of development for the Study. It is unlikely the Township will commit the funds to purchase private land without receiving some type of grant from the State of Michigan, a corporation, or a private foundation.

Floodplain /Wetland: Carrier Creek is located in the 100-year floodplain and contains many wetlands. A pathway cannot be developed in a floodplain or wetland without obtaining a Michigan Department of Environmental Quality (MDEQ) and United States Army Corps of Engineers (USACE) Joint Permit from the State of Michigan. This type of permit requires a separate public review process from Delta Township's planning process. The permit requires a hydrological analysis of the river corridor and specific computer modeling before such a permit could be granted. It also requires an Environmental Impact Study of both flora and fauna. Rigorous design standards must be met before any such permit would be granted. Pervious versus non-pervious surfaces (trail material) would also be evaluated during this process as well as any vertical obstructions.

Drain Commissioner Jurisdiction: The Eaton County Drain Commissioner has obtained an easement from each property owner limiting the work to drain improvements only. A similar process would have to be undertaken to obtain permission from each landowner to construct a trail.

**PRELIMINARY RECOMMENDATIONS** (for the Grand River and Carrier Creek)

Material: Consider the entire range of trail surfaces when planning this section. Do not assume that asphalt is the only choice. If strollers and/or roller blades are a primary factor, then asphalt may be the material for choice; but other surfaces should be considered in the design process based upon potential uses.

Trail Heads: Discourage the development of large trailheads in neighborhoods. Concentrate on intimate connections to neighborhoods and destinations. Encourage the use by local community residents.

Other Agencies: Communicate with and utilize the expertise of other agencies (Drain Commissioner, Road Commission, Sheriff's Department, Utilities Department, Parks Department, and others) during the design, development, and management of this trail system.

Screening: Provide adequate setbacks and generous screening or buffers between the trail and the adjacent property owner. Use vertical barriers, fencing or similar means to provide and create privacy where requested.

Patrols: Provide adequate police patrols and neighborhood watch programs from the initial stages of development. Add a bicycle patrol component to the police program. Allow designated neighbors to participate in the patrol of the trails and greenways and encourage communication and participation.

Maintenance Program: Designate the area as a Township Park and allow the Parks Department to manage the property. The trail will require regular trash pick up, sweeping, and plowing. Provide the personnel and equipment necessary to perform these functions.

**GRAND RIVER:** (preliminary recommendations for the Grand River)

Easements: Solicit easements by working with existing or future landowners. Determine criteria that will allow the Township to enter into negotiations with landowners, such as; fair value policies, donations, gifts, hold-harmless clauses, conservation practices and other land acquisition policies. Work with landowners to better understand their needs so that land donation becomes a benefit to them as well as to the community.

Conservation Practices: Use the most up to date conservation practices when developing a trail along the waterways of Delta Township. Enhance and/or avoid sensitive natural features whenever possible. Use interpretation and education whenever possible to allow for greater appreciation of our natural resources. Develop conservation policies that protect and enhance the natural systems associated with this area.

**CARRIER CREEK:** (preliminary recommendations for the Carrier Creek)

Easements: The Township should solicit easements by working with existing or future landowners. Criteria should be established that will allow the Township to enter into negotiations with landowners, such as; fair value policies, donations, gifts, hold-harmless clauses, conservation practices and other land acquisition policies. The Township should work with landowners to better understand their needs so that a land donation becomes a benefit to them as well as to the community.

Conservation Practices: When developing the trail, care should be taken to enhance and/or avoid sensitive natural features whenever possible. Disturbances should be kept to a minimum whenever possible. Part of the design should incorporate interpretative stations and/or educational opportunities whenever possible to allow for greater appreciation of our natural resources. Conservation policies that protect and enhance the natural systems should be developed in association with this area.



**FUTURE ACTIONS** (for both the Grand River and the Carrier Creek)

In an effort to conclude the Non-motorized transportation planning process, the following outline recommends additional steps to follow after the Vision is adopted that will allow more in-depth analysis of these specific routes.

**Overall Non-Motorized Transportation Planning Process (Main Categories)**

- The Vision – Currently in process
- Study/Design Development – Design of specific areas based on priorities and additional community input
- Funding – Application for grants and/or allocation of local funds
- Implementation – Construction plans, bidding and construction
- Maintenance and Post Evaluation – Township to provide maintenance and monitor procedures

**Non-Motorized Transportation Projected General Phasing**

Phase 1 – Red Routes on the Priority Plan 2005-2025

**GRAND RIVER:** (future actions for the Grand River)

**General Phasing Recommendations for Grand River North**

- A. Develop trails within the existing parks near the river such as Grand Woods, Hawk Meadows, and Delta Mills. A trail has been recently developed in Hunter’s Orchard Park. Use these as examples to encourage future land acquisitions for trails.
- B. Solicit easements from property owners to allow for the future development of the trail.
- C. After easements are in place, connect park land and neighborhoods.
- D. Pursue future phases to the west along the Grand River ultimately to Grand Ledge.

**General Phasing Recommendations for Grand River South**

- E. Work with Woldumar Nature Center and Anderson Nature Park to develop a trail system that is compatible with their existing trails and programs.
- F. Solicit voluntary easements from property owners to allow for the future development of the trail along the Grand River. Where easements are not available, consider connecting back to Old Lansing Road during the interim transition period.
- G. After easements are in place, connect park land and neighborhoods.
- H. Connect to the multi-use path proposed along Creyts Road and ultimately to Diamonddale.

**Design Recommendations for the Grand River North/South**

Easements and Land Acquisitions

- A. Acquire easements from landowners on a voluntary basis.
- B. Do not use eminent domain or condemnation.
- C. Allow time for landowners (possibly future landowners) to grow accustomed to trails and greenways through example in other portions of the Township and lead by example.

**CARRIER CREEK:** (future actions for the Carrier Creek)

**General Phasing Recommendations for the Carrier Creek Area**

- A. Solicit easements from property owners to allow for the future development of a trail.
- B. After easements are in place, start at the south (Players Club) and proceed north to Saginaw Highway (area is not as intensely developed and allows for consolidated acquisition).



- C. After easements are in place, proceed from Saginaw Highway north to Willow Highway.
- D. Connect to the Grand River only after a trail is developed along the Carrier Creek.
- E. Determine policies to govern the trail

#### **Easements and Land Acquisitions**

- A. Acquire easements from landowners on a voluntary basis.
- B. Do not use eminent domain or condemnation.

Develop a pilot project and allow time for landowners (possibly future land owners) to observe and evaluate the project over time.

#### **IMPLEMENTATION PROCESS: (for the Grand River and Carrier Creek)**

##### **Study Phase**

- A. Ownership – Designate an agency to take charge (Parks Department. etc.)
- B. Obtain the following information:
  - 1. Boundary Survey
  - 2. Topographic Survey
  - 3. Tree Survey
  - 4. Ecological Survey
  - 5. Hydrological Data
- C. Analyze data
- D. Produce a preliminary design
- E. Determine policies to govern the trail

##### **Design Development**

- A. Meet with citizens to discuss design parameters
  - a. Trail location within the public right of way
  - b. Individual access to trail from adjacent property owners (only if desired)
  - c. Privacy issues – fencing, landscaping, setbacks, etc.
- B. Design issues
  - a. Vehicle deterrents – bollards, gates, barriers, etc.
  - b. Drainage – trench drains, culverts, catch basins, etc.
  - c. Road crossings and or intersections
  - d. Signs (location, type, size etc.)
  - e. Amenities (benches, trail markers, exercise stations, etc.)
  - f. Materials – (asphalt, concrete, limestone, cinders, etc.)
  - g. Sizes – (width, depth of materials, setbacks, etc.)

##### **Determine Operation Procedures**

- A. Operation procedures
  - a. Hours of operation – dawn to dusk
  - b. Maintenance schedule – personnel and equipment
  - c. Security – police and citizen patrols
  - d. Support – trails group/citizen Design Review Committee



## **PRESENT PRELIMINARY RECOMMENDATIONS... EAST-WEST COLLECTOR**

### **OCTOBER 19, 2004**

The Delta Township Board requested the consultant meet with the residents in three focus areas to gain additional input before forming specific recommendations. The three focus areas are the Carrier Creek, Grand River Corridor, and the East-West Collector.

The purpose of this meeting was to present specific recommendations for the East-West Collector.

### **LOCATION**

Delta Township Hall, 7710 W. Saginaw Highway, Lansing, MI 48917

### **ATTENDANCE**

There were 15 people in attendance.

### **PRESENTATION**

A PowerPoint presentation was shown highlighting the preliminary recommendations for the East-West Collector.

- The summary of comments from the September 16 and September 21 meetings was distributed.
- The preliminary recommendations in the presentation included the basis for the preliminary recommendations, responses to citizens' comments, and preliminary recommendations for the East-West Collector. Future actions were also presented.
- Public comment was received on the preliminary recommendations.

## **BASIS FOR PRELIMINARY RECOMMENDATIONS EAST - WEST COLLECTOR (10-19-04)...**

### **EAST-WEST COLLECTOR FOCUS AREA**

Non-motorized trails and greenways are becoming very popular throughout the country. They are fast becoming part of the "green infrastructure" for healthy, walkable communities. Trails and greenways are generally recognized as components that contribute to increasing real estate sales and values by seven to fifteen percent according to National Geographic Magazine. They also contribute to a healthy life style, promote socialization, and provide an alternate form of transportation from the automobile. One of the main purposes of a non-motorized system is to connect parks, neighborhoods, municipal services, schools, and retail centers. For these reasons, the creation of trails and greenways are in the best interest of the long-term welfare of the community.

The Study has identified the need for "off-road" routes within the Township. One off-road route has been identified to run in an East/West direction. Most of that route is located in the northeast quadrant, which is the most populated area of the Township. Because the northeast quadrant of the Township is mostly developed, the opportunity to create a new "off-road" non-motorized corridor is very limited. Although non-motorized improvements, along roadways, is another primary objective of the Study, they do not offer separation from vehicles or the highest quality recreational experience.

Therefore, the East-West Collector, which is an undeveloped right-of-way, appears ideal to service this need. The corridor is, for the most part, undeveloped from the west end of Sharp Park to Canal Road. In most sections it is 66' wide. About two-thirds of the corridor is wooded or contains shrubs, with the remainder tall grasses.



The Delta Township Board requested that the consultants, Landscape Architects and Planners, Inc. (LAP), host a set of Citizen Input Meetings designed to focus on the “off-road” routes. The East/West Route commonly referred to as the East/West Collector was identified as a potential route during the conceptual development phase of the planning process. Following the Citizen Input Meeting, held on September 21, 2004, LAP collected and analyzed comments made by citizens. For specific comments, please refer to the “Summary of Comments” which is included in this report.

### **RESPONSE TO CITIZENS' COMMENTS** (for the East-West Collector)

Security: Trails are generally safe. Statistics have shown trails to be as safe as the neighborhoods in which they are constructed. Crime statistics are generally not related to the trails but more to the land uses near the trails. In mid Michigan trail statistics are lacking; however, reports from local police departments do not indicate there is significant crime on any of the Mid Michigan trails and some indicate “no crime” being reported at all.

Publicly Owned Land: The East/West Collector is for the most part publicly owned land (66’ in most areas) from Sharp Park to Canal Road. Although it is publicly owned, any trail design must respect the rights of the adjacent landowners as much as possible. Individual landowners should be consulted during the preliminary design stage of the route to account for privacy measures among other design issues.

Design Criteria: It is recommended that current design criteria be used to design the trail. This would include meeting ADA (barrier free) standards, AASHTO (design standards) and others that are common for public trails. Privacy should be accommodated to the extent possible by the use of fencing, landscaping or other visual barriers. Setbacks should be used effectively within the 66’ public right-of-way.

Lighting: Lighting is not recommended along the trail. The hours of operation for trails are generally from dawn to dusk. The need for lighting usually appears only in densely populated areas where use is promoted after dark such as near downtown centers, retail areas, and event venues. This area of Delta Township does not fit this description since it is primarily a residential community.

Noise: Non-motorized trails are generally quiet for the most part. Noise usually becomes a factor if large events are scheduled on the trail or if they are motorized. An occasional barking dog or person’s voice are the main sources of noise. Enforcement of regulations can control most of these disturbances.

### **PRELIMINARY RECOMMENDATIONS** (for the East-West Collector)

Materials: Consider the entire range of trail surfaces when planning this section. Do not assume that asphalt is the only choice. If strollers and/or roller blades are a primary factor, then asphalt may be the material of choice, but other surfaces should be considered in the design process based upon potential uses.

Conservation Practices: Use the most up to date conservation practices when developing a trail within a vegetated area such as the East/West Collector. Enhance and/or avoid sensitive natural features whenever possible (primarily large healthy trees and/or underbrush). Use interpretation and education whenever possible to allow for greater appreciation of natural resources. Develop conservation policies that protect and enhance the natural systems associated with this area.

Trail Heads and Access Control: Discourage the development of large trailheads in neighborhoods. Concentrate on intimate connections to neighborhoods and destinations. Use barriers and/or gates to deter motor vehicles from entering the trail. Post signs to inform users of regulations.

Other Agencies: Communicate with and utilize the expertise of other agencies (Drain Commissioner, Road Commission, Police Department, Public Service Department, Parks Department, Planning Department, and others) during the design, development, and management of this trail system.

**Screening:** Provide adequate setbacks and generous screening or buffers between the trail and the adjacent property owner. Use vertical barriers, fencing, landscaping, or similar means to provide and create privacy where requested.

**Patrols:** Provide adequate police patrols and neighborhood watch programs from the initial stages of development. Add a bicycle patrol component to the police program. Allow designated neighbors to participate in the patrol of the trails and greenways and encourage communication and participation.

**Maintenance Program:** Designate the area as a Township Park and allow the Parks Department to manage the property. The trail will require regular trash pick up, sweeping, and plowing. Provide the personnel and equipment necessary to perform these functions.

**Prototype Project:** Implement a section of the trail to be used as a prototype. Once implemented, the Township should evaluate the safety, maintenance and overall function of the trail.

**FUTURE ACTIONS** (for the East-West Collector)

In an effort to conclude the non-motorized transportation planning process, the following outline recommends additional steps to follow after the Study is adopted that will allow more in-depth analysis of this specific route.

**Overall Non-Motorized Transportation Planning Process (Main Categories)**

- Routing Plan – Currently in process
- Study / Design Development – Design of specific areas based on priorities
- Funding – Application for grants and/or allocation of local funds
- Implementation – Construction plans, bidding and construction
- Maintenance and Post Evaluation – Township to provide maintenance and monitor procedures

**Non-Motorized Transportation Projected General Phasing**

Phase One – Red Routes on the Priority Plan 2005-2025 years

**East – West Collector Routing Design Recommendations**

Study Phase

Ownership – Designate an agent to take charge (Parks Department., etc.)

- A. Obtain the following information:
  1. Boundary Survey
  2. Topographic Survey
  3. Tree Survey
  4. Ecological Survey
  5. Hydrological Survey
- B. Analyze Data
- C. Preliminary Plan
- D. Ownership – Agency in charge (Dedicated park vs. others)
- E. Determine policies to govern the trail



### Design Development

- A. Meet with citizens to discuss design parameters
  - 1. Discuss individual needs:
    - a. Trail location within the right-of-way
    - b. Individual access to trail from adjacent property owners
    - c. Privacy issues – fencing, landscaping, setbacks
- B. Design issues:
  - a. Vehicle deterrents – bollards, gates, barriers
  - b. Drainage – trench drains, culverts, catch basins, etc.
  - c. Road crossings and or intersections
  - d. Signs (location, type, size etc.)
  - e. Amenities (benches, trail markers, exercise stations, etc.)
  - f. Materials – (asphalt, concrete, limestone, cinders, etc.)
  - g. Sizes – (width, depth of materials, setbacks, etc.)

### Determine Operation Procedures

- A. Operation Procedures
  - a. Hours of operation – dawn to dusk
  - b. Maintenance schedule – personnel and equipment
  - c. Security – police and citizen patrols
  - d. Support – trails group /citizen design review committee

### **BASIS FOR RECOMMENDATIONS (11-03-04)** (for the Study)

Non-motorized trails and greenways are becoming very popular throughout the country. They are fast becoming part of the “green infrastructure” for healthy, walkable communities. Trails and greenways are generally recognized as a the component that contributes to increasing real estate sales, and values, by 7 to 15% , according to National Geographic Magazine. They also contribute to a healthy life style, promote socialization, and provide an alternate form of transportation from the automobile. One of the main purposes of a non-motorized system is to connect parks, neighborhoods, municipal services, schools, and retail centers. For these reasons, the creation of trails and greenways are in the best interest of the long-term welfare of the community.

The Study has identified the need for “off-road” routes within the Township. One major off-road route has been identified running in an East/West direction. Most of that route is located in the northeast quadrant, which is the most populated area of the Township. Because the northeast quadrant of the Township is mostly developed, the opportunity to create a new “off-road” non-motorized corridor is very limited. Although non-motorized improvements along roadways is another primary objective of the Study, they do not offer separation from vehicles or the highest quality recreational experience.

Connectivity is important to allow for continuous routes throughout the Township. Connecting the trail system with the bordering cities of the Township is important for the future viability and safety of the trail. The cities to the north are Wacousta/Dewitt, to the west is Grand Ledge, to the east is Lansing River Trail, and the south are Dimondale/ Potterville.

Therefore, we are recommending a variety of non-motorized treatments be implemented throughout the Township. The recommendations include lane conversion (typically a four to three lane), bike lanes, shared-use paths, mid-block crossings, and pedestrian bridge overpasses.



## **STATE AND FEDERAL GRANT FUNDING PROGRAMS...**

### **MICHIGAN NATURAL RESOURCES TRUST FUND (MNRTF)**

The MNRTF is available through the Michigan Department of Natural Resources (MDNR), to any local unit of government, including school districts, or any combination of units in which authority is legally constituted to provide recreation. These funds are utilized to acquire land for outdoor recreation, natural resources protection, and to develop facilities for outdoor recreational opportunities such as trailways. The MNRTF is supported by revenue, interest accrued to the Trust from oil and gas exploration, and sales from state land.

Based on grant funding from previous years, there may be as much as 20 to 25 million dollars available for MNRTF grants in the next few years. No more than 25% of the grant funds allotted each year can be awarded to development projects. The maximum development grant is \$500,000 and the minimum is \$15,000. There is no minimum or maximum for acquisition grants. At least a 25% match on either acquisition or development projects is required from local applicants. This match can be either cash, donations of labor, and/or materials, force account labor with the local applicants work force, or any combination thereof.

Grant applications under the MNRTF are calculated and scored by the DNR Grants Management Section (GMS), following the evaluation criteria set forth by the Board including special initiatives of the Board. The following special initiatives were established in 2003 for the MNRTF:

- 1) Acquisition of land or development of trailways that contribute to an overall state trail system.
- 2) Acquisition of land within an identified winter deer yard.
- 3) Acquisition of land that provides ecological connections or buffer areas that protect critical wildlife habitat.

Projects that meet one or more of the special initiatives will be given additional points. The MNRTF grant award recommendations are prepared by the Board. The Board's recommended applications must be submitted to the Legislature for approval and appropriation of funds before grants can be issued. Development grant applications are accepted each year no later than April 1. Acquisition grant applications are accepted no later than April 1 and again no later than August 1.

Applicants applying for the MNRTF are required to have a current community recreation plan approved by the DNR. The plan must demonstrate the need for the project designated in the MNRTF application. To be eligible for grant funding in Round 1, new recreation plans or plan revisions must be submitted to the DNR for review in February and must have DNR approval by March. To be eligible for grant funding in Round 2, new plans or revisions must be submitted for review by July and must have MDNR approval by August. For information regarding the MNRTF, go to the website, [www.michigan.gov/dnr](http://www.michigan.gov/dnr), or call the MDNR Grants Management Section at 517-373-9125.

### **TEA 21 (TRANSPORTATION EQUITY ACT FOR THE 21ST CENTURY)**

Ten percent of the Surface Transportation Fund is set aside for transportation enhancement activities. In TEA 21, the term transportation enhancement activities means: 1) Provision of facilities for pedestrians and bicycles; 2) Provision of safety and educational activities for pedestrians and bicyclists; 3) Acquisition of scenic easements and scenic or historic sites; 4) Scenic or historic highway programs (including the provision of tourist and welcome center facilities); 5) Landscaping and other scenic beautification; 6) Historic preservation; 7) Rehabilitation and operation of historic transportation buildings, structures, or facilities (including the conversion and use of it for pedestrian or bicycle trails); 8) Preservation of abandoned railway corridors (including historic railroad facilities and canals); 9) Control and removal of outdoor advertising; 10) Archeological planning and research; 11) Environmental mitigation to address water pollution due to highway runoff or to reduce vehicle-caused wildlife mortality while maintaining habitat connectivity; and 12) Establishment of transportation



museums. The ten percent set aside can only be spent on these type of activities. MDOT, who distributes these federal monies, has combined the above activities into four broad categories: 1) Non-motorized facilities; 2) Transportation aesthetics; 3) Water quality and wildlife mortality; and 4) Historic preservation.

Typically, calls for enhancement projects occur in the spring or fall depending on available funding. At that time, deadlines for applications are announced. This program was recently extended for six years. Applications must be submitted by an Act 51 agency. You can apply for funding with a match as low as 20% for your application to receive full consideration. However, a larger match will increase the likelihood of receiving funding. All applications must be reviewed and approved by the MDOT Metropolitan Planning Organization (MPO). The MPO for Delta Township is the Tri-County Regional Planning Commission. The Senior Transportation Planner for the TCRPC is Paul Hamilton, (517) 393-0342). Bryan Armstrong is MDOT's Enhancement Program Coordinator and can be reached at (517) 335-2918. Amber Simon, Enhancement Program Analyst, is also available for information at (517) 241-1456.

### **LAND AND WATER CONSERVATION FUND (LWCF)**

This federal program, administered in Michigan by the Michigan Department of Natural Resources (MDNR), funds the planning, acquisition, and development of land for federal and non-federal (known as "state-side") outdoor recreation. This program has recently been brought back from dormancy with funding for 2003 and beyond reaching at least \$4 million per year. State agencies and local municipalities are eligible for state-side LWCF funds. These funds can generally be used to acquire land, build or repair recreation or park facilities, provide riding and hiking trails, enhance recreational access, and provide wildlife and hunting areas. The program matches up to 50% of the cost of a project. The MDNR contact for LWCF funding is James Wood, Manager, Resource Protection Section, Grants Administration Division, MDNR, (517) 241-2480.

### **METROPOLITAN PLANNING ORGANIZATION FUNDING (MPO)**

This funding is administered through the local regional Planning Commission office. The Tri-County Regional Planning Commission office includes Clinton, Eaton, and Ingham Counties. A Study must be submitted to the Tri-County Regional Planning Commission Office for review to see if it qualifies for funding. The project under consideration must have an estimated cost, fulfill a transportation need and be submitted by a Act 51 Agency. A local match is usually required by the applicant. The contact for Tri-County Regional Planning Commission is Paul Hamilton, Chief Planner, (517) 393-0342. The MPO funds non-motorized trails with monies allocated for proposed transportation projects. The funding is provided by Michigan Department of Transportation (MDOT). Funding availability varies each year. The current requirement is one percent of roadway improvement monies be used for non-motorized improvement.

### **PRIVATE FUNDING SOURCES...**

Safe Routes 2 School	<a href="http://www.saferoutestoschools.org">www.saferoutestoschools.org</a>
Robert Wood Johnson Foundation	<a href="http://www.rwjf.org">www.rwjf.org</a>
Mott Foundation	<a href="http://www.mott.org">www.mott.org</a>
Kellogg Foundation	<a href="http://www.wkkf.org">www.wkkf.org</a>
General Motors Corporation	<a href="http://www.gm.com">www.gm.com</a>

### **LOCAL PRIVATE FUNDING SOURCES**

Meijer	<a href="http://www.meijer.com">www.meijer.com</a>
Target	<a href="http://www.target.com">www.target.com</a>
Granger Foundation	<a href="http://www.grangerfoundation.org">www.grangerfoundation.org</a>

*Funding opportunities information provided in part by the Rails to Trails Conservancy, Michigan Field Office.*

# OPINION SURVEY...

Opinion survey distribution at the September 30, 2003 Public Input Meeting posted on the Delta Township website and randomly mailed to 400 households.

**DELTA TRAILS  
NON-MOTORIZED TRANSPORTATION OPINION SURVEY**

**INTRODUCTION**

As part of a continuing planning effort to improve Delta Charter Township, the Township has hired a planning firm to study non-motorized transportation within the Township. The following is an informal questionnaire that will help the planners obtain citizen input. The planners will use this information as one of many tools to assist in making recommendations for future improvements. The completed study will be used to apply for state and federal funding as well as other applicable grants. **Please PRINT your responses clearly.**

**SOME PLANNING ISSUES TO CONSIDER**

- Conflict Areas between pedestrians, bicycles, automobiles
- Destination Points such as; schools, parks, commercial centers, points of interest
- Problem Intersections
- On Street Conflicts (need of bicycle lanes, sidewalks, usually within the public road area, etc.)
- Off Street Needs (need an off street paths and trails, usually outside the public road area)

**PLEASE PRINT ALL RESPONSES CLEARLY SO WE CAN READ THEM.**

1. **Where do you reside?** (Check all that apply to you). Assume I-496 divides North and South and I-96/69 divides East and West.

NE Quadrant  SE Quadrant  SW Quadrant  NW Quadrant

If you live outside the Township  North,  South  East  West

2. **Which of the following non-motorized activities do you participate in?** (Check all that apply and comment if appropriate).

ACTIVITY	How many times per week do you perform the activity? (1, 2, 5, etc.)	How far do you travel on an average outing? (¼, ½, 1mile, etc.)
<input type="checkbox"/> Walking	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Bicycling	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Run / Jogging	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Roller Blading	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Skate Boarding	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Dog Walking	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Commute to Work	<input type="text"/>	<input type="text"/>

Any others that do not appear above that are relative to non-motorized transportation. List the activity, how often you use it per week, and how far on average you travel. (PLEASE PRINT)

What other Activity (if not listed above)? \_\_\_\_\_

How often do you use it per week? \_\_\_\_\_ How far on average do you travel? \_\_\_\_\_

3. **Where do you do the activities** asked in question 2 above? Provide a description of the route you travel during your outings or the parks / places that you visit when you do the activities. List roads, parks, and or public / private destinations. Use back of page if necessary. (PRINT PLEASE)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. **What are your impressions of the existing PEDESTRIAN system?** (sidewalks, pathways, intersections, trails, etc.) (check one)

- Excellent (no problems)
- Good (usually can get to destinations without problems)
- Fair (some problems getting to and from destinations)
- Poor (usually difficult to get to and from destinations)
- Terrible (very difficult if not impossible to get around)

5. **If you perceive a PEDESTRIAN problem,** describe the problem and the location. If multiple locations, please list as many as you can. Use the back page if necessary. (PLEASE PRINT)

\_\_\_\_\_  
\_\_\_\_\_

6. The Township has a sidewalk plan. **Where do you think additional sidewalk should be located?** (List by street name so we know what area you are talking about). Use the back of the page if necessary. (PLEASE PRINT)

\_\_\_\_\_  
\_\_\_\_\_

7. **What are your impressions of the existing BICYCLE system?** (bicycle lanes, bike parking, intersections, shared paths, etc.) (check one)

- Excellent (no problems)
- Good (usually can get to destinations without problems)
- Fair (some problems getting to and from destinations)
- Poor (usually difficult to get to and from destinations)
- Terrible (very difficult if not impossible to get around)

7. **If you perceive a BICYCLE problem,** describe the problem and the location. If multiple locations, please list as many as you can. Use the back page if necessary. (PLEASE PRINT)

\_\_\_\_\_  
\_\_\_\_\_

8. **Where do you think ON-STREET bike lanes should be located?** (List by street name so we know what area you are talking about). Use the back of the page if necessary. (PRINT)

\_\_\_\_\_  
\_\_\_\_\_

9. **Where do you think an OFF-STREET PATHWAY should be located?** (List by street name so we know what area you are talking about). Use the back of the page if necessary. (PRINT)

\_\_\_\_\_  
\_\_\_\_\_

10. Describe any other CONCERNS you have about the non-motorized transportation system in Delta Township. (PLEASE PRINT)

\_\_\_\_\_  
\_\_\_\_\_

11. Describe any other constructive SOLUTIONS about the non-motorized transportation system for the Township. (PLEASE PRINT)

Thank you, for participating in our opinion survey. Your input is valued and will be reviewed. Check Delta Township's Web Site for meeting schedules.

**HOW TO CONTACT US FOR MORE INFORMATION**

Should you have additional comments or ideas that you think will help our consultants, Landscape Architects & Planners, Inc. (LAP) in their attempt to create a meaningful plan, then contact us by any of the following methods:

**Delta Township Mailing Address:** Attn: Amy McEwan, Asst. Township Manager  
Delta Charter Township  
7710 West Saginaw Highway  
Lansing, MI, 48917-9712

**Delta E-Mail Address:** [amcewan@townshipdelta.mi.us](mailto:amcewan@townshipdelta.mi.us)  
LAP E-Mail: [bford@lapinc.net](mailto:bford@lapinc.net)

**Delta Township Telephone (517) 323-8590** Fax: (517) 327-1703  
LAP Telephone: (517) 485-5500 Fax: (517) 485-5576

## **SAFETY STATISTICS...**

### **SAFE ROUTES TO SCHOOL**

- 30 years ago 66% of children walked to school
- Today only 13% of American children walk or bike to school
- October 8, 2003:
  - National Walk and Ride to School Day
- 1970's Denmark had Europe's highest child pedestrian accident rate
- Over a ten-year period, paths were added, roads narrowed, and traffic islands added
  - Child pedestrian and cyclist casualties fell by 80% -- 1st National SR2S

*\*Statistics provided by: US Centers for Disease Control and Prevention*

### **1995 - Great Britain had 10 Safe Routes to School projects**

- Added bike lanes, traffic calming, and raised crossings
  - In two years, bike use tripled
  - Reduced speed zones cut pedestrian casualties by 77% and cycling casualties by 28%

### **2000 - Marion County, California**

- Survey showed that 70% of kids were driven to school, and 26% of morning traffic was for school
- In 2002 walking and biking rose by 80%

### **NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION**

- A pedestrian or bicycle injury or fatality happens every six to seven minutes
- 32.1 is the average age of a person involved in a fatality
- 85% of all pedestrian-vehicle accidents result in a fatality or serious injury
- 30% of fatal injuries are ages 5-15
- 41% of non fatal injuries are ages 5-20

### **AASHTO** (American Association of Highway Traffic Officials)

- A person will generally not walk to work a distance greater than one mile.
- A person will generally not walk to catch a bus a distance greater than one-half mile.
- 80% of all pedestrian trips are one-half mile or less.
- Typical pedestrian is a:
  - Shopper 50% of the time
  - Commuter 11% of the time
- Two-thirds of all accidents occur at intersections.



## **SIDEWALKS**

- 5' width in residential areas
- 5'-8' in commercial areas
  - 6' for sidewalks
- 8'-12' minimum width for TEA-21 funding (SAFETEA)

## **TRAIL STUDIES**

### **372 TRAILS STUDIED ACROSS THE UNITED STATES**

- Four separate studies conducted between 1979 and 1997 concluded that trails do not increase crime .
- Out of 372 trails included in this study, RTC found only eleven trails in 1995 and ten in 1996 reported 3% crime incidence. These were the highest crime rates on the trails.
- When trails are compared to roads, parking areas and private places they are safer, according to the National Rail to Trails Conservancy.
- Letters from law enforcement officials attest that the actual volume of incidents such as graffiti, littering, sign damage, and motorized use were minimal.
- RTC found that the majority of the property crimes committed on trails had only a minor effect on the trail and usually did not harm the adjacent private property.
- This letter was submitted by a trail user. "Since the trail was constructed and opened for use we have found that the trail has not caused any inconvenience to property owners along the trail", and "The residents seem to enjoy having the trail near their homes."
- Addressing trail users' safety and trail neighbors' concerns about crime are critical to the creation of a successful trail.
- The RTC Report has shown that crime on rail-trails is not a common occurrence.
- "The trail has not caused any increase in the amount of crimes reported. We have found that the trail brings in so many people that it has actually led to a decrease in problems." "The increased presence of people on the trail has contributed to crime being reduced." Charles R. Tennant, Chief of Police, Elizabeth Township, Buena Vista, PA.
- Bicyclists are more visible in bike lanes along the road.
- Bike lanes incorporated in the existing roadway system are safer than bicycles riding on the sidewalks because motorists cannot always see bicyclists crossing driveways. (United States Department of Transportation, [www.fhwa.dot.gov](http://www.fhwa.dot.gov))

*Rails to Trails Conservancy - Rail-Trails and Safe Communities, The experience on 372 Trails, 1998, Written by Tammy Tracy & Hugh Morris in cooperation with National Park Service – Rivers, Trails, and Conservation Assistance Program*

### **RAILS TO TRAILS SURVEY FOUND THE FOLLOWING HAVE REGULAR PATROLS**

- 69% of urban trails
- 67% of suburban trails
- 63% of rural trails

Patrols of trails are accomplished by:

- 20% local police
- 16% county police
- 9% park rangers
- 4% state police
- 3% volunteers



#### Patrol Modes:

- 33% car and truck
- 26% bike

*Rails to Trails Conservancy - Rail-Trails and Safe Communities, The experience on 372 Trails, 1998, Written by Tammy Tracy & Hugh Morris in cooperation with National Park Service – Rivers, Trails, and Conservation Assistance Program*

### **BURKE-GILMAN TRAIL IN SEATTLE, WASHINGTON**

- Local police officers and residents were interviewed on the 12-mile urban trail.
- Vandalism and burglary rates did not increase as a result of the trail.
- Rate of vandalism and break-ins to adjacent property was well below the neighborhood average.
- Separation from a criminal's vehicle is a primary deterrent to crime.

### **SUBURBAN RAIL-TRAILS**

- Incidents of graffiti and unauthorized motorized usage occurred less frequently on suburban rail-trails than urban trails. The number of suburban trails reporting crimes directly affecting adjacent property owners was significantly lower than the rates of trail vandalism.
- The national rate of suburban burglary is 820 per 100,000 inhabitants; only one suburban trail reported a break-in to adjacent property in 1996.
- 3% of suburban trails reported trespassing.
- 17% of the suburban trails reported graffiti.
- 24% of the trails reported littering.
- 22% of the trails reported sign damage.
- 14% of the suburban trails reported unauthorized usage.

*Rails to Trails Conservancy - Rail-Trails and Safe Communities, The experience on 372 Trails, 1998, Written by Tammy Tracy & Hugh Morris in cooperation with National Park Service – Rivers, Trails, and Conservation Assistance Program*

## **HEALTH STATISTICS...**

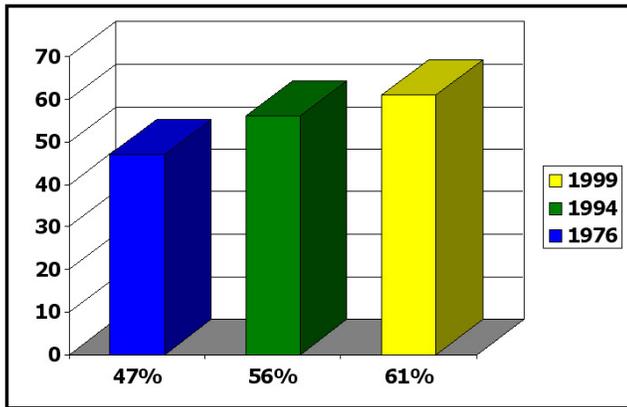
### **PHYSICAL ACTIVITY STATISTICS**

- 25% of all trips made in the U.S. are less than one mile in length, and 75% of those short trips are made by automobile.
- The number of trips the average American adult takes on foot each year dropped 42% between 1975 and 1995. Among children, walking trips dropped 37%. It is estimated that only 10% of public school students walk to school today, compared with a majority of students a generation ago. The most common means of transportation to school is by car.

*\*Statistics provided by the leadership for active living, supported by the Robert Wood Johnson Foundation*



## OVERWEIGHT OR OBESITY AMONG ADULTS



## OBESITY AMONG CHILDREN AND ADOLESCENTS

- In 1999, 13% of children aged 6 to 11 years and 14% of adolescents aged 12 to 19 years in the U.S. were overweight, nearly tripling the numbers from two decades ago.
- 25% of very obese children and 21% of very obese adolescents were found to be pre-diabetic or were at risk of developing diabetes.

*\*Statistics provided by the leadership for active living, supported by the Robert Wood Johnson Foundation*

## U.S. SURGEON GENERAL

- 60% of American adults are not regularly active.\*
- 25% are not active at all.\*
  - \*Rails-to-Trails “Benefits of Trails and Greenways”, The Trails and Greenways Clearinghouse, [www.trailsandgreenways.org](http://www.trailsandgreenways.org)
- Creating safe places for people to bicycle and walk is critical to persuading people to become more active\*\*
- Trails provide a safe, inexpensive avenue for regular exercise for people.\*\*
  - \*\* U.S. Department of Health and Human Services, *Physical Activity and Health*
- Almost half of the 12-21 year olds are not vigorously active on a regular basis.\*
- 40% of all high school students are not even enrolled in physical education classes.\*
  - \*(Centers for Disease Control, “CDC’s Guidelines for School and Community Programs, Promoting Physical Activity”, [www.cdc.gov/nccdphp/dash/phactaag.htm](http://www.cdc.gov/nccdphp/dash/phactaag.htm), March 1977)
- 25% of all trips made in the U.S. are less than one mile in length.\*\*
- 75% of those short trips are made by automobile.\*\*
  - \*\*Robert Wood Johnson Foundation ([www.rwjf.org](http://www.rwjf.org))
- 10% of public school students walk to school today, based on data from the U.S. Centers for Disease Control

## U.S CENTERS FOR DISEASE CONTROL AND PREVENTION

- 64% of the U.S population is clinically overweight and 31% are considered obese.
- Conditions are due to a lack of physical activity.
- Results can include increased heart disease, cancer, diabetes, anxiety, depression and other costly health problems. (*Robert Wood Johnson Foundation ([www.rwjf.org](http://www.rwjf.org))*).
- Trails strengthen a community’s ability to attract home buyers.
- Trails provide employers a way to reduce health care costs. (*USA Today 10/09/02*)

## ECONOMIC BENEFITS STATISTICS...

- Greenway corridors provide a variety of amenities, such as attractive views, open space preservation, and convenient recreation opportunities.
- This is reflected in increased property values and marketability for property located near open space.
- Developers also recognize these values and incorporate open space into planning, design, and marketing new and redeveloped properties.
- Natural open space and trails are prime attractions for potential home buyers.  
*"American Trails" Web site entitled Benefits of trails and greenways for health, community, economic development, and open space. (www.americantrails.org/resources/benefits/10\_reasons.htm1)*
- Other surveys show property values are higher in areas within proximity to trails and greenways.
- The Burke Gilman Trail in Seattle, Washington has 4,145 homes, 9,000 acres of land with 6,000 acres set aside as open space and dozens of miles of multi-use trails which link to amenities and a metro-wide system. The lots in developments adjacent to the trail had property values 7 to 15% higher than lots in similar developments not on the trail route. *(National Geographic – Sand Rozeboom, Rose and Company)*
- Increased participation in moderate physical activity by the 88 million inactive Americans could reduce medical costs by \$76 billion. *(Pratt et. al, 2000)*

## NATIONAL PARK SERVICE STUDY

- In "The Impacts of Rail-Trails," landowners along three rail-trails reported that their proximity to the trails had not adversely affected the desirability or values of their properties
- Along the suburban Lafayette/Moraga Trail in California, the majority of the owners felt that the trail would make their properties sell more easily and add increased value. *(National Park Service and Pennsylvania State University, 1992)*

## A SURVEY OF ADJACENT LANDOWNERS ALONG THE LUCE LINE RAIL-TRAIL IN MINNESOTA

- 87% believed the trail increased or had no effect on their property value.
- 61% of the suburban residential owners noted an increase in their property value.
- Appraisers and real estate agents claimed that trails were a positive selling point for suburban residential property, hobby farms, farmland proposed for development, and some types of small town commercial property.  
*(Mazour, 1988)*

## AN APRIL 2000 SURVEY

- Walking, jogging, and bike trails were second on an amenity list of the "important to very important," trailing only to highway access  
*(Gopal Ahluwalia, Director of Research for the National Association of Home Builders; "consistently rank in the top five, www.nahb.com/news/smartsurvey2002.htm.)*

## A 1994 SURVEY BY AMERICAN LIVES, INC.

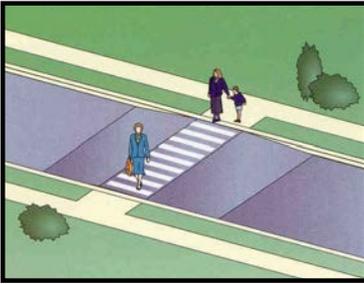
- According to research conducted for the real estate industry, 77.7% of all home buyers rated natural open space as either "essential" or "very important" in planned communities. Walking and bicycling paths ranked third.

## BENEFITS TO NEIGHBORHOODS

- Real Estate values over the next 26 years will rise fastest in mixed-use, walkable communities.
- Greenways increase property values nationwide. (1998 Study by the National Park Service)
- Land next to a greenbelt in Salem, Oregon was worth \$1,200 more per acre than 1,000 feet away.



## ADDITIONAL NON-MOTORIZED TRANSPORTATION TOOLS



(AASHTO, 93)

### SPEED HUMP/TABLE

A speed hump is wider and smoother than the speed bump. They are effective in slowing cars as they approach pedestrian zones. They are most appropriately used on neighborhood streets (AASHTO, 41).



(AASHTO, 43)

### NEIGHBORHOOD TRAFFIC CIRCLE

Small circular raised islands centered within intersections. Circles can be landscaped or surfaced with special paving. Landscaping can be maintained by the local jurisdiction or by neighborhood volunteers (AASHTO, 41).



(AASHTO, 43)

### CHICANE

Alternately placed curb extensions into the street that force motorists to drive in a serpentine pattern. Chicanes are offset from each other in mid-block locations to reduce traffic speeds and can be used to keep through-trucks versus local delivery off residential streets (AASHTO, 41).



www.pedbikeimages.org / Dan Burden

### MEDIAN

An island in the center of a road that physically separates the directional flow of traffic and can provide pedestrians with a place of refuge and reduce the crossing distance between safety points (AASHTO, 125).

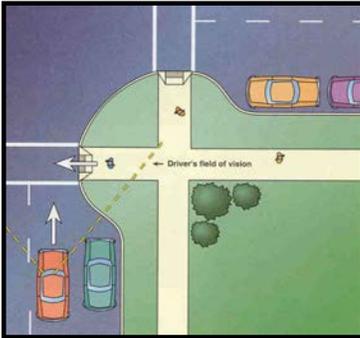


www.pedbikeimages.org / Dan Burden

### SHORT MEDIAN

An island in the center of a road that physically separates the directional flow of traffic. Rather than extending the length of the roadway, these are only long enough to accommodate a pedestrian crossing refuge or to alert drivers of entry into a district of slower traffic speeds.

## ADDITIONAL NON-MOTORIZED TRANSPORTATION TOOLS



(AASHTO, 74)

### CURB EXTENSION

Curb extensions placed at mid-block locations or intersections which narrow the street to provide visual distinction and reduce pedestrian crossing distances. These extensions help to provide a clear visual signal to drivers that a crossing is approaching, and makes waiting pedestrians more visible, and can help to define parallel street parking areas. They narrow the appearance of the street and can be attractive when landscaped (AASHTO, 41).



www.pedbikeimages.org / Dan Burden

### CHOCKER

Curb extensions placed at intersections or mid-block locations which narrow the streets width by narrowing the lanes. They also provide a visual signal to drivers that a pedestrian crossing is approaching. The narrower street can be attractively landscaped. (AASHTO, 41).



www.pedbikeimages.org / Dan Burden ITE

Pedestrian Bicycle Council

### RAISED INTERSECTION

Raised (or Tabled) intersections provide the advantage of slowing vehicles at critical locations for pedestrian crossing activity. They are many times paved with contrasting material to the roadway. These intersections are clearly designed for the pedestrian which causes motorists to slow and yield the right-of-way to pedestrians (Pedestrian and Streetscape Guide, 173).



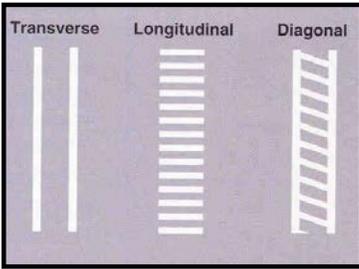
## ADDITIONAL NON-MOTORIZED TRANSPORTATION TOOLS



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### ON-STREET BIKE LANE

An area reserved in the roadway for bicycles. Bike lanes are usually four feet minimum in width and are located on the outside edge of the road. They are usually delineated with a stripe on the road.



(AASHTO, 81)

### CROSSING

The part of a roadway at an intersection that is included within the extensions of the lateral lines of the sidewalks on opposite sides of the roadway, measured from the curbline, or in the absence of curbs from the edges of the roadway, or in the absence of a sidewalk on one side of the roadway, the part of the roadway included within the extension of the lateral lines of the sidewalk at right angles to the centerline. Also, any portion of a roadway at an intersection or elsewhere that is distinctly indicated for pedestrian crossing by lines or other markings on the surface (AASHTO, 123).



www.pedbikeimages.org / Dan Burden

### SPECIAL PAVING

Alternative road surfaces, such as colored concrete or special pavers, can be used along the sides of the street or at intersections to break up the visual expanse of pavement (AASHTO, 41).



www.pedbikeimages.org / Dan Burden

### GATEWAY

Signs such as “Residential Street,” and “Local Access Only,” or monuments that identify neighborhood districts can be used to supplement the above techniques (AASHTO, 40).

“Image Library.” Pedestrian and Bicycle Information Center. 01 Dec. 2004 (www.pedbikeimages.org).

American Association of State Highway and Transportation Officials. Guide for the Planning, Design, and Operation of Pedestrian Facilities. Washington D.C.: AASHTO, 2004.