

Pipestone Township

~In the heart of farm country

MASTER PLAN

2007



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The Pipestone Township Planning Commission recommended this plan for adoption on May 21, 2007. The Pipestone Township Board of Trustees adopted this plan on June 11, 2007.

**This Plan was prepared with assistance from the
Southwest Michigan Planning Commission
*The Regional Planning Agency for Berrien, Cass and Van Buren Counties***

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EXECUTIVE SUMMARY

Pipestone Township is currently known for its agricultural heritage and rural life style; however, Pipestone Township is expected to see an increase in population. A mix of country living and agricultural production currently co-exists. However, the influx of people seeking “country living” is dependent on the continued existence of a country living atmosphere. If this atmosphere is compromised, those seeking it will look elsewhere and those who sought it may leave. It is critical that the Township recognize the compatibilities and incompatibilities of country/rural living and agricultural production. This master plan is an attempt to address the current and anticipated future conflicts between and among changes in land uses and to set the Township on a path to best utilize and/or preserve their most valuable resources.

The State of Michigan is fostering the preservation of farmland through policies and initiatives. This presents a challenge to townships, like Pipestone, and their residents. Orderly growth and prosperity are goals of all. Yet, an individual’s right to pursue the benefits of their land can be at conflict with the community’s goals. A balance must be found. The Master Plan is a statement of a common vision for the Township’s future. This Master Plan sets a course to follow for the next decade.

The current citizens of Pipestone Township wish for the township to retain the characteristics of a residential and rural farm-based life for its future residents. Their vision is that Pipestone Township be a haven for the quality of life befitting those who seek refuge from the urban congested work environment of nearby cities. The Pipestone Township Master Plan sets forth the following goals for the future:

- To protect and preserve the rural character of the Township and promote agri-tourism opportunities
- To respect the natural environment and promote the responsible, sustainable use of natural resources and open spaces for present and future populations
- To encourage a broad range of single family housing options and prices in attractive and well-planned residential areas
- To encourage a diverse local economic base in planned areas with infrastructure
- To provide adequate transportation infrastructure to meet future demands
- To maintain a responsive and cost-effective township governance that provides a high level of public safety, promotes a disaster resistant community and cooperates with and promotes the most effective system of education and educational facilities possible

This plan should be reviewed at least every year and updated every five years as data and circumstances change.

INTRODUCTION

This comprehensive master plan was created to guide Pipestone Township decisions and to accomplish the goals set forth for achieving the shared community vision of the future. The plan's goals and objectives are based on the following community vision.

“To preserve and protect the rural character and agricultural base of Pipestone Township while providing compatible economic, educational and residential opportunities.”

This master plan describes the broad vision for Pipestone Township's future. The plan reflects the core philosophy that directs development in the township. The plan will be used to weigh both public and private development proposals against the community goals. Decisions regarding such issues as land use development and budget priorities should be made in accordance with this master plan.

This master plan is a compilation of goals, policies, and recommendations for each of the subject areas it covers. **Goals** are conceptual, broad, and long range. **Objectives** are more specific recommendations that will help to achieve the goals. **Action Strategies** define the specific actions needed to accomplish the overall goal and objectives. Planning for the future allows the citizens opportunity to express their preferences for what they envision the township to be physically, socially and economically. The master plan serves as the basis for decisions by the Planning Commission and the Pipestone Township Board. The goals for future land use patterns are expressed in the master plan.

The Master Plan serves as the basis for zoning and other land use decisions. Michigan law (P.A.184, 1943 as amended) requires that the township zoning ordinance be based on a master plan designed to promote public health, safety and the general welfare of the community. It is designed to help protect natural features, community assets and land uses deemed as important to the community. It provides a comprehensive view of the existing conditions and the vision of future land uses. It directs and informs citizens, owners and developers about the direction of Pipestone Township's future. In addition, in August of 2003 the Michigan Land Use Leadership Council issued its final report for identifying trends, causes and consequences of urban sprawl and its recommendations to minimize the negative effects of current and projected land use patterns on Michigan's environments and economy to create sustainable and livable communities. Its conclusion is summarized in the statement: “Government policies have irreversibly converted valuable farmland, wildlife habitat and open space to support development at a pace that far exceeds the needs created by population growth. Sprawl had added to the cost of constructing and maintaining public infrastructure as it serves a less dense population.”

The Council established three fundamental goals for land use reform in Michigan:

- Manage our land resources to create sustainable economic prosperity.
- Maintain the integrity of environmental and cultural assets to sustain a quality of life that Michigan residents can point to with pride and pass on as a legacy to future generations.
- Make public land use decisions that result in a more socially equitable distribution of benefits to all Michigan residents.

Zoning and land use decisions by the Pipestone Township Planning Commission and the Township Board should be consistent with the goals and objectives of this Master Plan. In general, the concept of “smart growth”, with its emphasis on preserving open space, natural resources and existing agricultural activities, should be the prevailing guide for land use decisions in Pipestone Township.

PLAN DEVELOPMENT METHODOLOGY

Pipestone Township with the assistance of the Southwest Michigan Planning Commission (SWMPC) engaged in analysis, assessment, public vision/survey, goal and implementation plan formation. It is important to note that the layout of the Master Plan does not reflect the sequence of the plan's development. The conclusions (goals, objectives, action strategies and future land use) are presented first in the Master Plan and the supporting analyses and public input which was used as the basis for the conclusions are presented towards the end of the document.

The development and adoption of this plan met the requirements in the **Michigan Township Planning Act 168 of 1959, as amended**, (including 2001 amendments, 2006 amendments).

Involving the public was a high priority during the planning process. The steering committee was comprised of individuals that represented diverse interests in the Township. The steering committee along with the Planning Commission and Township Board provided invaluable input during the plan development. To evaluate the present conditions in Pipestone Township and to develop goals and objectives for the future vision and development of Pipestone Township, the techniques described below were utilized. Other techniques were used to specifically get input from the public such as a mail survey, workshops, an open house, and a formal public hearing. Below is a description of many of the methods utilized during the planning process:

Analysis of Demographic Reports from the U.S. Census Bureau and the State of Michigan were consulted to determine the current needs and potential future needs of the Township. Comparisons of other townships with similar populations and demographics were done. The demographics provide a realistic baseline from which population and socio-economic growth can be projected. It is generally assumed that the population of Pipestone Township will grow over the next decade.

On-site observations were made. These observations provided a better understanding of the character and nature of the township. Windshield surveys along the major roads in the township helped to distinguish areas of rural and commercial/industrial activities. These surveys reinforced the perceptions of pastoral settings and idyllic country living.

Steering Committee meetings were held with members who were selected to represent a variety of stakeholders such as contracted agency representatives, municipal and business leaders, members of the agricultural community, and the general public. The Steering Committee's role was to assist the SWMPC in creating a new vision and future direction for the Township. Information and ideas generated at meetings of the Steering Committee and with the public are incorporated throughout the Master Plan and are the foundation for the new vision, which includes a mission statement, goals, objectives, and recommendations for an action plan.

A ***Community Survey*** was conducted by mailing survey forms to 762 household units identified in a list provided by the Berrien County Planning Department. One hundred sixty seven responses were received. The response rate was 21.9%. The results of that survey were

evaluated and are reflected throughout the report. The complete survey results are included in the Appendix.

Visioning Sessions were held with the Steering Committee on June 9, 2005 and the general public on June 23, 2005 to develop an understanding of the needs and desires of the individuals living in the communities and neighborhoods of Pipestone Township. Seven topics were presented at the visioning sessions with the same questions asked for each: 1) What I like about Pipestone Township; 2) What I don't like about Pipestone Township, and 3) What I would like to see in the future for Pipestone Township. The results of this visioning session can be found in the Appendix.

A ***Presentation to Township Board of Trustees*** was given by SWMPC on January 8, 2007. The Township Board was asked to read and comment on the proposed plan and future land use map.

An ***Open House Meeting*** was held on February 5, 2007 at the new Pipestone Township Hall to present the proposed plan and the future land use map. This event was publicized in the local newspaper. A few comments were received and incorporated into the plan.

Access to the Draft Plan was ensured by placing copies of the plan at the local library and a copy was also made available by contacting the Township Clerk. In addition, the draft plan could be downloaded from two websites (Pipestone Township and the SWMPC websites).

A ***Public Hearing*** was held by the Planning Commission on May 21, 2007. At the end of the public hearing, the Planning Commission recommended adoption of the plan by the Township Board. A notice for this meeting was included in the local newspaper as required by state law.

Neighboring Jurisdictions and the County Planning Commission were notified about the planning process and then given the opportunity to review and comment on the proposed plan. No comments were received from this process. This process is required by state law. The following jurisdictions were notified and sent proposed and final copies of the plan: Bainbridge Township, Benton Charter Township, Keeler Township, Oronoko Township, Pokagon Township, Silver Creek Township, Sodus Township, Eau Claire Village, Berrien County and Cass County.

Plan Adoption: The Township Board adopted the plan by resolution on June 11, 2007 at its regularly scheduled meeting. The resolution is on file with the Township clerk.

TOWNSHIP VISION

Vision Statement

Pipestone Township developed a community vision to guide the development of the goals and objectives in the master plan. The vision is a general statement that describes the direction that the township would like to move in the future.

“To preserve and protect the rural character and agricultural base of Pipestone Township while providing compatible economic, educational and residential opportunities.”

Goals, Objectives, Action Strategies

The following is a list of goals that were developed based on input from the steering committee and from the public via the survey and visioning session. These goals will be the foundation for setting specific objectives and action strategies to reach a future common vision for the Township.

- To protect and preserve the rural character of the Township and promote agri-tourism opportunities
- To respect the natural environment and promote the responsible, sustainable use of natural resources and open spaces for present and future populations
- To encourage a broad range of single family housing options and prices in attractive and well-planned residential areas
- To encourage a diverse local economic base in planned areas with infrastructure
- To provide adequate transportation infrastructure to meet future demands
- To maintain a responsive and cost-effective township governance that provides a high level of public safety, promotes a disaster resistant community and cooperates with and promotes the most effective system of education and educational facilities possible

Next each goal is presented with specific objectives and action strategies needed to implement the goal and ultimately the community vision.

Goal: To protect and preserve the rural character of the Township and promote agri-tourism

Objectives:

- ❖ Participate in Berrien County’s Farmland and Open Space Preservation Program
- ❖ Encourage landowners and farm operators to continue using the land for agricultural purposes
- ❖ Discourage fragmentation of productive farmland for non-farming purposes, when possible
- ❖ Limit industrial and commercial growth to designated areas along M-140 and areas with adequate infrastructure for this type of development
- ❖ Promote agri-tourism as a means of preserving the agricultural history of the township

Action Strategies:

- o Identify areas with significant soil characteristics or agricultural history that may qualify for Berrien County’s farmland and open space preservation program
- o Designate an agricultural preservation zone to allow landowners to voluntarily participate in the County Farmland and Open Space Preservation Program
- o Modify Pipestone Township zoning regulations to allow incentives for open space preservation in new housing developments
- o Create additional zoning categories to accommodate land preservation techniques, such as a water quality overlay district, a recreation/open space zone and Planned Unit Developments (PUDs) with minimum open space requirements
- o Review and adjust if necessary current minimum/maximum lot size and coverage standards in the zoning ordinance
- o Utilize sliding scale zoning to allow landowners splits while decreasing the fragmentation of farmland
- o Develop zoning policies that encourage commercial/industrial development only in areas that are planned with adequate infrastructure

Goal: To respect the natural environment and promote the responsible, sustainable use of natural resources and open spaces for present and future populations

Objectives:

- ❖ Retain natural areas for wildlife native to the region through the use of open space zoning and other techniques to preserve a connected system of open space
- ❖ Consider the establishment of a township park or parks
- ❖ Maintain or improve surface and groundwater resources
- ❖ Limit development in sensitive areas such as floodplains and wetlands

Action Strategies:

- o Utilize the soils, wetlands and other maps to identify proper places for more concentrated growth
- o In the zoning ordinance, provide incentives to developers to utilize open space zoning to cluster houses and protect natural resources within a development
- o Improve site plan review standards to ensure that water quality and natural resources are protected whenever possible (for example – require minimal changes in topography to maintain the natural hydrology of the site)
- o Ensure the site plan review process requires all new developments to be reviewed by the County Drain Commissioner for conformance with county guidelines on storm water management
- o Encourage developers to use Low Impact Development techniques that will help to preserve the natural hydrology of the site
- o Establish an inventory of natural resources, environmentally sensitive areas and historically significant features that need special attention and protection in Pipestone Township
- o Allow for Planned Unit Developments (PUDs) and require a minimum open space area to be protected in each PUD

- o Review and adjust if necessary the current minimum/maximum lot size and coverage standards in zoning
- o Enact zoning standards (such as a water quality overlay district) to reduce pollutant runoff into surface waters and to discourage intrusive developments on environmentally sensitive areas, floodplains, wetlands, streams, surface waters and groundwater
- o Evaluate lands in the Township that would be suitable for a township park
- o Encourage agricultural operators to utilize best management practices to lessen the impacts on natural resources and water quality
- o Support infrastructure policies and decisions that support compact and mixed use development and infill, while discouraging fragmentation, leap frog development and consumption of open space

Goal: To encourage a broad range of single family housing options and prices in attractive and well-planned residential areas

Objectives:

- ❖ Encourage a broad range of single-family housing options in planned, designated residential areas while protecting rural character and natural resources
- ❖ Promote walkable communities by planning for higher density housing where residents have access to services and infrastructure
- ❖ Encourage a broad range of housing prices for potential residents

Action Strategies:

- o Evaluate soils and natural resources to determine the best places in the township for higher density housing developments
- o Create a new zoning category for multi-family residential development
- o Review and adjust if necessary minimum/maximum lot sizes and lot coverage minimums
- o Consider allowing mixed use of residential and commercial/retail in PUDs to promote walkable communities
- o Set minimum open space requirements for Planned Unit Developments
- o Provide for incentives for open space developments that preserve natural areas or provide community recreational facilities
- o Encourage new developments to plan for pedestrians by providing trails and/or sidewalks
- o Ensure site plan review standards for new developments protect natural resources and water quality
- o Encourage developers to utilize Low Impact Development techniques to minimize impacts to natural resources and water quality
- o Ensure that new residential development is adequately buffered from agricultural land uses to reduce conflicts (buffers should be on the residential land, not the agricultural land)

Goal: *To encourage a diverse local economic base in planned areas with adequate infrastructure*

Objectives:

- ❖ Preserve the rural character and agricultural heritage by only allowing new commercial and industrial uses in designated, planned areas within the Township
- ❖ Promote agri-tourism as a growth sector

Action Strategies:

- o Identify higher density commercial and industrial development clusters adjacent to similar existing uses and major transportation arteries, such as M-140 and Pipestone Road into Eau Claire
- o Designate new zoning categories for commercial, office and industrial uses to better define uses allowed in certain areas
- o Consider allowing mixed use developments (residential and commercial/office/retail) around Eau Claire Village limits
- o Support existing and proposed agri-tourism efforts in the township and surrounding communities

Goal: *To provide adequate transportation infrastructure to meet future demands*

Objectives:

- ❖ Maintain good, safe roads for connecting residents with the services and facilities they need
- ❖ If feasible, provide or promote alternative means of connection for those not able to drive individual cars

Action Strategies:

- o Work with the Berrien County Road Commission to ensure good road access for the residents of Pipestone Township
- o Work with Berrien County Road Commission to evaluate and provide facilities for pedestrian and bicycle safety in the township
- o Establish and work with the Berrien County Road Commission on a township priority list of projects to improve local roads
- o Consider a local millage to support road maintenance and repairs
- o Publicize available transportation services (e.g. Berrien Bus) for township residents who are dependent on public transportation

Goal: *To maintain a responsive and cost-effective township governance that provides a high level of public safety, promotes a disaster resistant community and cooperates with and promotes the most effective system of education and educational facilities possible*

Objectives:

- ❖ Retain local authority and capability to decide township issues
- ❖ Coordinate and cooperate with other jurisdictions and agencies to provide adequate, cost-effective services and programs
- ❖ Coordinate and cooperate with neighboring jurisdictions and the County Emergency Management Office to provide police, fire and emergency response services
- ❖ Coordinate and cooperate with the public school system

Action Strategies:

- o Focus public investments in roads, sewers, public institutions and water supplies to first upgrade and maintain infrastructure already in place
- o Investigate cost-effectiveness of joint purchasing of supplies and materials with other municipalities or agencies
- o Continue sharing police, fire and ambulance services with surrounding communities
- o Participate in the Berrien County's Disaster/LEPC Committee through the Office of Emergency Management
- o Continue to participate in the County's Hazard Mitigation Plan and begin enacting the recommendations in the plan that are applicable to Pipestone Township
- o Initiate more communication between the township and the school system

FUTURE LAND USE

Future Land Use Alternatives

Based on public input there is a desire for maintaining rural character, preserving farmland and concentrating growth (especially industrial and commercial) in appropriate areas. With the prime farmland and farmland of local importance (based on the soil survey), farmland preservation efforts should be focused in the north and eastern part of the township.

Three alternatives for future land use were considered during the planning process. The following pages explain the three alternatives and then discuss in detail the selected alternative.

Alternative #1 – Keep the 1987 future land use map (see map on next page). At the time of this plan’s development, the future land use map that was in effect was adopted in 1987 as part of the “Pipestone Township General Development Plan.” It gives general indication to where the township sees areas of growth and change. In the 1987 Projected Future Land Use map there are four broad future land use categories identified. The four categories are agricultural, residential, commercial/industrial and recreational. Most of the township was planned for agriculture with some residential in the northwest corner of the township and around the intersection of Park and Shanghai Roads. Commercial and industrial areas were planned near the Village of Eau Claire and along M-140 near the M-62 intersection. Recreational areas are planned around Pipestone Lake and in section 16 of the township (near the intersection of Naomi and Old Pipestone roads).

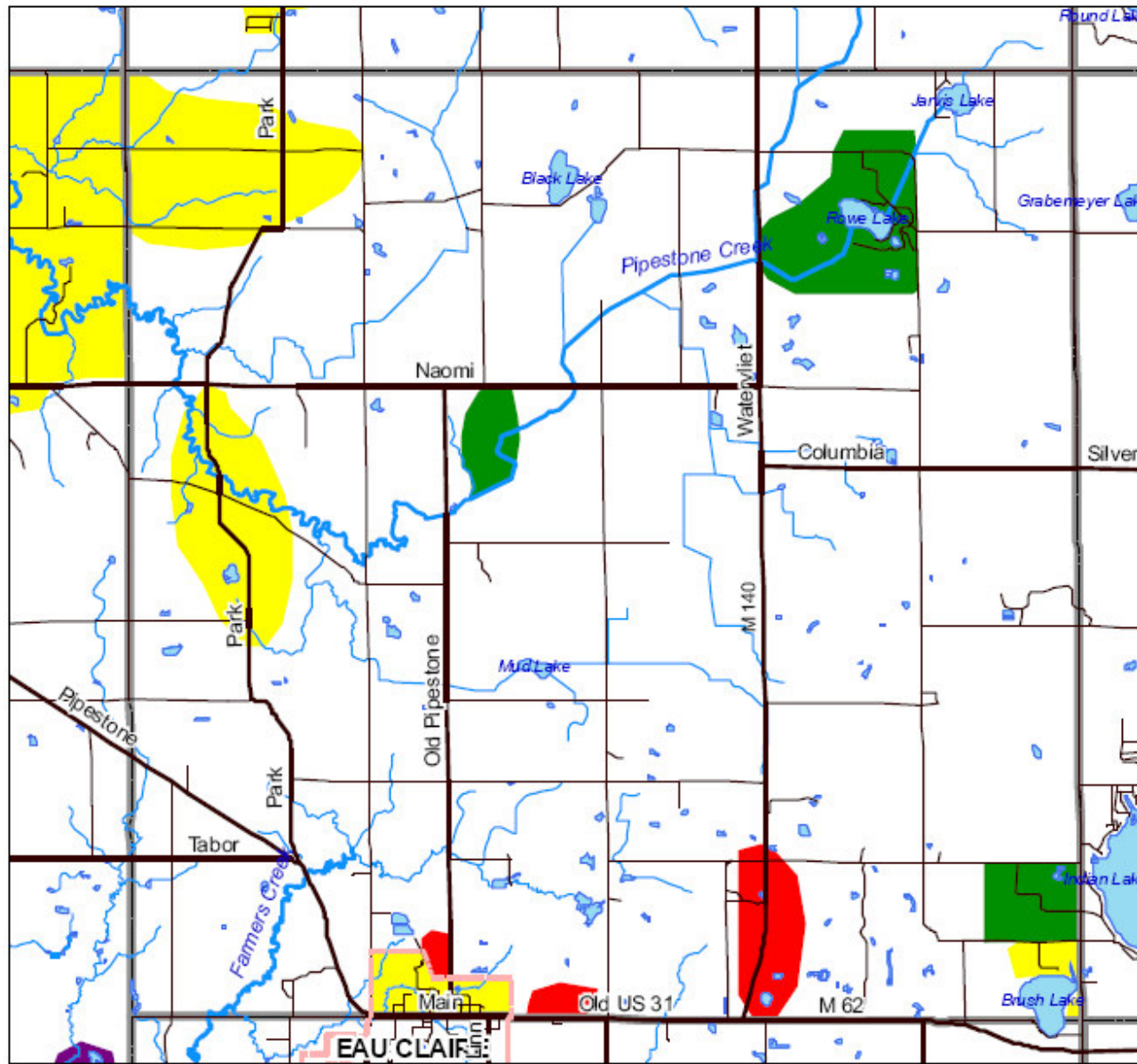
The following table shows the acreage and percent of the township in each future land use category.

1987 Future Land Use District	Area (acres)	Percent of Township
Residential	1,364.28	5.98%
Commercial/Industrial	326.94	1.43%
Agricultural	20,278.8	88.92%
Recreational	835.15	3.66%
Total	22,805.17	100%

*calculations do not include the Village of Eau Claire.

In the 1987 Future Land Use Map, the categories are too broad and leave too many options for interpretation. Better definitions of categories and corresponding uses should be identified. Further there are several areas on the 1987 future land use map that are built up either with commercial or residential uses and are planned for agriculture. It is apparent that this map will not be a good guide for the future of Pipestone Township.

Pipestone Township Future Land Use (from 1987 Twp Master Plan)



Legend

- Residential
- Commercial/Industrial
- Industrial
- Recreational
- Agricultural

Data Source:

Base Map: Michigan Center for Geographic Information, Framework v4
 Pipestone Township Future Land Use: Pipestone Township Master Plan, 1987
 Berrien County Future Land Use, 2005

Prepared November 2006

**Southwest Michigan
 Planning Commission**

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Alternative #2 – Allow for slow to moderate growth with protection of natural and water resources. Consider expanding the categories on the future land use map to allow for different densities of housing in certain areas such as multiple family housing. High density housing should not be encouraged unless municipal sewer and water services are extended to the area. Include a water quality protection overlay district and a recreation/open space district to protect water resources and sensitive areas.

Alternative #3 – Allow for slow to moderate growth with protection of natural resources and farmland. Same as alternative #2 except areas in the township are designated as agricultural preservation to allow for landowners in this area to access the county’s farmland and open space program. Also in the agricultural preservation area, sliding scale zoning could be used to limit the fragmentation of large parcels.

Selected Future Land Use Alternative

Alternative #3 is the chosen alternative for Pipestone Township. The township would like to see slow to moderate growth with the protection of natural resources and farmland. Growth is encouraged mostly around the Village of Eau Claire and in clusters on M-140. Note, growth is not encouraged along the entire M-140 corridor because that would cause the loss of rural character and may present problems with too many access drives along the major highway. It would be better to have the growth occur in planned clusters along M-140 to preserve rural character. Some residential areas have been expanded in the township to accommodate existing residential development along Pipestone Road, Naomi Road and northwest of Jarvis Lake. Multi-family has been added to accommodate existing multi-family uses near Indian Lake Golf Course and north of M-63 east of Eau Claire Village. However, additional multi-family should only be considered if soil conditions are appropriate or if municipal services are extended to these areas. An Agricultural Preservation district was added to designate lands that would be eligible for Farmland and Open Space Preservation Programs. In addition, the recreational category was expanded to include open space areas with significant natural features. Lastly, a water quality overlay district was added to all streams and creeks in the township to protect water quality as new development occurs in the township. See the Pipestone Township Future Land Use Map 2006-2021 for the locations of the different land use categories in the township. Following is a description of each land use category or district presented on the Future Land Use Map.

Future Land Use District	Area (acres)	Percent of Township
Residential	2,171	9.52%
Multi-Family	64	0.28%
Commercial/Industrial	498	2.18%
Recreational/Open Space	1,874	8.22%
Agricultural	11,720	51.39%
Agricultural Preservation	6,479	28.41%
Total	22,806	100%

*calculations do not include the Village of Eau Claire.

Residential

The goal of this district is to provide areas for residential growth. With the soils in Pipestone Township, lots smaller than one acre should only be considered if the soils are suitable for septic systems or if there is an extension of municipal sewer services. However, currently there are no plans to extend municipal sewer into the township. The future land use map designates 2,171 acres or 9.52% of the township as residential.

The types of uses allowed in this district are single family homes. The preservation of open spaces and natural features should be encouraged in new developments (site condominium or planned unit development projects). One tool to ensure that natural features are preserved is to encourage the use of conservation or open space developments (see Appendix 1). The community survey showed strong support for these types of developments (64% of the respondents preferred the conservation development over the traditional sub division development). In addition, any new developments should try to minimize changes to existing hydrology on the site through the use of techniques such as preserving natural topography to the extent possible, maintaining tree cover, utilizing native plant species for landscaping, and preserving wetland and floodplain areas. There is also strong community support for new developments to construct bike paths, parks and sidewalks.

Multi-Family

The goal of this district is to allow for multi-family uses, such as duplexes and small apartment buildings. The current district on the future land use map incorporates areas that have existing multi-family uses. These areas can provide a place for lower-income residences to be established. Expansion of multi-family will most likely depend on the capacity of the soils for septic or on the extension of municipal sewer and water services. The community survey shows that the most inadequate housing type in the township is assisted living units for seniors.

The types of uses allowed in this district should be duplexes or other multi-family units. The design and site layout of the multi-family development should fit into the surrounding character and maintain the rural feeling in the township as much as possible.

Commercial/Industrial

The goal of this district is to provide areas for commercial and industrial uses. These areas are located near the Village of Eau Claire and in clusters on M-140.

The types of uses allowed in this district are retail, offices, light commercial and light industrial. Because no municipal sewer and water services extend into the township, heavy industry and large box retail stores are not well suited for these areas. In addition, the community survey shows that there is not much support for large retail stores locating in the township. Any new commercial or industrial use should try to minimize changes to existing hydrology on the site through the use of techniques such as preserving natural topography to the extent possible, maintaining tree cover, utilizing native plant species for landscaping, and preserving wetland and floodplain areas.

Agricultural

The goal of this district is to allow for agricultural activities and serve as a transition zone between residential areas and agricultural areas. The majority of the township is in this district. According to the public input during the planning process, the township has a desire to remain rural in nature. This district should maintain a rural feel by requiring houses and structures to be placed back off the road and to have large road frontages.

The types of uses allowed in this district are agriculture and related activities and single family houses. It will be very important for single family residential homes or developments to be adequately buffered with vegetation or topographical relief from any agricultural activities to reduce conflicts. It should be the responsibility of the new residential development to install and maintain the buffer between existing agricultural uses.

Agricultural Preservation

The goal of this district is to preserve unique and important farmlands in the township. This district was chosen based on the location of orchards/vineyards (from the Land Cover 2000 Map), location of unique and prime farmlands (from the Prime Farmland Map) and the location of large parcels. The community survey shows strong support for farmland preservation. About 74% of the survey respondents feel that prime farmland preservation should be a top priority for the township. There is also support for participating in the County's Farmland and Open Space Preservation Program (45% agree or strongly agree). The survey also shows support for preserving agricultural land with zoning requirements (45% agree or strongly agree). The land in this district is most suited for the County Farmland and Open Space Program. In addition, sliding scale zoning can be utilized in this district to allow for development, but to keep large parcels in tact. Single family housing should be limited to decrease conflicts between new residents and farming operations.

The types of uses allowed in this district are agriculture and related activities with limited single family housing.

Recreational/Open Space

The goal of this district is to plan for recreational and open spaces in the township. Two of the areas are currently golf courses. Another area is mostly a private campground. The other areas are large complexes of wetland and forested wetland areas in the township. The wetland areas are not well suited for development. Natural features within open spaces have positive environmental benefits by helping to protect ground and surface waters through the reduction of soil erosion, flooding, and nutrient over-loading in water bodies. Further environmental benefits of these open spaces come in the form of the preservation of wildlife habitat, improved air quality, and noise reduction. The community survey indicates strong support for preserving the natural environment and open spaces. Seventy-six percent of the survey respondents agree or strongly agree that the preservation of the natural environment should be a top priority for the township.

The types of uses allowed in this district are active and/or passive recreational uses. Active recreational uses should only be allowed if the impact to the wetlands and natural features are minimal. Very limited development should be allowed in this district.

Water Quality Overlay

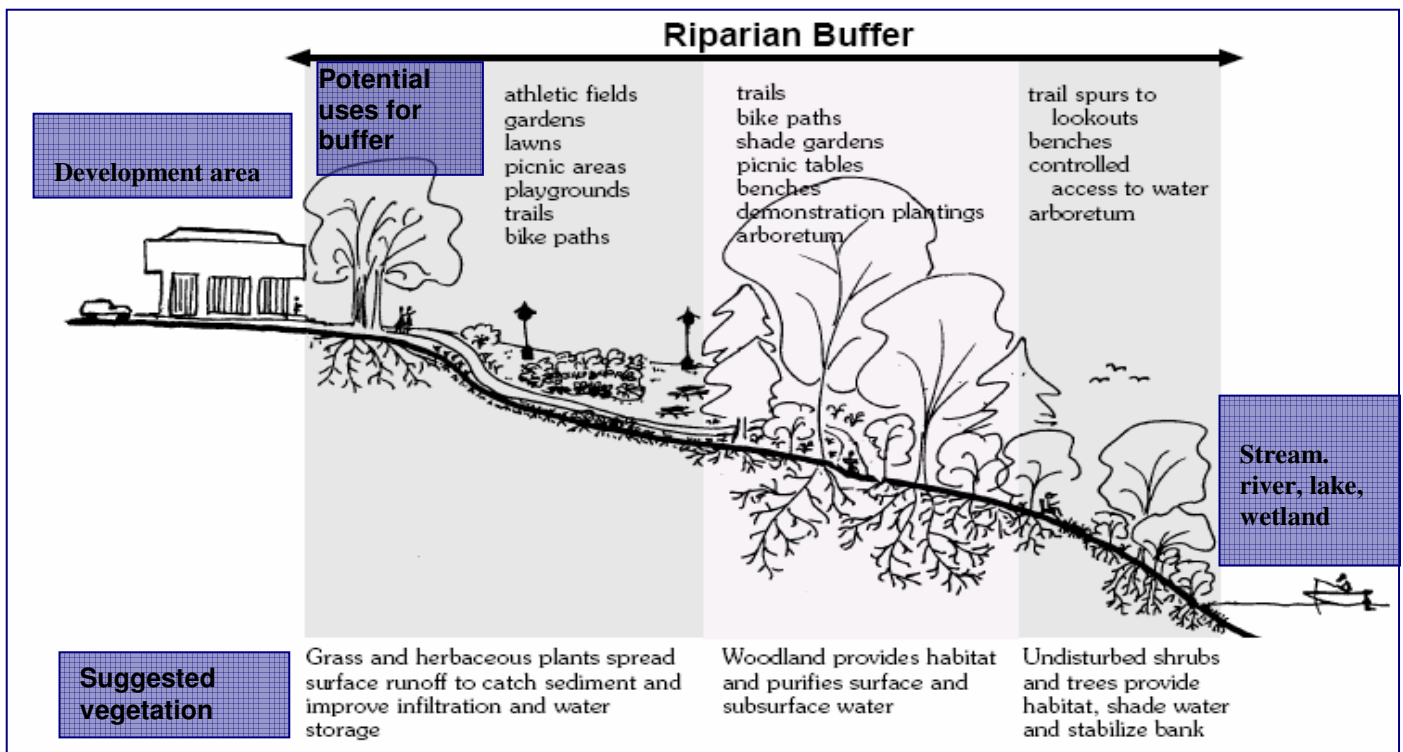
The goal of this district is to protect water quality. This is an overlay district and applies to the district underneath whether it is residential or commercial/industrial. The district should be set up with regulations that require new development to be set back from water bodies and a native vegetation strip left to filter runoff entering the stream or creek. The native vegetation strip should be at least 50 to 100 feet to improve water quality of runoff. Setbacks of buildings should be at least 100 feet, but may be more if wetlands, floodplains or steep slopes are present. Note that this overlay district will only apply to new development, not to existing development or to agricultural operations.

The intent is to protect and improve water quality, to support designated beneficial water uses and to protect the functions and values, which include, but are not limited to:

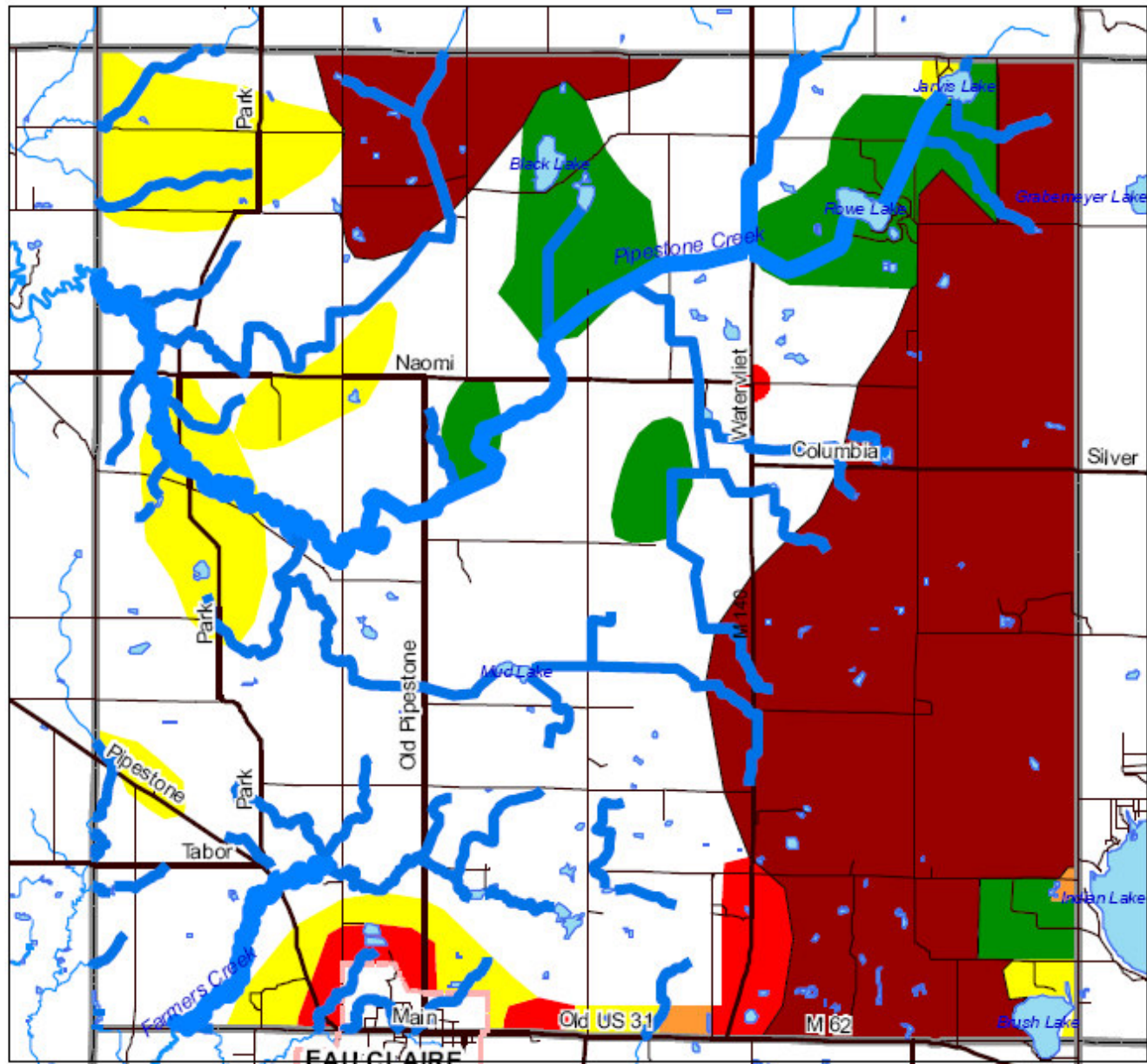
- Provide a vegetated corridor to separate protected water features from development;
- Maintain or reduce stream temperatures;
- Maintain natural stream corridors;
- Minimize erosion, nutrient and pollutant loading into water;
- Provide filtration, infiltration and natural water purification;
- Stabilize slopes to prevent landslides contributing to sedimentation of water features.

The land uses in this district are extremely restricted to protect water quality. Limited clearing for access to a water body may be permitted, but this should be a no disturb area for the most part.

The following is a graphic depicting a proper vegetated riparian buffer along a water body. This buffer is important for protection water quality, protect structures from flooding and to provide wildlife habitat.



Pipestone Township Future Land Use Map 2006 - 2021



Legend

- Residential
- Multi-family Residential
- Commercial/Industrial
- Recreational/Open Space
- Agricultural/Preservation
- Agricultural
- Water Quality Overlay

Data Source:

Base Map: Michigan Center for Geographic Information, Framework v4
 Pipestone Township Future Land Use: Pipestone Township Master Plan, 1987
 Berrien County Future Land Use, 2006

Prepared November 2006
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PLAN IMPLEMENTATION

Achieving a balance between over-development and under-utilization requires a plan of action that serves as the foundation for local decision-makers. The decisions are based on principles and policies agreed to by the community. Writing and adopting a master plan requires community participation and community inputs. The master plan expresses the community common good. Elected officials and decision makers are called upon to enact and follow ordinances, policies and procedures that protect and advance the common good of the community. These policies and procedures are implemented through the zoning, capital improvement plans and other actions of the township. Once adopted, the master plan should be continually reviewed and revised as proposed actions are implemented.

Zoning

Zoning laws are the local ordinances used to establish the legitimate rules for implementing individual actions in accordance with the established master plan. Zoning governs the definitions of acceptable land uses for each parcel of land within the township. Zoning also establishes the density and restrictions or conditions under which each particular land use can be best implemented to fulfill the common community goals and objectives. Zoning ordinances can dictate layers of activities or uses that can be built on a piece of land. Zoning is most commonly exclusionary in its applications. That means that certain activities or uses are restricted from or not compatible with other uses or activities within a specified area. No activity can impose an undue burden or economic hardship on its neighbors. There are certain enterprises and societal activities that are not compatible or acceptable with others in the community. The intent of zoning is to maintain a predictability to land use. This predictability can be good for both the developer who needs a clear set of rules and wants a level playing field among himself and his competitors, as well as the property owner who wants to maintain his investment. It is the legal basis to assure that each property owner will act in the best interest of himself, his neighbors and the community.

Typically, a jurisdiction, like Pipestone Township, is defined in a number of districts displayed on a map and enacted as part of an ordinance. Single family residential is usually the most restrictive zoning activity, not allowing commercial, industrial or multi-family dwellings. As the zoning category changes so does the uses and definitions within that category. Each subsequent zoning category allows less restrictive uses and sometimes all previous uses in that zone. However, more and more, communities are allowing for mixed uses (residential and retail/light commercial/office) to allow for a more walkable community with services and amenities near housing. Allowing for mixed uses can help to build neighborhoods that are walkable.

Many zoning techniques that will help Pipestone Township realize its objectives and goals in this plan are presented in the Appendix with a brief summary of the technique or program. These techniques include providing incentives for the Open Space Development Option, requiring minimum open space requirements with Planned Unit Developments, sliding scale zoning in the agricultural preservation district, water quality overlay district, and site plan review standards for protecting water quality.

There are also several programs and techniques that are not zoning related that may help Pipestone Township achieve its vision for the future. The appendix provides a brief description to introduce the concepts or programs. These include low impact development, Berrien County Farmland and Open Space Preservation Program, and private landowner voluntary options (conservation easements, etc). Further, the Appendix also has recommendations for hazard mitigation and information on increasing agri-tourism efforts.

Capital Improvement Plan

A capital improvement plan is the planning, scheduling and funding of specified projects and activities that implement the goals and objectives of Pipestone Township. The township should identify and prioritize projects and actions as compatible with this master plan. The capital improvement plan lays the foundation of priorities for future capital spending. It assists the township in their desire to be fiscally responsible while continuing to progress toward a shared vision that is laid out in the master plan.

Pipestone Township does not maintain its own roads. The Berrien County Road Commission has authority to build and maintain all roads not part of Act-51 eligible entity jurisdictions. Cities such as Benton Harbor and Niles are local examples of Act-51 entities. The Road Commission must plan and implement road repairs and upgrades for all of the non-urban roads in the county. Priorities are set by the Road Commission based on a number of factors, including but not limited to, level of service, safety, other road conditions, and project readiness, to name a few. Pipestone Township officials should maintain communication with the Road Commission on setting priorities on road projects.

Fiscal Issues

Pipestone Township does not have an unlimited source of funds available to it. Therefore, it must allocate its limited resources in the manner that best meets the community needs and wishes. Revenues and opportunities to increase current revenues continue to decrease in the face of escalating costs and deteriorating assets. Often, pressure for new tax revenue sources comes from proposed developments that are not in accord with the vision, goals and objectives of this plan. The Master Plan is the roadmap for dealing with these conflicting situations. It can give some guidance about what is important for the future of the township.

Increasing housing or other commercial developments in the Township as a strategy to build tax revenue should be carefully researched. Recent research is showing that housing developments in particular often use more tax or public funds than they contribute compared to farmland which contributes more tax revenue than it receives in services. These recent studies are referred to “cost of community services” studies. COCS studies help address three claims that are commonly made in rural or suburban communities facing growth pressures:

1. Open lands—including productive farms and forests—are an interim land use that should be developed to their “highest and best use.”
2. Agricultural land gets an unfair tax break when it is assessed at its current use value for farming or ranching instead of at its potential use value for residential or commercial development.

3. Residential development will lower property taxes by increasing the tax base.

While it is true that an acre of land with a new house generates more total revenue than an acre of hay or corn, this tells us little about a community’s bottom line. In areas where agriculture or forestry are major industries, it is especially important to consider the real property tax contribution of privately owned working lands. Working and other open lands may generate less revenue than residential, commercial or industrial properties, but they require little public infrastructure and few services.

COCS studies conducted over the last 20 years show working lands generate more public revenues than they receive back in public services. Their impact on community coffers is similar to that of other commercial and industrial land uses. On average, because residential land uses do not cover their costs, they must be subsidized by other community land uses. Converting agricultural land to residential land use should not be seen as a way to balance local budgets.

**Summary of Cost of Community Services Studies in Michigan
Revenue to Expenditure Ratios in Dollars**

Michigan Community	Residential	Commercial & Industrial	Working and Open Lands	Source of Information
Marshall Twp, Calhoun County	1 : 1.47	1 : 0.20	1 : 0.27	American Farmland Trust 2001
Newton Twp, Calhoun County	1 : 1.20	1 : 0.25	1 : 0.24	American Farmland Trust 2001
Scio Twp	1 : 1.40	1 : 0.28	1 : 0.62	University of Michigan, 1994

In two townships, working and open lands had the best ratio of revenue to expenditures. In all three townships, working and open lands had a better ratio than residential development. Commercial and industrial land uses have a better ratio than residential in all three cases.

Smart Growth

Many communities are embracing the principles of Smart Growth. These principles align well with Pipestone Township's vision, goals and objectives. The basic principles of smart growth are:

1. Mix land uses
2. Use land efficiently
3. Create a range of safe, convenient, and affordable housing opportunities and choices
4. Creates walkable neighborhoods
5. Foster distinctive, attractive communities with a strong sense of place
6. Preserve natural lands, farmland, and critical environmental areas
7. Strengthen and direct development toward existing communities
8. Provide a variety of transportation choices
9. Make development decisions predictable, fair, and cost-effective
10. Encourage community and stakeholder collaboration in development decisions

Plan Updates

The master plan is an evolving and flexible document that will need to be updated as circumstances in the township change. The Pipestone Township Planning Commission should review the master plan every year to identify any areas where the plan is not working. An annual report from the Planning Commission should be created and delivered to the Township Board. Every five years, the Planning Commission and Township Board should update the plan if the circumstances warrant. If the plan is not in need of updating this should be recorded in the minutes of the Planning Commission and Township Board.

PUBLIC INPUT

Following is a summary of the ideas collected during visioning sessions with the steering committee and the general public. After each visioning topic summary is an analysis of the issue and an analysis of the responses from the community survey that relates to the issue.

1. ECONOMY/JOBS

What I like about Pipestone Township:

- Centrally located (US 31 connection is a boost)
- New home construction
- Agricultural/laid back/slow pace
- Less traffic
- Farm-tourism (Agri-tourism)
- Cost of living
- Small service and retail businesses
- Recreational jobs (golf courses)
- Variety

What I don't like:

- Increasing decline of Eau Claire
- Not a lot of job opportunities in close proximity
- Agricultural/seasonal
- Lack of housing developments
- Not many large employers
- Need bigger tax base
- Lack of any major attractions
- Dependent on outside areas for jobs
- No job incentives
- No high-income jobs
- Money doesn't stay in the Township

What I would like to see in the future:

- Commercial growth along M-140 and M-62
- Concentrated growth in specific areas (zoning)
- Enhance climate for subdivisions
- Improvements to attract people
- Increased infrastructure to handle future growth
- Protect ordinances (lot sizes, etc)
- Spin-off opportunities from agriculture (packing companies, etc.)
- Industrial Park
- More high paying jobs
- More jobs in the Township

In summary, the public visioning sessions expressed Pipestone Township's connectivity with its surrounding employment opportunities and its agrarian atmosphere as significant positives for

the township. The definite concern is the continuing decline of the Village of Eau Claire as an economic and physical point of interest. Also of concern is the lack of job opportunities within the township and in nearby communities. Equally seen as a problem is the diminishing of the economic and tax bases of the township. There was a strong sentiment toward controlling specific land uses and fostering growth patterns that are perceived as beneficial to the residents.

From the community surveys, the results were similar. One very significant community survey response is an overwhelming disagreement to any expressed need for a large retail type operation (like Wal-Mart, Meijer, etc.). By almost 4 to 1, residents indicated that they disagreed with the need to have a large box employer located within the township. The survey respondents were also less supportive of speculative infrastructure improvements, such as added sewer and water capacity, for future industrial development.

2. GROWTH/DEVELOPMENT

What I like about Pipestone Township:

- Positive development on M-140
- Nice topography
- Rural/agricultural atmosphere
- Able to be individualistic
- The current status of housing developments
- Low price of land

What I don't like:

- Spreading without a subdivision plan in place
- No rules for growth
- Loss of control from long-term residents
- Small lot splits/traffic impacts
- Mobile homes not in a designated park
- Soils are not conducive to growth
- Traffic control – need for shared access – curb cuts
- Changing tax categories/no retro tax
- Single-family housing is using up large acreage
- Not actively pursuing growth
- No rental units

What I would like to see in the future:

- Define “subdivisions”/rural development with common access
- Water and sewer expansion
- Concentrated development (planned)
- Maintain rural personality
- Commercial and industrial zone
- Power plant
- Upgrade utilities
- Common access from road instead of multiple driveways

It is quite interesting to note that the agrarian atmosphere and the positive developments along M-140 are cited as most attractive to the residents. They recognize the uniqueness of their

agricultural history and express a willingness to direct non-agricultural developments to specific areas in order to preserve the rural atmosphere. This view is supported by the expressed dislikes about the township. Every response implied concern about unfettered growth. But there is no clear indication of knowledge or acceptance of “smart growth” principles and practices. For the future, the respondents want to see definitions and policies that limit the conversion of farmland and open space to large tract residential developments.

The community surveys disagreed with the idea of locating “big box” retailers within the township. The respondents are also not supportive of speculative infrastructure additions to encourage industrial operations. The respondents agreed with the goal of preserving the rural, natural resources of the township. They expressed a willingness to manage growth to meet this goal but were not universally in support of using public monies to purchase or lease farmland for preservation.

3. AGRICULTURE/AGRI-TOURISM

What I like about Pipestone Township:

- Small farm marketers/non-commercial small growers
- Cherry Pit Spitting/Celebrations
- Allows hunting and recreational opportunities
- Good assets to develop
- Brings in non-residents’ money and exposes people to the area
- Provides a good economic base

What I don’t like:

- Farm equipment is too large for roads – creates dangerous situations
- Residential (non-ag) complaints about agricultural operations
- Farmers aging and retiring/kids don’t want to farm
- New farming operations difficult to afford (new start-ups)

What I would like to see in the future:

- Predict the decline of large commercial farms
- Local farmer’s market
- Continue celebrations of agriculture
- Don’t want to see fewer farms
- Increase niche markets
- Increase tourism/recreation

Small farms and local agricultural events are seen as positive attributes of the township. The unifying dislike in the township is the conflict between farming operations and non-farming population movements. In the future, many see the opportunity for farms to establish niche markets for their produce. These products could be exported to local produce sellers in other parts of Michigan or in Indiana. They could also attract people from outside the township to come into the township to buy their produce.

Community survey respondents overwhelmingly support preservation of rural character and natural resources of the township. It can be inferred that the residents wish to preserve the

affiliated rural features that are uniquely attractive about Pipestone Township. These include farmland, wooded areas, and water resources.

4. SCHOOLS AND YOUTH

What I like about Pipestone Township:

- No longer under court order for desegregation
- Rural setting of schools is attractive
- Many choices (private and public)
- Like small school opportunities (sports, etc.)

What I don't like:

- Continuing decline/lack of spirit/no local support
- Rated lowest on real estate website (a 5)
- Low quality/low paid teachers
- Too small of a system/not enough advanced classes offered for college prep
- Schools of choice
- Athletic driven decisions instead of academic driven
- Increasing costs to operate/decline in number of students
- No booster clubs
- Not enough tax base to support the schools

What I would like to see in the future:

- Supply high speed internet
- Regional county system
- Upgrade utilities
- Closings due to financial problems
- Regional elementary school in Township
- Need more recreation for kids

The perception for youth and education is that a rural, non-urban school atmosphere is best for education. It allows for more local choices in education and sports participation close to homes. Yet a major adult concern is expressed in the belief that student and parent participation in all school and extracurricular activities is declining. A significant concern expressed was the belief that funding for quality education in Pipestone Township is not sufficient. People recognize the continuing inclusion of technology in their lives. They want the education system to change to meet these expectations. Traditional teaching methods and administration need to be reevaluated, modified and supported. The public understands that the quality of the school system plays a significant factor in deciding where to establish family residence.

The community surveys rated the quality of the school system rather low in desirability as a place to live. This perception is very significant. It provides further evidence that the idealistic impression of the rural schoolhouse is not consistent with the real life situation. Often, families choose places to live based on the perceived quality of the school system that their children might attend. The education curriculum, programs and physical structures of the school system must meet some minimum perceived standards. Otherwise, the school system has a negative

impact on the future of the community and the community will not be successful in attracting young families.

5. TRANSPORTATION/ROADS

What I like about Pipestone Township:

- Close proximity to major roads
- Good diversity of roads
- Improving somewhat
- M-140 is a good road
- Dirt roads
- No roads
- No shoulders

What I don't like:

- Not enough funding for roads – no local millage
- Always patching, not repairing because of financial constraints
- Not enough dust control
- Tar and chip repair a waste of money
- Poor conditions

What I would like to see in the future:

- Develop a long-range plan with funding
- Pass local millage
- Better public transit especially for the elderly
- Local Asphalt plant
- Pave all roads
- Improve Tabor Road to better serve Village of Eau Claire and Sodus Township
- Add shoulders to roads (safety reasons)
- Bicycle Paths
- Road improvements (i.e. Bailey Road)

The transportation system, primarily thought of as the roads, is the basic system that affects each and every person as they travel to any destination. On the positive, there are many good federal aid eligible roads for the residents. There is convenient access to major highways and commercial destinations. But the perceptions change as they look at the local roads. With an acknowledged lack of funding, most are dissatisfied that local roads can only be patched and sealed, rather than reconstructed. Residents seem to understand that only with a local financial commitment, like a millage, will these roads be given the attention that they wish. Importantly, the residents would like to establish some type of township plan or priority list of projects for improving their local roads.

The community surveys most strongly consider road maintenance and repair as the top expenditures for local tax monies and local budgets. Providing for public transit, like buses, is not a topic widely supported. Also of particular note, a majority of respondents indicated that they would not use bicycle lanes/paths even if they were provided. The automobile is the

preferred mode of transportation. However, there is a desire expressed in the community survey to encourage new developments to construct trails and/or sidewalks.

6. NATURAL RESOURCES/RECREATION

What I like about Pipestone Township:

- Topography
- Woodlands
- Hunting/fishing
- Miles of streams already protected
- DNR boat launch on Black Lake

What I don't like:

- No parks
- Heavy soils limits development
- Floodplain limits development
- Railroad easement reverted to property owners instead of public use
- Lack of trail system (non-motorized)

What I would like to see in the future:

- More parks
- A trail system (for biking and walking)
- Fund set up to purchase wildlife areas (owned by Township)
- Protection of water quality (streams/rivers)
- Develop access to Pipestone Creek (south of cemetery on Park Road)
- Protect public access to Black Lake

The rural character of the township is what most people like best. It offers a diversity of amenities that all can relate to. The most common dislike is the lack of any type of local parks or a park system. There is also concern that the soils and floodplains limit development. Most people would like to see efforts and actions to preserve the surface waters of their rivers and streams. They equally would like to see bicycle and walking trails constructed in new developments.

The community surveys temper any proposals for building bicycle trails because of the slight majority who said that they would not use the facility. Also, they would not be willing to support their construction and maintenance through the township budget or taxes. The survey shows overwhelming support for protecting open spaces and natural and water resources in the township.

7. **HOUSING**

What I like about Pipestone Township:

Diversity in housing

What I don't like:

Failing septic systems

Small cheap housing

Township does not allow private roads – all roads must meet county standards

No rental units

What I would like to see in the future:

Need covenants/restrictions

Enforce ordinances (prevent blight)

More affordable housing

More single-family housing

Need multi-family homes that are attractive

Bring in architects that have a proven record to help guide development

Low impact development

In this final category, people expressed interest in having a variety of housing choices. Building should not be limited to large estate type developments. Options for smaller homes and multi-family dwellings should be encouraged. The biggest concern is failing septic systems in the township. This problem can be addressed through dwelling capacity limitations and good soils analysis. The future should be filled with better enforcement of existing and future ordinances, more affordable housing, lower impact developments and a variety of housing options. Housing prices will continue to move upward. People will find affordable, buildable land on which they can build houses that give them greater economic value.

The community survey results reflect the perception of Pipestone Township as primarily an agricultural and residential area. This future for land uses is quite acceptable to the residents.

HISTORICAL SKETCH

The following historical sketch is excerpted from the General Development Plan for Pipestone Township.¹ The first family to settle in Pipestone Township is identified as James Kirk, his wife, and seven children. This was in April of 1837 and the family lived in a cloth tent and pole shanty until neighbors from distant communities helped him erect a log cabin. Dr. Morgan Enos, the Township's first physician, also settled there in 1837. He hired Crawford Hazard and Nathaniel Brant to cut roads from Millburg. These gentlemen also settled in Pipestone Township to work for Dr. Enos. Robert Ferry, an Irish immigrant, is also recorded as having moved to the Township in 1837. Mr. Ferry eventually expanded his holdings to over 1,000 acres and was buried on his old homestead.

It was not until 1842 that Pipestone Township was a separate township. James Larue was elected as the first Township Supervisor and Morgan Enos was elected Clerk. In the early 1840's, William Boughton and Joab Enos laid out a village and called it Pipestone. Growth of the village was very slow. By 1846, the Township's population had grown to about 300. It was at this same time that the Village of Pipestone obtained a post office and William Boughton was the first Postmaster.

In 1850, a German settlement formed in the northeast part of the Township. William Hackstatt, Henry Stevens, and Henry Tulker came as a group with their families from Cincinnati. In 1853, the Village of Pipestone was renamed "Shanghai" after a breed of chickens that Dr. Enos was raising. The first merchant in Shanghai was John Garrow who owned a store, a smoke-house, and sawmill. James Haskins later took over the store and also served as Justice of the Peace. By 1880, Shanghai contained two stores, at least a dozen homes, a school, and two blacksmith shops. Shanghai's growth was slowed in 1881 when the railroad avoided the village and passed a mile or so to the west. It was at the location of the railroad that a new village named "Hartman," in honor of the farmer that donated the land, was started. Several stores and an express office were located in Hartman.

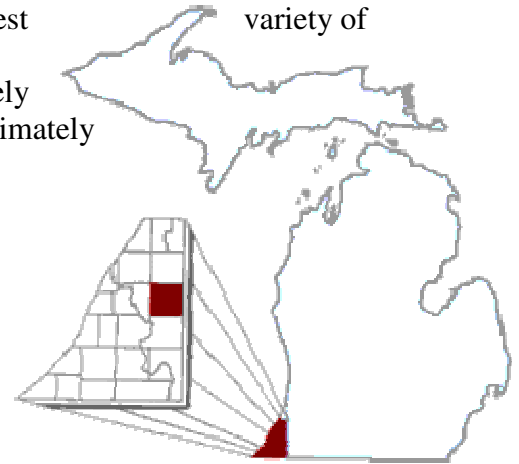
Two Township residents, Amos R. Green and Harvey Franz, self-taught archeologists, became well known throughout the state and were honored by the Michigan Archeological Society. William Teichman brought his Skyline Orchards into the spotlight in 1941 when he brought a new variety of peaches, Redhavens, to the market. William's son, Herbert, has carried on the family tradition by being a leader in introducing mechanical fruit harvesting methods to the fruit belt. The Teichman family is also well known for the official U.S. Weather Station they have operated for over 50 years.

¹ (This brief presentation of the early history of Pipestone Township is based on the book **Berrien Bicentennial**, 1976, by James T. Carney, portions of which are quoted or paraphrased hereafter without additional citation.)

PHYSICAL CHARACTERISTICS

Geographic Location

Pipestone Township is located in Berrien County in the southwestern corner of Michigan. The Village of Eau Claire is located in the southwestern corner of Pipestone Township and the northwestern corner of Berrien Township. Pipestone Township's borders are comprised of Bainbridge Township on the north, Cass County on the east, Berrien Township on the south, and Sodus Township on the west. This area is predominately rural and agricultural. The nearest urbanized centers are the cities of St. Joseph and Benton Harbor to the west and the city of Niles to the south. Niles is a part of the South Bend-Mishawaka, Indiana statistical metropolitan area. The Indiana cities of South Bend and Mishawaka offer the greatest variety of shopping, employment and influence to the township residents. The greater metropolitan area of Chicago, Illinois is approximately 100 miles west of the Township and the city of Detroit is approximately 200 miles east of the Township.

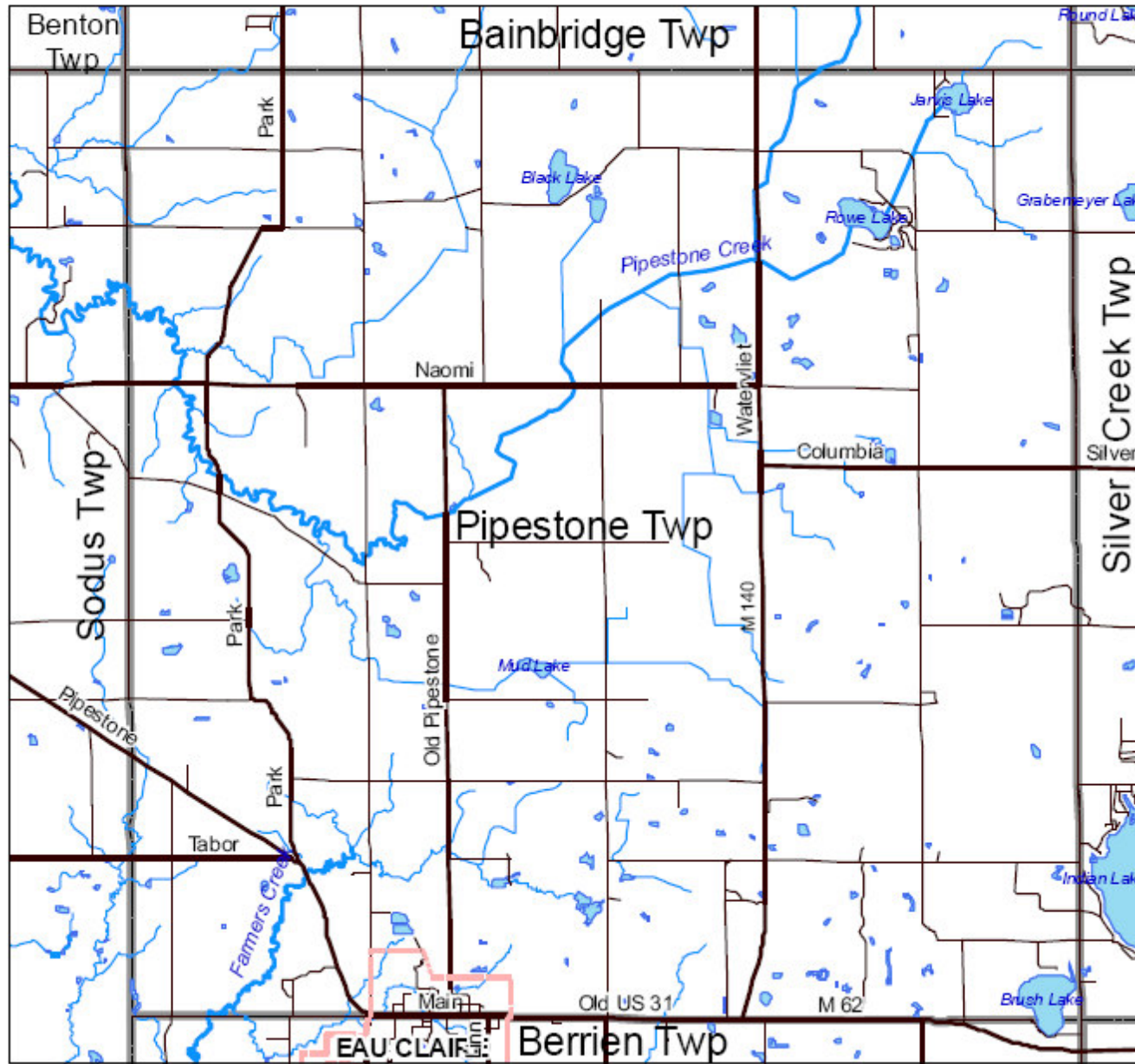


Climate

Pipestone Township's climate is moderated because of the close proximity to Lake Michigan. The following table displays general information about the Township's climate.

	<u>Jan</u>	<u>July</u>
Average Maximum Temperature	32°F	82°F
Average Minimum Temperature	18°F	61°F
Days over 90°F	11	
Days below 0°F	4	
Days of growing season	162	
Average annual rainfall	37 inches	
Average annual snowfall	70 inches	

Pipestone Township



Legend

 Townships

Data Source:

Base Map: Michigan Center for Geographic Information, Framework v4

Prepared November 2006
**Southwest Michigan
Planning Commission**
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Geology and Topography

Pipestone Township's elevation ranges from 620 feet above sea level in the Farmer's Creek area, to 870 feet above sea level on the central-eastern edge of the Township. The relief in the township is most pronounced in the Eastern and Western portions of the township with the center being relatively flat.

Pipestone Township is in the Southern Upland geophysical region of Michigan's Lower Peninsula. The township is characterized by the Berrien-Allegan highland section of this southern upland region that consists of areas of relatively strong relief. The township is part of the Valparaiso Moraine system with the ridges extended in a general northeast to southwest direction. The bedrock is mainly Coldwater Shale overlain with glacial drift. This glacial drift averages approximately 150 feet deep throughout the Township. Existing topographical features are due primarily to the effects of the glaciers. The advancing and retreating glaciers formed the gently rolling and undulating topography. The ridges formed in this manner are called moraines and consist of till which is a random mixture of silt, clay, sand, gravel, and rock fragments. Other surface formations created by the glaciers include outwash plains, lakebeds, and glacial spillways.²

Soils

The soils found in Pipestone Township are primarily sandy with a high protection of clay drift. Below are brief descriptions of the general soil associations in Pipestone Township.

Riddles-Ockley-Oshtemo Association: Nearly level to very steep, well drained, loamy soils on outwash plains, moraines, and till plains. Most of the soils in this association are farmed. Where the slopes are steep, these soils are used as woodland. The main problem in cultivated areas is erosion. Riddles and Ockley soils generally are fairly suited to well suited to septic tank absorption fields in areas where slopes are less than 12 percent. Oshtemo soils and other soils that have slopes of more than 12 percent are poorly suited to septic tank absorption fields. Oshtemo soils have poor filtering capacity. These soils are fairly to well suited to building site developments. Slope, shrink-swell potential, and low strength are the main limitations for building site developments.

Pella-Kibbie Association: Nearly level, poorly drained and somewhat poorly drained, silty and loamy soils on outwash plains, lake plains, and deltas. Most of the soils in this association are farmed. Some areas are left idle or are in woodland. Ponding is common in low areas. The soils in this association are well suited to cultivated crops, hay and pasture. The soils in this association are poorly suited to building site developments and septic tank absorption fields. Wetness is the main limitation for Kibbie soils, and ponding is the main limitation on Pella soils.

Blount-Rimer Association: Nearly level and gently sloping, somewhat poorly drained, loamy and sandy soils on till plains and moraines. Most of the soils in this association have been cleared and drained. They are often used for cultivated crops, hay and pasture. There are some swampy, undrained areas. Wetness and restricted permeability are the main limitations. These soils are poorly suited to building site developments and septic tank absorption fields due to a high water table.

² General Development Plan for Pipestone Township. Berrien County Planning Commission. 1987

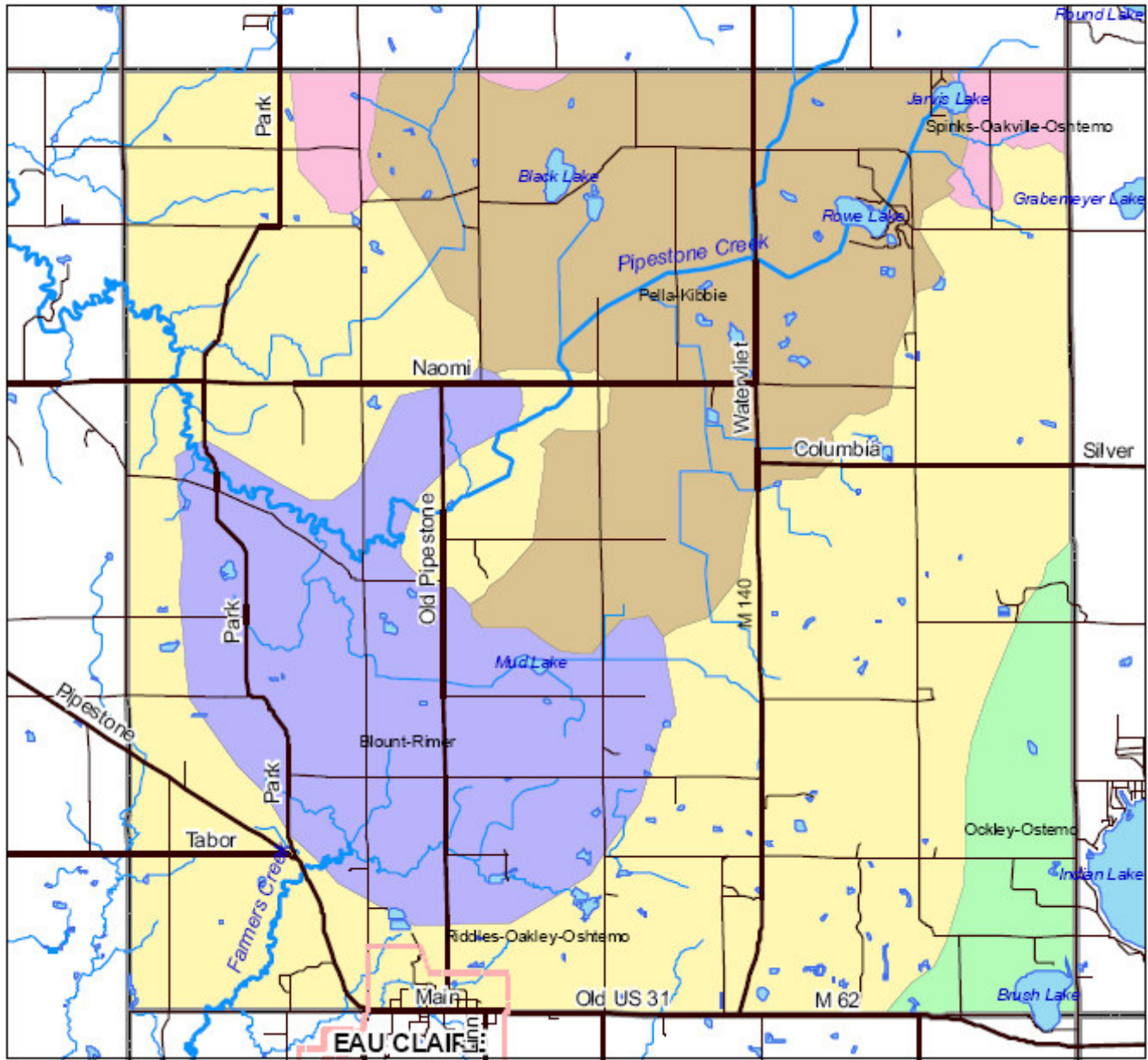
Ockley-Oshtemo Association: Nearly level to steep, well drained, loamy soils on outwash plains and moraines. Most of the soils in this association are farmed. The main problems of management are erosion control, slope, and soil blowing. Droughtiness is a problem on the Oshtemo soils during the midsummer months. The soils in this association are well suited to hay, pasture, specialty crops, and trees. The soils in this association are fairly suited to well suited to recreation uses, building site developments, and septic tank absorption fields. Slope and shrink-swell potential are the main limitations on the Ockley soils.

Spinks-Oakville-Oshtemo Association: Nearly level to very steep, well drained, sandy and loamy soils on moraines, till plains, outwash plains, and beach ridges. Most of the soils in this association are farmed. Soil blowing and droughtiness are concerns in cultivated areas. The soils in this association are well suited to hay, pasture, woodland, and recreation uses. They are poorly suited to cultivated crops. Many areas of this association can be irrigated. With proper management, these areas can be productive. This association is fairly suited to building site developments and septic tank absorption fields. Slope and poor filtering capacity of the soils are the main limitations.

Depth to High Water Table

Many areas in Pipestone Township have a high water table that is at or near the surface. The southeast and northwest corner of the township, where the rolling topography exists is where there is considerable depth between the surface and the high water table. These areas are usually better suited for development and also for farming.

General Soils



Legend

- Spinks-Oakville-Oshtemo
- Blount-Rimer
- Riddles-Oakley-Oshtemo
- Pella-Kibbie
- Ockley-Ostemo

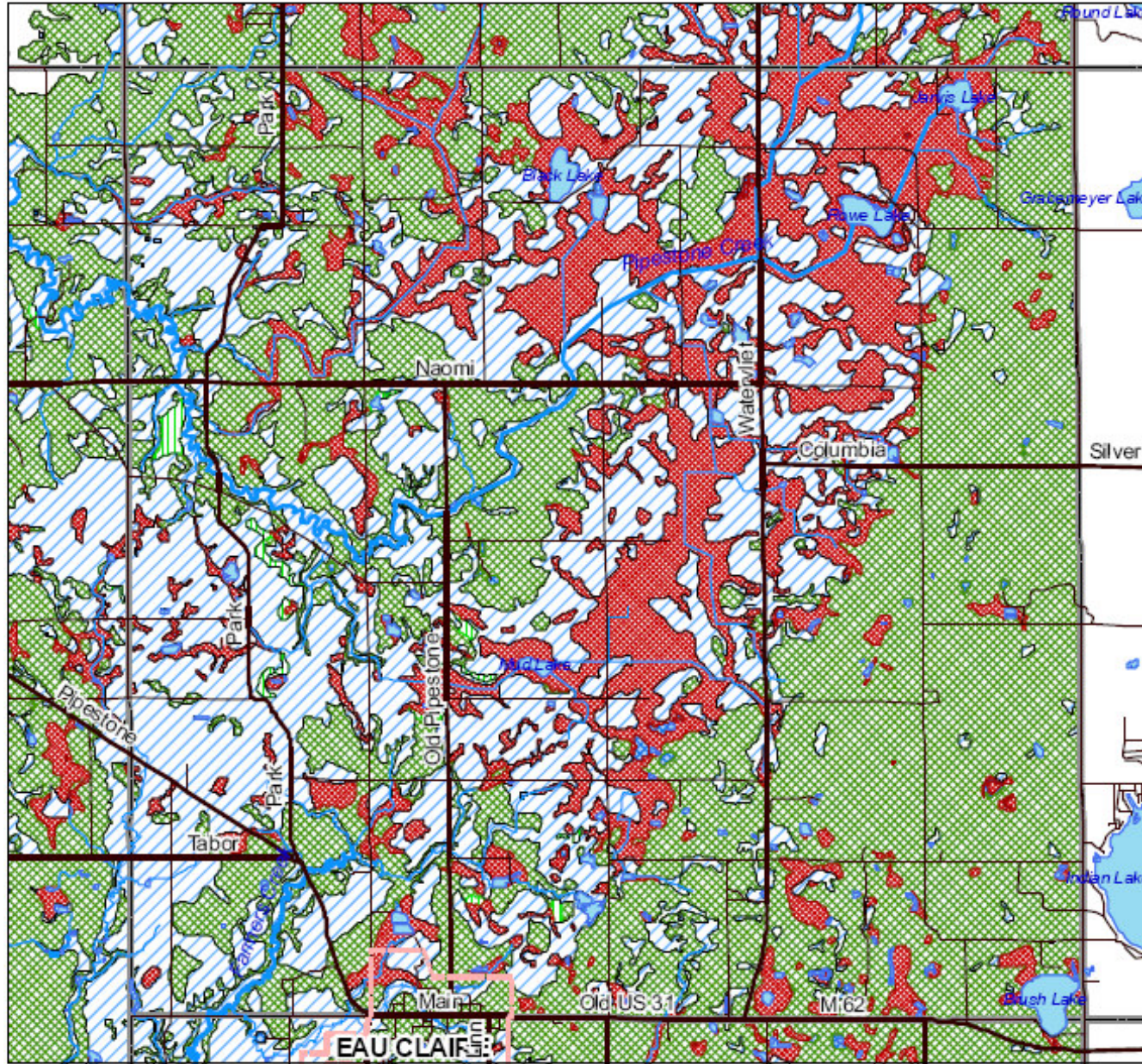
Data Source:

Base Map: Michigan Center for Geographic Information, Framework v4
 General Soils: US Department of Agriculture Soil Conservation Service, Soil Survey of Berrien County, 1980

Prepared November 2006
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Depth to High Water Table



- Legend**
- No Data (Open Water)
 - Water Table at the surface
 - Within 1ft of surface
 - 1-6ft from surface
 - >6ft from surface

Data Source:
 Base Map: Michigan Center for Geographic Information, Framework v4
 Berrien County Soil Survey: conducted by the USDA and NRCS, correlation date 4/1/1979, distribution date 12/15/2004

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Analysis

Pipestone Township's climate and topography are well suited for specialty crops such as orchards. The soils in Pipestone Township are also a factor when planning for the best of the land in the township. Soil with extreme characteristics, such as sandy loam or clay, is not as acceptable for septic systems because of health and water pollution concerns. The Berrien County Soil Survey indicates that approximately 15% of the soils in Pipestone Township are well adapted for septic systems. Another 5% are classified as poorly adapted because of poor drainage and percolation. The remaining 80-85% of the soils are not well adapted for residential development. With 80% of the soils in Pipestone Township not well adapted for onsite septic systems, large-scale residential development is hindered without the installation of a municipal sanitary sewer system. The township does not anticipate any proposed public sanitary sewer projects. Therefore, residential lots will have to be of adequate size to offset the poor soil characteristics, otherwise overdevelopment of these areas will result in groundwater and possibly even surface water contamination. As a result of the geology in the area, the groundwater is extremely vulnerable to contamination. If groundwater supplies become polluted it is not possible to drill beneath the bedrock for another water supply. So, it is extremely important to protect the groundwater supplies, because the only alternative is surface water which is more expensive to treat for drinking water use.

NATURAL and CULTURAL FEATURES

Water Resources

All of Pipestone Township is located within the St. Joseph River Watershed. This watershed is located in the southwest portion of the Lower Peninsula of Michigan and northwestern portion of Indiana. It spans the Michigan-Indiana border and empties into Lake Michigan at St. Joseph, Michigan. The watershed drains 4,685 square miles from 15 counties (Berrien, Branch, Calhoun, Cass, Hillsdale, Kalamazoo, St. Joseph and Van Buren in Michigan and De Kalb, Elkhart, Kosciusko, Lagrange, Noble, St. Joseph and Steuben in Indiana). The watershed includes 3,742 river miles and flows through and near the Kalamazoo-Portage, the Elkhart-Goshen, the South Bend and the St. Joseph/Benton Harbor metropolitan areas. According to the 2000 U.S. Census, about 950,000 people live in the St. Joseph River Watershed. The watershed is largely agricultural. Most watersheds are composed of a mixture of uplands, wetlands, riparian areas, streams, drains and lakes. The most common component of almost all watersheds is the upland area, covering in many cases over 99% of the total watershed area.

What is A Watershed?
 A watershed is the area of land that catches rain and snow and drains or seeps into a marsh, stream, river, lake or groundwater. **You are sitting in a watershed now.** Homes, farms, ranches, forests, small towns, big cities and more can make up watersheds. Some watersheds cross county, state, and even international borders such as the Great Lakes Basin. Watersheds come in all shapes and sizes. Some are millions of square miles; others are just a few acres. Just as creeks drain into rivers, watersheds are nearly always part of a larger watershed or basin. The **St. Joseph River Watershed** is part of the **Lake Michigan Watershed** which is part of the **Great Lakes Basin**. Every stream, tributary or river has an associated watershed.

Surface Water

There are six lakes in Pipestone Township that are larger than eight acres. Black Lake has a public access with a boat launch.

Name	Location	Size	Description & Comments
Black Lake	Sec. 4, T5S, R17W	20 acres	Clear, heavy weed growth, muck shoreline. Has state owned public access site.
Little Black Lake	Sec. 3 and 4, T5S, R17W	8 acres	Clear, muck shoreline
Brush Lake	Sec. 36, T5S, R17W	62 acres	Most of the lake is shallow with muck bottom. These are extreme fluctuations in the lake level. The southern tip of the lake is in Cass County.
Jarvis Lake	Sec. 1, T5S, R17W	20 acres	Spring fed, muck bottom
Mud Lake	Sec. 21, T5S, R17W	8 acres	Clear, muck shoreline
Rowe Lake	Sec. 2, T5S, R17W	30 acres	Clear, muck shoreline

There are three principal streams flowing through Pipestone Township. Pipestone Creek is the largest and originates in Jarvis Lake and flows westerly to the St. Joseph River. Farmers Creek is a spring fed creek that flows in a southwesterly direction through the southwest portion of the township and empties into the St. Joseph River. Crooked Brook is a small spring fed creek in the northwest corner of the township that empties into Pipestone Creek.

How land is developed impacts the quality and quantity of our water. Land uses from any part of the watershed -- such as polluted runoff from farms, forests and homes -- eventually affect the health of the whole watershed.

There are several wetlands in Pipestone Township. Many surround the creeks and drains running through the township. There is a large complex of forested wetland/floodplain in the northern portion of the township just south of Little Black Lake. The land surrounding Pipestone Creek has an extensive floodplain. Both the wetland and floodplain areas are important for maintaining water quality and capacity for flood events and also for providing important wildlife habitat.

Groundwater

As a result of the geology in the area, the groundwater is extremely vulnerable to contamination. If groundwater supplies become polluted it is not possible to drill beneath the bedrock for another water supply. So, it is extremely important to protect the groundwater supplies, because the only alternative is surface water which is more expensive to treat for drinking water.








PIPESTONE TOWNSHIP MASTER PLAN

LEGEND

BOTTOM

-  Organic
-  Marl

SHORE FEATURES

-  Encroaching shore
-  Wooded
-  Brush
-  Marsh
-  Spring
-  Improved road
-  Inlet or outlet

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

BLACK LAKE

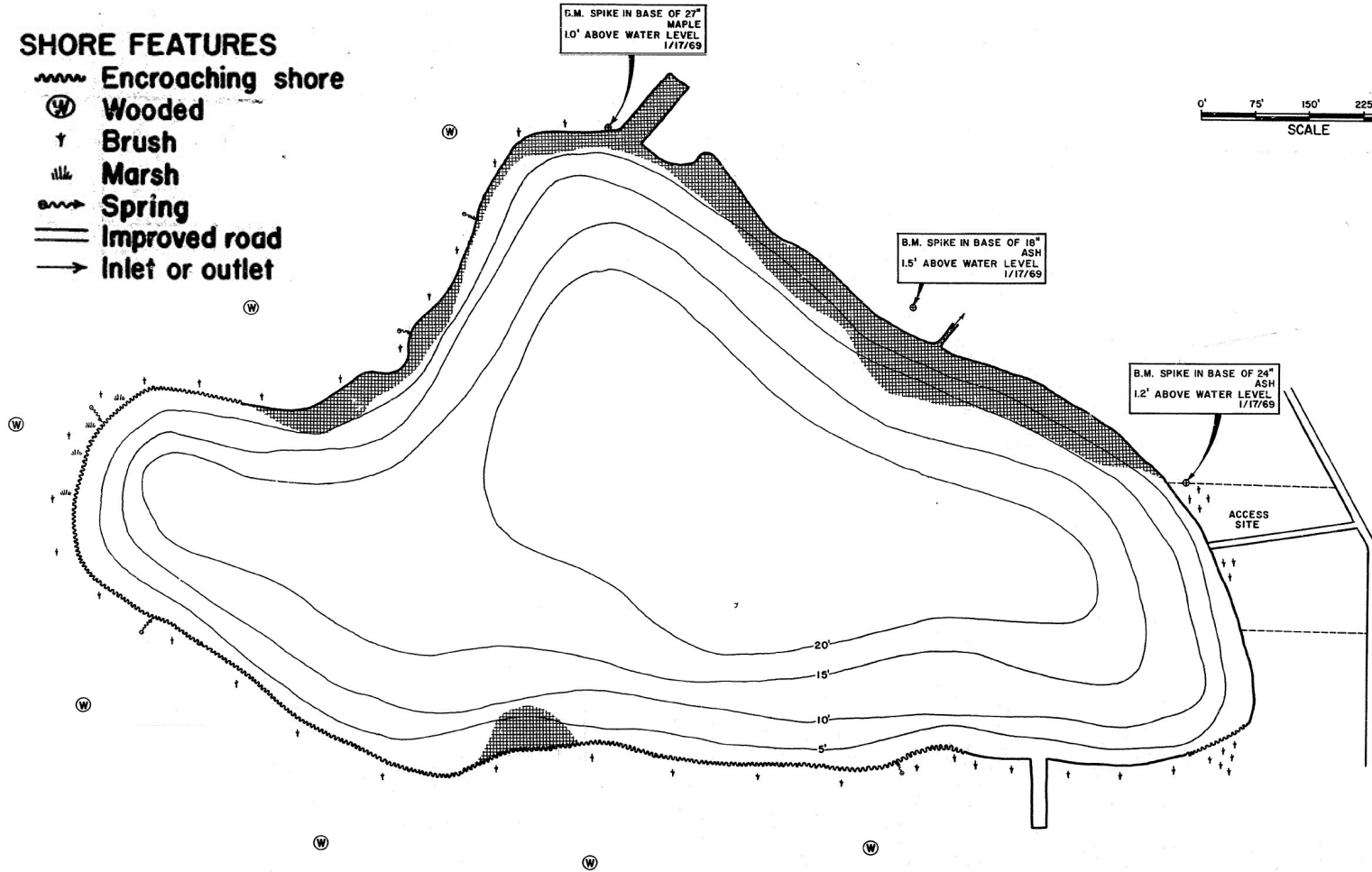
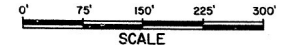
AREA 20.2 ACRES

BERRIEN COUNTY

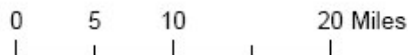
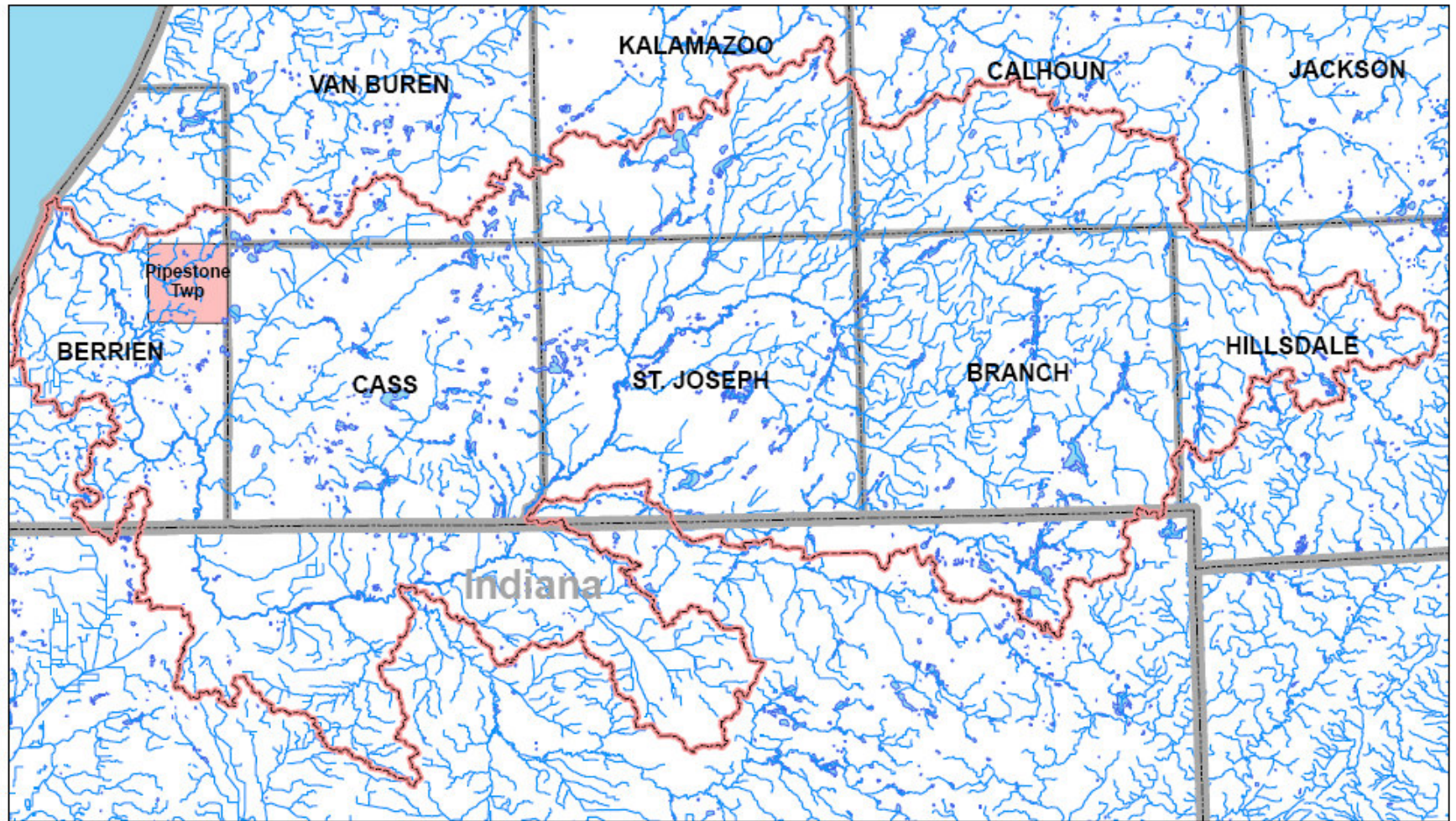
T. 5 S., R. 17 W., SEC. 4

SURVEY AND SOUNDINGS


JAN. 17, TO JAN. 20, 1969



St. Joseph River Watershed



Legend

 St. Joseph River Watershed Boundary

Data Source:

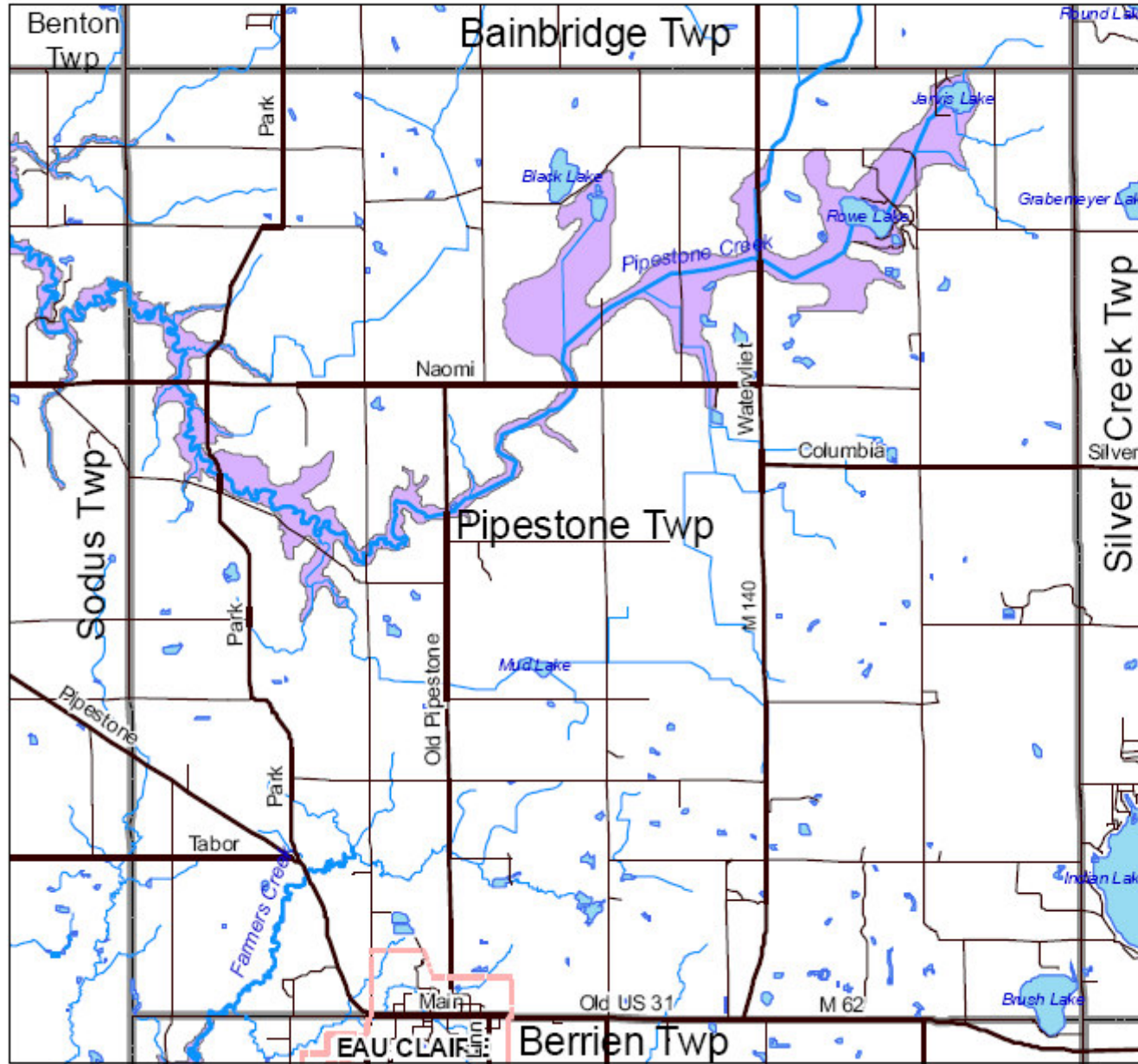
Watershed Boundary Data: Michigan Department of Environmental Quality (MDEQ) 1998

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Floodplains



Legend

-  Townships
-  Floodplains

Data Source:
 Base Map: Michigan Center for Geographic Information, Framework v4
 Floodplains: Federal Emergency Management Agency (FEMA), Digital Flood Insurance Rate Map (DFIRM) Database, Berrien County, 2006

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Terrestrial Resources

Forests

According to the 2000 land cover data; there are a few large stands of forested areas in Pipestone Township. The large forested areas are mostly forested wetlands which have water at the surface at least part of the year. These large blocks are near Rowe and Jarvis Lakes and south of Black Lake.

Farmland

Most of the prime farmland in Pipestone Township is located in the southeast corner of the township. In addition, there is a large block of farmland of local importance in the northeast corner of the township. The Land Cover map shows a large amount of orchards/vineyards in the eastern part of the township (especially in the southeast). There is also a cluster of orchards/vineyards in the northwest corner of the township. These high areas with the orchards and vineyards are also often the land that is most suited for development.

Endangered Species

A species is endangered when it is threatened with extinction. Since time began, countless species have gone extinct from natural processes. The extinction of dinosaurs is the best known example. Today most species of plants and animals become extinct because of habitat destruction (loss of living space to development or pollution), introduction of non-native organisms, and direct killing (over-harvesting or poisoning). Plant and animal species are the foundation of healthy ecosystems. When species become endangered, it is an indicator that the health of these vital ecosystems is beginning to unravel. In addition, plant and animal species and their ecosystems form the basis of America's multi-billion dollar, job-intensive tourism industry. They also supply recreational, spiritual, and quality-of-life values as well. Each year over 108 million people in the United States participate in wildlife-related recreation including observing, feeding, and photographing wildlife. Americans spend over \$59 billion annually on travel, lodging, equipment, and food to engage in non-consumptive wildlife recreation.

According to the records maintained by the Michigan Natural Features Inventory, several endangered species have been found in Pipestone Township. A list of the endangered, threatened and special concern species are listed in the Appendix.

Recreational and Cultural Resources

Along with natural resources, Pipestone Township has many recreational and cultural resources. The township boasts two of the area's favorite golf courses. The 27 hole, Indian Lake Hills Golf Course is located on Brush Lake Road in the southeastern corner of Pipestone Township. Pipestone Creek Golf & Tennis Club offers 18 holes of play and is in central Pipestone Township, on Naomi Road. Black Lake in Pipestone Township has a Michigan Department of Natural Resources public access site with 8 parking spaces and a hard surface boat ramp.

Within a twenty mile radius of Pipestone Township there is a wide spectrum of year-round recreational and cultural activities for all age groups. Here is a listing of a few of the offerings.

Golf Courses

Pipestone Creek, Pipestone Township
Blossom Trails, Benton Township
Brookwood, Buchanan
Elks Golf Course, Dowagiac
Hampshire Country Club, Dowagiac
Indian Lake Hills, Pipestone Township
Lake Michigan Hills, Benton Harbor
Plym Park, Niles
Spruce Ridge, Dowagiac

Natural Areas

Sarett Nature Center, Benton Township
Love Creek County Park and Nature Center, Berrien Center
Dowagiac Woods, Pokagon Township (Cass County)

Cultural Activities

Curious Kids' Museum, St. Joseph
Deer Forest, Coloma
Krasl Art Center, St. Joseph
1839 Court House Museum, Berrien Springs
Howard Performing Arts Center, Berrien Springs
Mendel Center, Benton Township
Southwest Michigan Symphony, Benton Township
Twin City Players, St. Joseph
Celebration Cinema, Benton Township

Camping

Oronoko Lakes, Berrien Springs
Shamrock Park, Berrien Springs
Bear Cave, Buchanan
Shady Shores Resort, Dowagiac
Spaulding Lake Campground, Niles

Analysis

Pipestone Township contains many natural features that are notable. The lakes, streams, rolling topography, wetlands, forested areas and farmlands all contribute to the rural character and open spaces in the township. These natural features and the resulting rural character feel are the major reasons why residents have moved to Pipestone Township. In addition, these natural resources provide many economic and other benefits that are described as ecosystem services, which many take for granted.

The areas around Rowe and Jarvis Lakes and south of Black Lake have the largest extent of the most environmentally sensitive areas in the Township. It will be important to direct development away from sensitive areas such as wetlands, riparian areas, floodplains and steep slopes. These areas are important for water purification, wildlife habitat and flood mitigation. It is essential for public health to maintain high quality surface and ground water resources.

The survey of Pipestone Township residents showed that the majority of respondents believe that the protection of the natural environment should be a top priority for the Township (70% agreed or strongly agreed and only 10% disagreed or strongly disagreed).

The survey respondents also strongly agreed that the Township should adopt ordinances that protect wetlands, streams and rivers (80% agreed or strongly agreed and only 10% disagreed or strongly disagreed).

One tool to ensure that natural features are preserved is to encourage the use of conservation or open space developments (see Appendix 1). The community survey showed strong support for these types of developments (64% of the respondents preferred the conservation development over the traditional sub division development).

The natural resources also play an important part in many of the recreational and cultural resources in the township and in the surrounding area. The recreational and cultural resources play an important role in tourism and providing a high quality of life for current residents and for attracting new businesses and residents. The community survey shows some support for the township to consider purchasing land for park and recreational use. However, there is more support for the township to purchase land for open space preservation and farmland preservation.

Ecosystem Services are the processes by which the environment produces resources that we often take for granted such as clean water, timber, and habitat for fisheries, and pollination of native and agricultural plants. Whether we find ourselves in the city or a rural area, the ecosystems in which humans live provide goods and services that are very familiar to us. Here are a few examples:

- Maintenance of healthy waterways
- Water and air filtration
- Mitigation of drought and floods
- Pollination of crops and natural vegetation
- Prevention of soil erosion
- Fulfillment of people's cultural spiritual and intellectual needs
- Contribute to climate stability
- Regulation of insect pests and disease carrying organisms
- Maintenance and provision of genetic resources
- Maintenance and regeneration of habitat
- Provision of shade and shelter
- Maintenance of soil fertility
- Maintenance of soil health

CURRENT LAND USE

The following section describes the major categories of land uses in the township. The following table lists the percentage of land cover categories in the township in 2000. This is the most recent data that is available for Pipestone Township.

Land Cover	Percent
Urban	4.5%
Farmland	52.2%
Orchard/Vineyard/Nursery	14.8%
Open Land	6.5%
Forest	12.4%
Water	0.4%
Forested Wetland	5.5%
Wetland	3.7%
Total	100.0%

Source: IFMAP, MDNR, Land Cover 2000

Farmland

Agriculture is the overwhelmingly dominant land use in Pipestone Township. Agricultural includes all lands utilized for farming and crop cultivation purposes. Generally land in this category occupies large parcels and includes a single-family residence along with several outbuildings. Agricultural land uses can be found throughout Pipestone Township ranging from traditional row crops to fruit orchards and vineyards. Most of the orchards are located the southeastern portion of the Township (the area with the most topographical relief.)

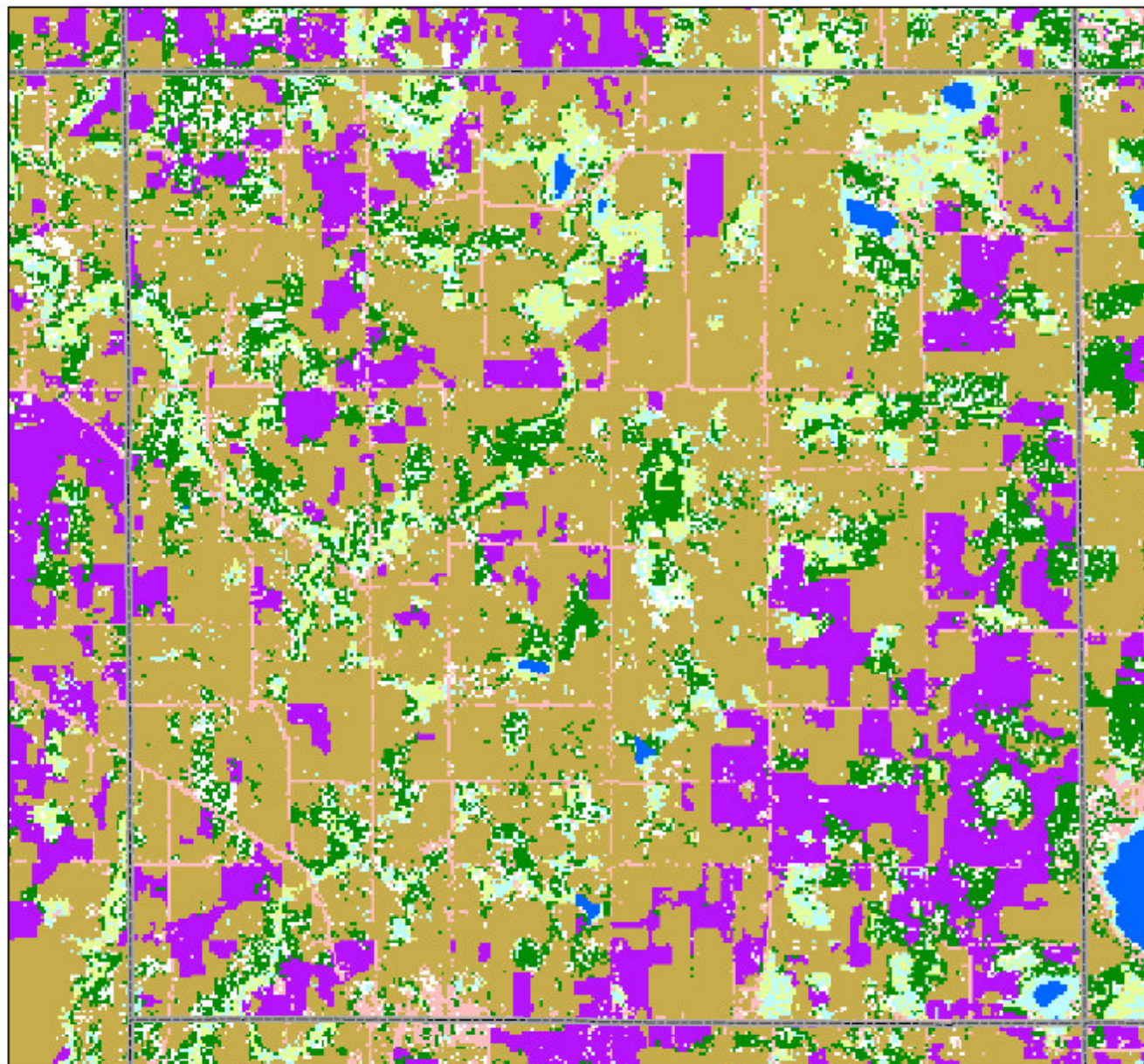
Urban/Built Up Land

Urban built up land includes residential, commercial and industrial land uses. Most of the built up land is along the roadways in the Township and near Eau Claire Village.









Wetlands/Forests

There are still large tracts of forests and wetland complexes in the township. These areas are mostly surrounding the creeks, streams and lakes in the township. There are two notably large wetland complexes in the township – in the northeast corner near Rowe Lake and in the northern central part of the township south of Black Lake.

Land Cover 2000



Legend

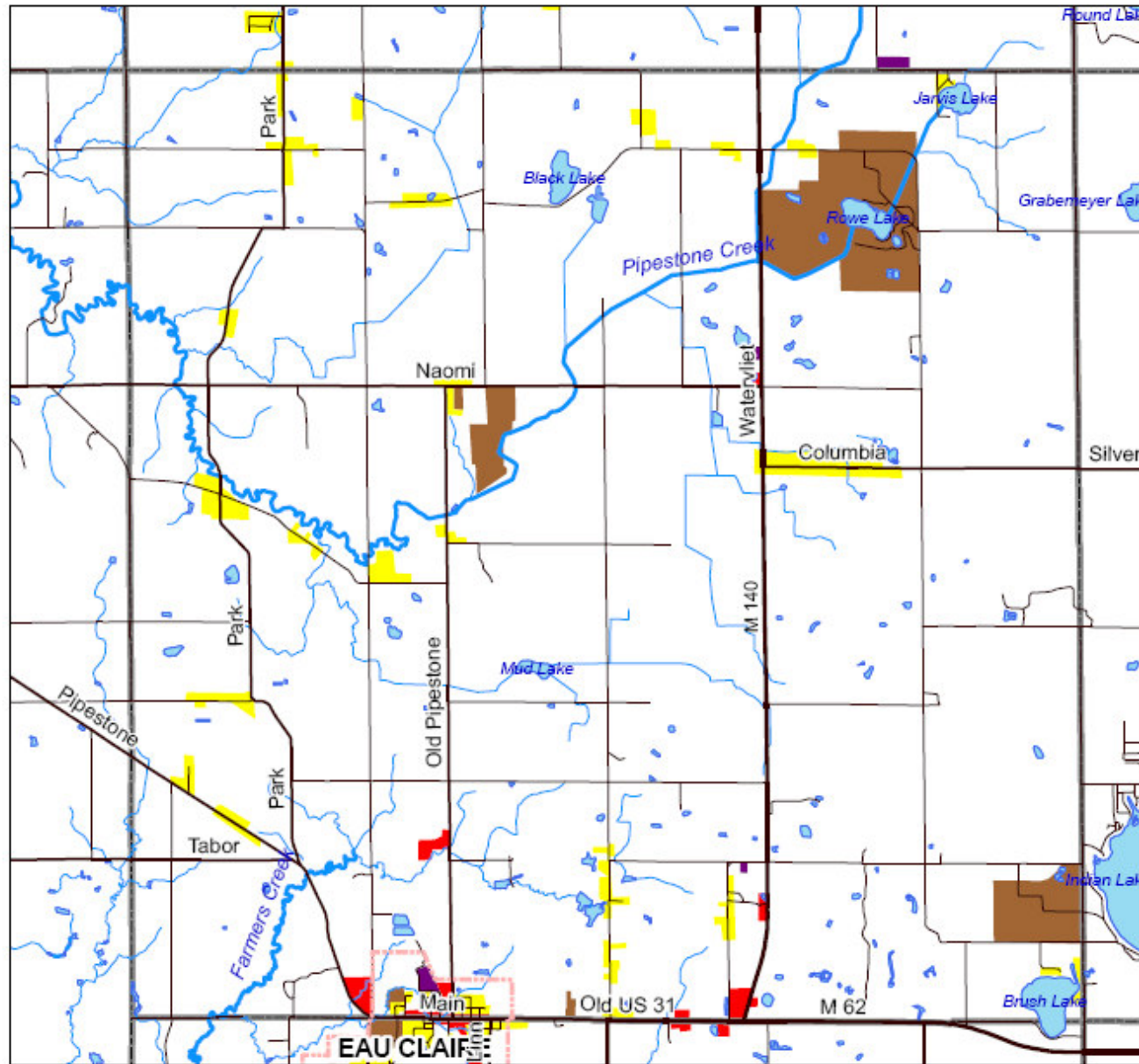
	Urban (4.5%)
	Farmland (52.2%)
	Orchard/Vineyard/Nursery (14.8%)
	Open Land (8.5%)
	Forest (12.4%)
	Water (0.4%)
	Forested Wetland (5.5%)
	Wetland (3.7%)

Data Source:

Berrien County Soil Survey:
 conducted by the USDA and NRCS.
 Correlation Date: 4/1/1979
 Distribution Date: 12/15/2004
 Land Cover 2000:
 IFMAP/GAP Lower Peninsula Land
 Cover, Michigan Department of
 Natural Resources (MDNR) (2001)
 Land Use 1999 Berrien County 2005
 Future Land Use 2020 Berrien County 2005

Map Prepared October 2006 by:
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Pipestone Township Land Use 1999 (Based on tax category)



Legend

- Residential
- Commercial
- Industrial
- Public/Semi-Public
- Agricultural/Vacant

Data Source:

Base Map: Michigan Center for Geographic Information, Framework v4
 Land Use 1999: Berrien County, based on tax category

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Analysis

About 67% of the land in the township is used for agriculture. Agriculture and/or farmland will probably continue to dominate the land use in Pipestone Township into the near future.

Currently only 4.5% of the land is in urban use or built up. And about 28% of the land is in forests, wetlands and open areas. Another way to assess land use is by the tax category. In 1999, most of the land in Pipestone Township was being taxed as agricultural. The land use map based on taxing also shows some large public/semi-public areas in the township. The large public/semi-public areas are golf courses and a campground. Based on conversations, surveys and other research, there are no significant proposed or potential developments that will affect the percentages of land uses in the near future.

TRANSPORTATION

Regional Transportation Options

Highway transportation routes convenient to Pipestone Township include I-94, a major east-west interstate highway accessible 7.5 miles north of the township; US-31 adjacent to the township runs north to south from Napier Ave. to the State of Indiana, M-140, a state highway crossing the township north to south; and M-62 a state highway that follows the southern edge of the township in an east-west direction.

Airports include the Jerry Tyler Memorial Airport, located 1.5 miles northeast of downtown Niles, which serves as a general utility airport facility with no type of commercial flight operations, and the Southwestern Michigan Regional Airport (SWMRA) which is the largest airport in Berrien County and the only all-weather airport in Berrien, Cass, and Van Buren Counties. SWMRA is one of only twenty state airports that have a full Instrument Landing System (ILS). SWMRA has three paved, lighted runways, aircraft hangars, aviation fuel, and an on-site fixed operator. Like the Jerry Tyler Memorial Airport, SWMRA does not have any commercial passenger flight operations. Other public-use airports include Andrews University Airpark in Berrien Springs, the Watervliet Municipal Airport, and the Dowagiac Municipal Airport in Cass County. The larger international airports, Midway and O'Hare in Chicago, Illinois are approximately 100 miles west and Detroit Metro Airport in Detroit, Michigan is approximately 190 miles east. Regionally, the South Bend Regional Airport offers commercial passenger flights as well as freight and private plane operations. From South Bend, passengers can connect to other major airports, like Chicago, Detroit, Cincinnati, Minneapolis-St. Paul, Atlanta, and Pittsburgh. The South Bend Regional Airport is approximately 21 miles away.

Bus Lines providing out-of-state transportation include Indian Trails Motorcoach and Greyhound Bus Lines. Both lines share one station located locally on M-139 in Benton Charter Township.

Railway Transportation can be accessed at the newly renovated station in the City of Niles, which has an Amtrak line running from Chicago to Toronto. New developments with technology in high-speed rail have been tested and the system could be implemented in southwestern Michigan. This would enable residents in the region to readily commute to both Detroit and Chicago. Michigan's Department of Transportation (MDOT) and Amtrak have put significant funding toward the achievement of high-speed rail. Amtrak has considered locating an intermodal transportation facility in the Niles Industrial Park that would primarily house Amtrak, but also would include other entities such as Norfolk Southern.

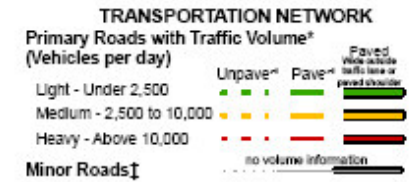
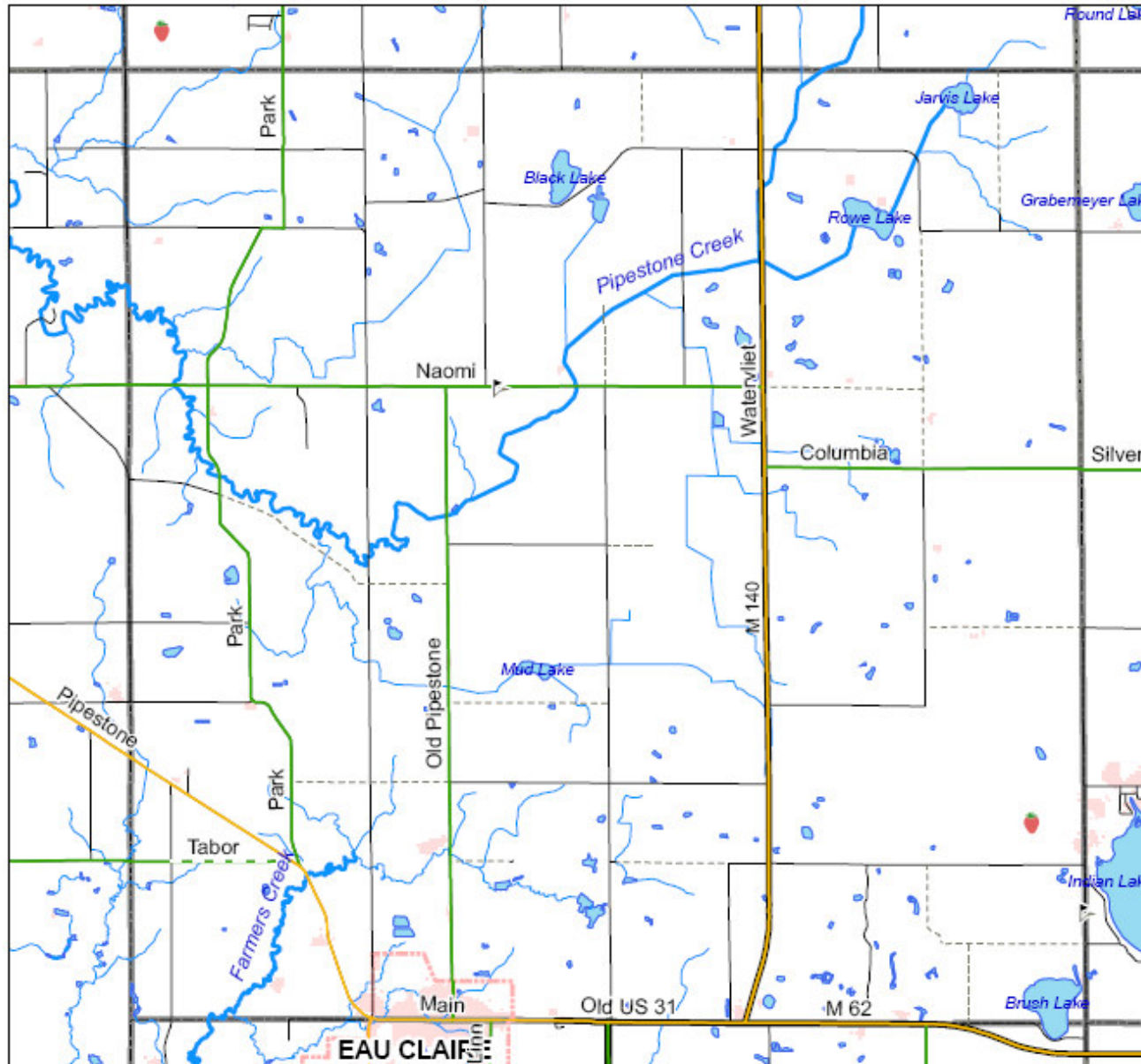
The South Shore Railroad, operated by the Northern Indiana Commuter Transportation District (NICTD), carries passengers to Chicago from the South Bend Regional Airport on a daily basis. It operates from 6:00 AM to 11:00 PM. Plans call for improvements to the line to reduce the commute from 2 hours and 20 minutes to approximately 1 hour and 40 minutes. The number of riders continues to increase as more people commute to jobs in Chicago.

Public Transportation is provided to township residents by Berrien Bus, a transit service sponsored by and under contract with the Berrien County Board of Commissioners. Berrien Bus is a non-urban system that provides transportation to all areas not served by dial-a-ride service areas. The service includes both a semi-fixed route service and a curb-to-curb demand-response service, with a 24-hour reservation, within Berrien County. For passengers going to Benton Harbor City, Berrien Bus offers curb to curb service to pre determined destinations within the City of Benton Harbor. If door-to-door service is required at other points in the City, a second reservation must be placed with Dial-A-Ride (in Benton Harbor).

Shipping Ports are located along Lake Michigan's coastline. The Benton Harbor/St. Joseph port is located approximately 15 miles from Pipestone Township. This port primarily accommodates deep draft freighters carrying road salt, sand, gravel, limestone, and aggregate. In 1999, the Mariport Group completed a *Commercial Port Study* for Berrien County. The study described potential new uses for the port including a barge grain terminal and/or a seed crushing plant that could ship edible oils.

There are no designated **non-motorized routes** or trails in, or accessible to, Pipestone Township residents. Several of the roads in the township have low traffic volumes, but lack wide paved shoulders. Most likely, only advanced cyclists would be comfortable biking on these roads.

Non Motorized Map



Data Source:
 Base Map: Michigan Center for Geographic Information, Framework v4
 Southwestern Michigan Bicycle Travel Information: Michigan Department of Transportation (MDOT)

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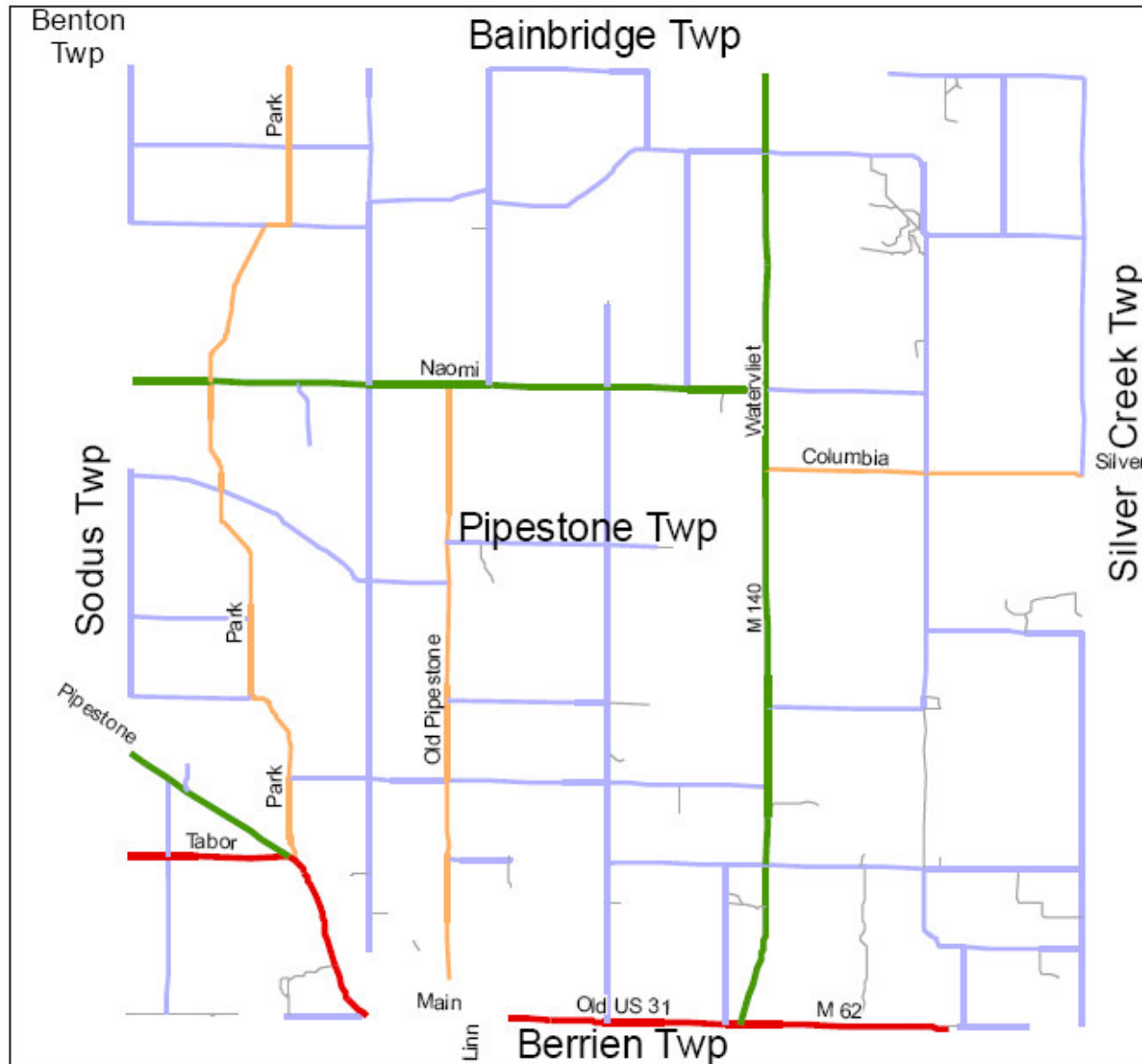
Township Roadways

There are 85.408 miles of roadway in Pipestone Township; 26 of those miles are federal-aid-eligible. The primary purposes of roadways are to move traffic and provide access to adjacent property. Each road within the township serves both of these purposes to a varying degree. Roadways are categorized based on their primary function or purpose. They are then placed in one tier of the four-tier functional hierarchy with the following definitions:

1. *Rural or Urban Interstate* – Roadways designed to transport large volumes of traffic from one area to another. Provides the link into the overall interstate highway system, which is a limited-access system, and is designed to move large volumes of traffic between neighboring states. There is no “Interstate” designated roadway in Pipestone Township. The nearest such roadways are I-94, located 7.5 miles north of the Township, and I-196, easily accessible from I-94. U.S. 31 connecting the southwestern portion of Michigan to the South Bend, Indiana urban area lies approximately 4 miles to the West of the township. U.S.31 is accessible from Napier Ave. in the northern portion of the township or by Sodus Parkway via Naomi Road.
2. *Rural Minor Arterial* – Roadways which serve longer trips, sometimes extending beyond municipal boundaries to connect with adjacent population centers or larger arterials. These roads collect and distribute relatively large volumes of traffic between rural residential, employment, and shopping destinations. The only roads designated as rural minor arterial in Pipestone Township are M-62 and Tabor Road.
3. *Rural Major Collector* – Roadways that collect and distribute traffic to and from the higher classified systems. M-140, Naomi Road and Pipestone Road are the only roads of this category in Pipestone Township.
4. *Rural Minor Collector* – In addition to collecting and distributing traffic in the same way that the rural major collector road systems do, rural collectors primary function is to serve as a connector between higher classified systems. The minor collectors within Pipestone Township are Park Road, Old Pipestone Road and Columbia Road.

Other roadways located within the township are designated as the rural local road system. These roads also collect and distribute traffic, but their primary function is to connect single properties with business, highways, schools, parks, and other locations within the Township. Examples of this type of roadway are Sinclair Road, Hochberger Road, W. Eureka Road, Preston Road, Bailey Road, Hartman Road, and Edwards Road. These roads are not federal-aid-eligible and are maintained through local funding.

Pipestone Township



Roads by Function Class

- Rural Minor Arterial
- Rural Major Collector
- Rural Minor Collector
- Rural Local
- Not a Certified Public Road

Data Source:

Base Map: Michigan Center for Geographic Information, Framework v4

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Road Maintenance

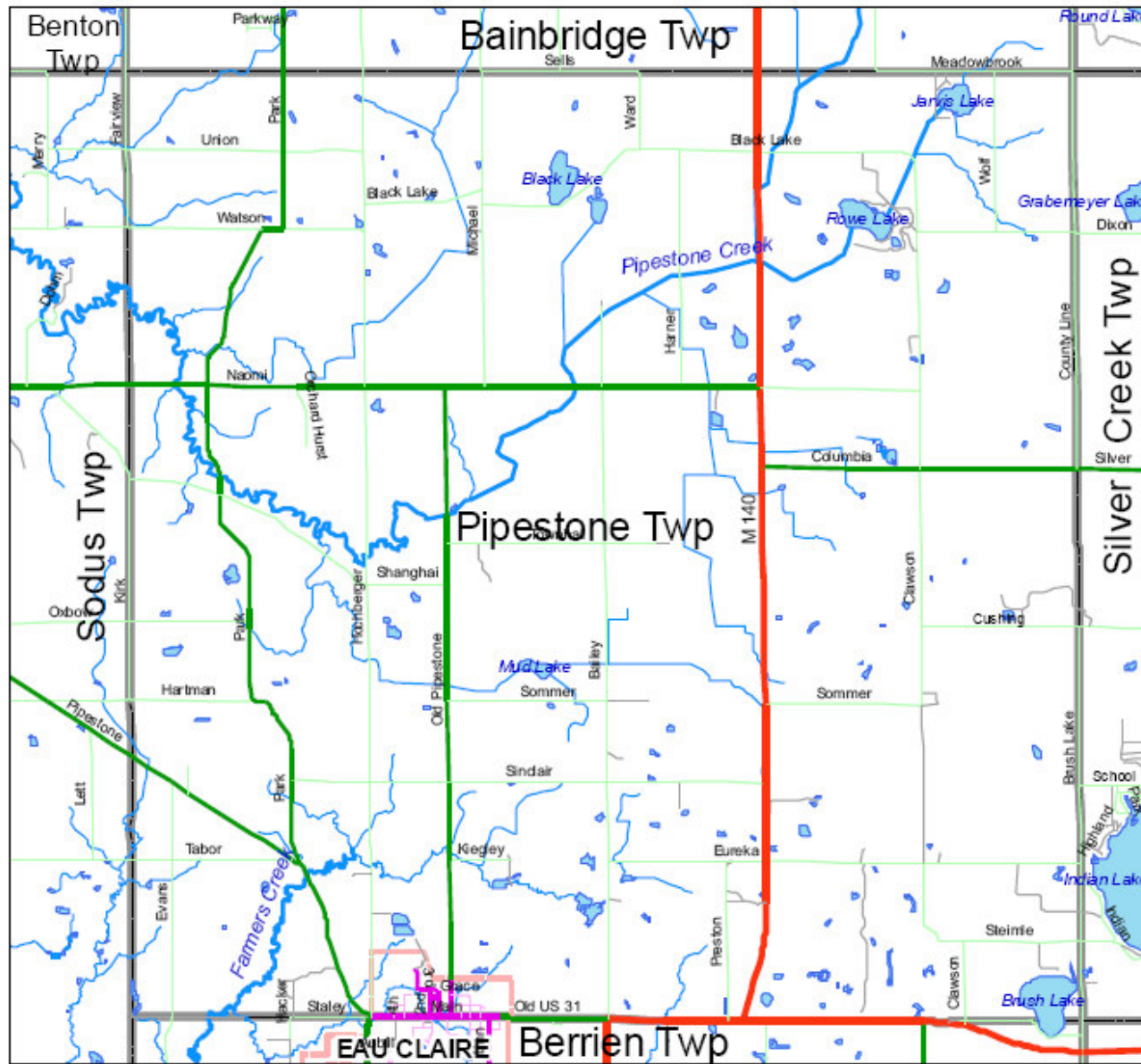
Roads can also be classified by a legal system of ownership and who is responsible for funding the maintenance of the roads. The McNitt Act of 1931 and PA 51 of 1951 (State Trunkline Highway System) removed township authority over community roads and required county road commissions to take over all township public streets and alleys outside the limits of incorporated cities and villages as either county primary or local roads. Other than providing 50 percent of improvement costs for local roads, Pipestone Township has no legal obligation to maintain or repair county roads within the township limits. Under the McNitt Act and PA 51, county road commissions are required to maintain primary and local roads as “reasonably safe and convenient for travel.” This obligation has been construed to include dust control to prevent traffic hazards, alleviating flooding conditions that cause traffic problems, and correcting potholes that are deep enough to cause loss of control or damage to a vehicle. The Michigan Court of Appeals has further ruled that the county road commission cannot use lack of funds to defend its failure to maintain roads in a condition to make roads safe and convenient for travel. The following tables illustrate the ownership and surface types of the roadways in Pipestone Township.

Road Ownership by Miles	
Owner	Miles*
State Trunkline	7.446
County Primary	17.545
County Local	57.978
Not Certified	2.439

Road Surface Types	
Type	Miles*
Gravel	17.8716
Seal Coat	46.8895
Asphalt	19.347
Earth/Undefined	1.301

*Miles exclude the Village of Eau Claire.

Pipestone Township



Roads by Legal System

- State Trunkline
- County Primary
- County Local
- City Major
- City Minor
- Uncertified
- Townships

Data Source:

Base Map: Michigan Center for Geographic Information, Framework v4

Prepared November 2006

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Website: www.swmpc.org



The following table corresponds to the ratings on the map of 2005 Paser Ratings for Pipestone Township roads.

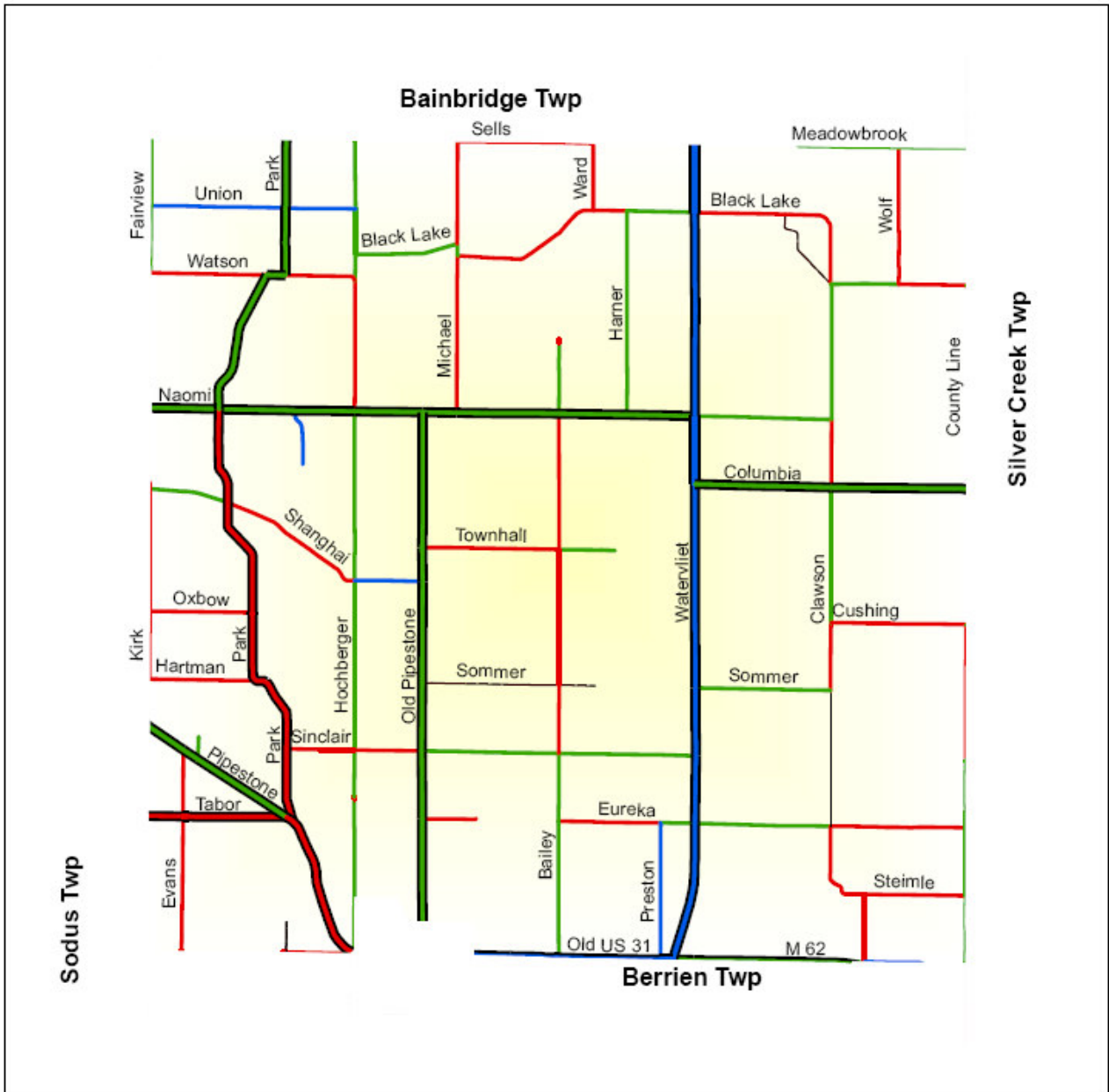
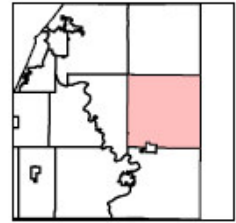
Surface Rating	Visible Distress*	General condition/ treatment measures
10 EXCELLENT	NONE	New construction.
9 EXCELLENT	NONE	Recent overlay. Like new.
8 VERY GOOD	No longitudinal cracks except paving joints. Occasional transverse cracks, widely spaced (40' or greater) All cracks sealed or tight (open less than ¼ ")	Recent sealcoat or new cold mix. Little or no maintenance required.
7 GOOD	Very slightly or no raveling, surface shows some traffic wear. Longitudinal cracks (open ¼") due to reflection or paving joints. Transverse cracks (open ¼") spaced 10' or more apart, little or slight crack raveling. No patching or very few patches in excellent condition.	First signs of aging. Maintain with routine crack filling.
6 GOOD	Slight raveling (loss of fines) and traffic wear. Longitudinal cracks (open ¼" to ½") some spaced less than 10". First signs of block cracking. Slight to moderate flushing or polishing. Occasional patching in good condition.	Shows signs of aging sound structural condition. Could extend life with sealcoat.
5 FAIR	Moderate to severe raveling (loss of fine and coarse aggregate). Longitudinal and transverse cracks (open ½") show first signs of raveling and secondary cracks. First signs of longitudinal cracks near pavement edge. Block cracking up to 50% of surface. Extensive to severe flushing or polishing. Some patching or edge wedging in good condition.	Surface aging. Sound structural condition. Needs sealcoat or thin non-structural overlay (less than 2")
4 FAIR	Severe surface raveling. Multiple longitudinal and transverse cracking with slight raveling. Longitudinal cracking in wheel path. Block cracking (over 50% of surface). Patching in fair condition. Slight rutting or distortions (½" deep or less).	Significant aging and first signs of need for strengthening. Would benefit from structural overlay (2" or more).
3 POOR	Closely spaced longitudinal and transverse cracks often showing raveling and crack erosion. Severe block cracking. Some alligator cracking (less than 25% of surface). Patches in fair condition to poor condition. Moderate rutting or distortion (1' or 2" deep). Occasional potholes.	Needs major patching and repair prior to major overlay. Milling and removal of deterioration extends the life of the overlay.
2 VERY POOR	Alligator cracking (over 25% of surface). Severe distortions (over 2" deep). Extensive patching in poor condition. Potholes.	Severe deterioration. Needs reconstruction with extensive base repair. Pulverization of old pavements is effective.
1 FAILED	Severe distress with extensive loss of surface integrity.	Failed. Needs total reconstruction.

**Individual pavements will not have all the types of distress listed for any particular rating. They may have only one or two types.*



1 inch equals 1.1 miles

Asset Management Council
2005 PASER Ratings
Pipestone Twp, Berrien County



Federal Aid Eligible Roads

- █ Rating 8-10 (6.1 miles)
- █ Rating 5-7 (14.5 miles)
- █ Rating 1-4 (5.4 miles)
- █ Not Rated

Rating Scheme

- Requires Routine Maintenance
- Requires Capital Preventive Maintenance
- Requires Structural Improvements

Non Federal Aid Eligible Roads

- █ Rating 8-10 (3.9 miles)
- █ Rating 5-7 (20.8 miles)
- █ Rating 1-4 (27.2 miles)
- █ Not Rated

Analysis

The overwhelming majority of travel is done by auto. Therefore, the road system is the most important transportation asset for Pipestone Township residents. The federal-aid eligible roads are generally in good condition. There are good connections to other major highways and regional centers within the area. But the local roads do not receive the same high marks. As is seen in the Paser 2005 ratings, Park Road is the only County Primary Road with a low rating indicating that it is at or near the time for repair. Several county local roads received low ratings indicating that they are also in need of repair. Further, the community survey results indicate that 87% of the respondents support or strongly support spending tax money on road repairs. Ultimately, the township board may need to identify additional local funding, such as a local millage for road maintenance in township. The roads will continue to be the most visible transportation asset that defines the conditions of transportation in Pipestone Township.

Bicycling and walking is not very practical in the township, because there are not adequate paved shoulders on most roads. There is not strong support in the community survey to spend tax revenue on bicycling and/or pedestrian facilities; however, there is strong support (55% strongly agree or agree) that new residential subdivisions should be encouraged to include bike paths, parks and sidewalks. In the future, an older aged population will require larger signage and alternatives to single occupancy vehicles. Usually, the older population will want to have access to public transit services and to adequate pedestrian facilities. So, even though there is not much interest from the public at this point in time to address public transit, it may be in the township's best interest to plan for public transit services. The township could require new residential and commercial developments to install bus stops for residents and/or customers.

FARMLAND and FARMING

Prime, Unique and Important Farmlands

The National Environmental Policy Act defines several classifications of farmland including Prime and Unique farmland. The prime and unique farmland in Pipestone Township can be seen on the Prime and Unique Farmland Map.

Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses (the land could be cropland, pastureland, rangeland, forest land, or other land, but not urban built-up land or water). It has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed, including water management, according to acceptable farming methods. In general, prime farmlands have an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, acceptable salt and sodium content, and few or no rocks. They are permeable to water and air. Prime farmlands are not excessively erodible or saturated with water for a long period of time, and they either do not flood frequently or are protected from flooding.

Unique farmland is land other than prime farmland that is used for the production of specific high value food and fiber crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality and/or high yields of a specific crop when treated and managed according to acceptable farming methods.

As seen from the 2000 Land Use Cover Map, agricultural activities are the most dominant land use activity in the township. In addition, there are still large parcels of land intact in the township. The prime and unique farmlands are mostly in the southeastern and northwestern portion of the township. To date, municipal water and sewer services have not reached the township and there are no plans to extend services. In addition, the parcel map shows that there are still large parcels intact in Pipestone Township.

The climate, terrain and variety of soils make several areas in Berrien County well suited for agriculture. Open space lands including woodlands, wetlands and other environmentally significant areas are features normally associated with farmlands and agricultural areas. These lands provide unique and economic benefits to the citizens of Pipestone Township and are an important part of the township's natural and agricultural heritage. Agriculture also contributes to the local economy through local farm markets, agri-tourism activities and in direct sales of agricultural products. Many of the agricultural activities in Pipestone Township provide the opportunity to harvest locally grown foods to sell at roadside stands, farmers markets and local retail food stores to increase tourism and the economic impact of agriculture.

Agriculture is an important economic activity for Berrien County (statistics of economic impact at the township level are not available). In 2004, Berrien County ranked #1 in grapes, #2 in apples, #4 in blueberries and #5 in asparagus for the State of Michigan. In 2002, there were 1,093 farms in Berrien County. This includes 369 orchards, 155 vegetable farms and 240 grain

corn farms. There were a total of 174,009 acres of land in farms with 16,352 acres in orchards, 7,391 acres in vegetables, 41,376 acres in grain corn and 51,409 in soybeans. The average size of a farm in Berrien County in 2002 was 159 acres and the median size was 53 acres. In 2002, in Berrien County the average market value of agricultural products sold per farm is \$88,487 with the total market value of agricultural products in the County valued at \$96,716,000.

Farmland and agriculture provide important economic, cultural and aesthetic benefits to Pipestone Township, Berrien County and the State of Michigan.

Berrien County Farmland and Agricultural Statistics 1987 – 2002

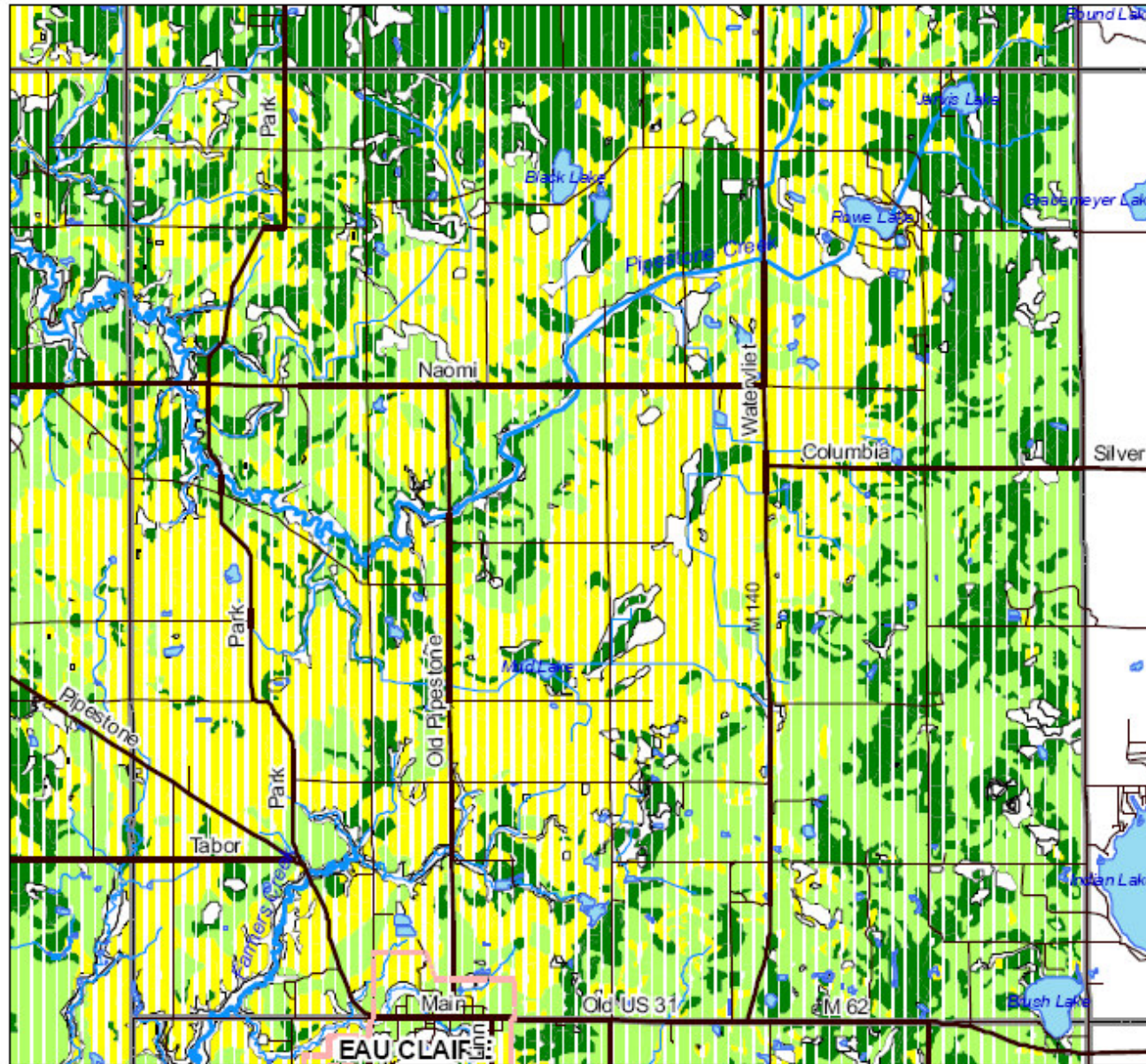
	1987	1992	1997	2002
Total Acres of Farmland	179,660	166,886	173,958	174,009
In Orchards	24,197	24,300	19,768	16,352
In Vegetables	7,680	6,420	5,903	7,391
In Corn (for grain)	38,166	39,889	43,846	41,376
In Soybeans	26,110	29,518	41,765	51,409

Total Number of Farms	1,479	1,312	1,182	1,093
# of Orchards	687	625	479	369
# of Vegetable Farms	298	245	185	155
Average Size of Farm	121	127	147	159
Median Size of Farm	N*	N*	50	53
Total Market Value of Agricultural Products	\$63,420,000	\$68,223,000	\$81,376,000	\$96,716,000
Average Market Value of Agricultural Products per Farm	\$42,881	\$51,999	\$68,846	\$88,487

*N – No data available

Source: US Department of Agriculture, 1987, 1997, 2002 Census of Agriculture

Prime and Unique Farmland



Legend

- Prime farmland
- Farmland of local importance
- Prime farmland if drained and protected from flooding
- Not prime farmland

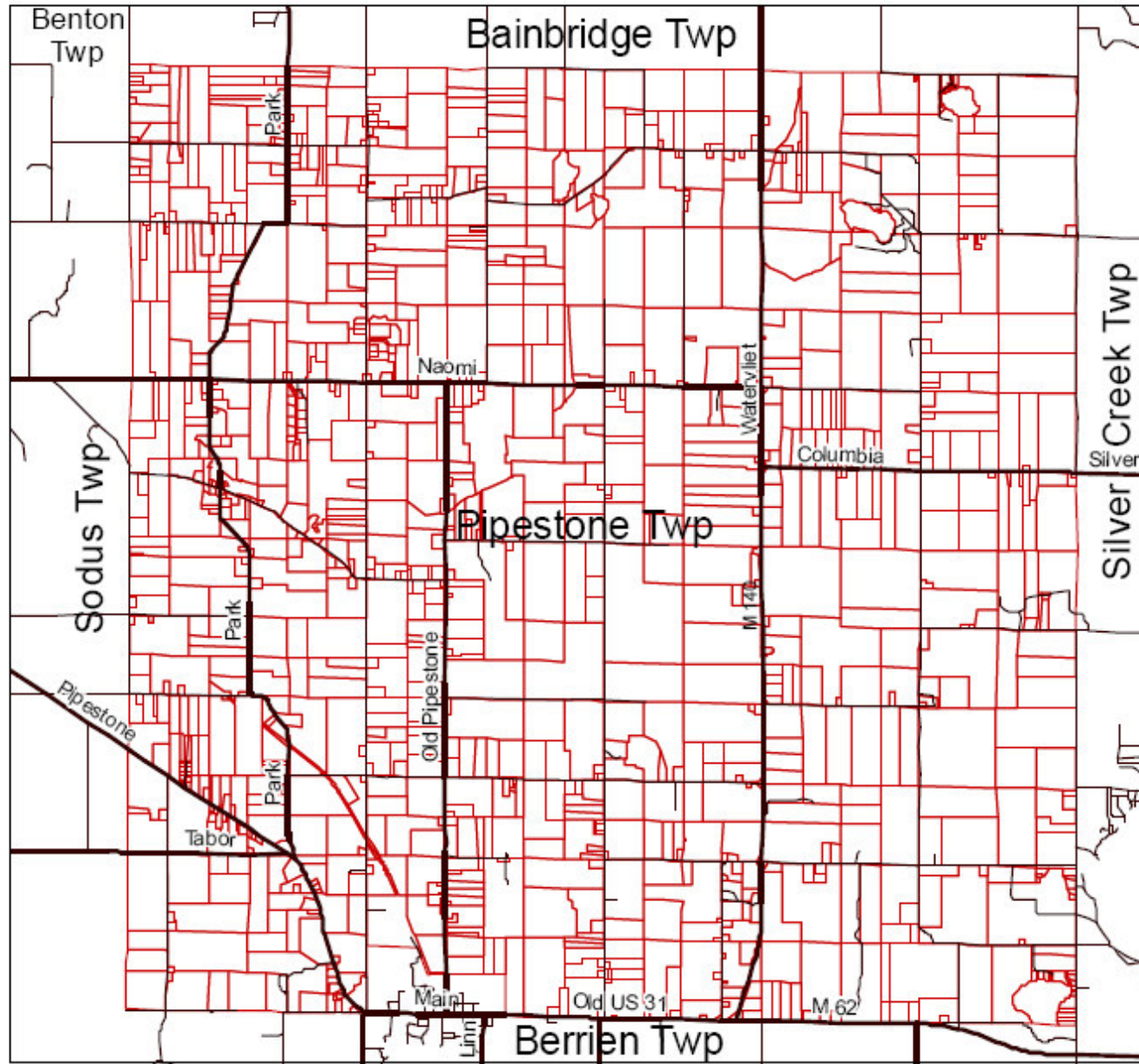
Data Source:

Base Map: Michigan Center for Geographic Information, Framework v4
 Berrien County Soil Survey: conducted by the USDA and NRCS, correlation date 4/1/1979, distribution date 12/15/2004

Prepared November 2006
**Southwest Michigan
 Planning Commission**

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 Website: www.swmpc.org

Pipestone Township



Legend

 Parcels

Data Source:
Base Map: Michigan Center for Geographic Information, Framework v4
Parcels: Berrien County, 2005

Prepared November 2006
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Analysis

Portions of Berrien County are experiencing substantial residential development. Growth is slow to moderate in Pipestone Township. Historically, Pipestone Township and many other areas in Berrien County were predominantly farming communities; however, increasing growth pressure is resulting in farmland being developed and fragmented. The fragmentation of farmland will make it increasingly difficult for remaining farming operations to remain viable. The land that is suitable for farming is an irreplaceable natural resource that cannot be regained once it has been lost to development.

Farmland is an important part of Berrien County and Pipestone Township's history, culture and economic structure. According to the 2003 Berrien County Development Plan, in 1997 almost half of the land in Berrien County was farmland. Yet, very little has been done to preserve this resource. The Berrien County Development Plan states, "now is the time to use sound planning principles to direct urban growth in a way that minimizes the negative impact on agriculture, before it is too late."

Several programs and zoning strategies are available to manage growth and preserve farmland. Agricultural preservation methods primarily fall in one of four categories:

- 1) Purchase of agricultural easement programs (such as Berrien County's Purchase of Development Rights Program);
- 2) Right to farm laws;
- 3) Agricultural or sliding scale zoning; and
- 4) Circuit breaker tax relief credits.

No one technique is right for all areas. The Pipestone Township resident survey showed strong support for maintaining rural character and preserving farmland in Pipestone Township. In the community survey, the two most popular reasons that people feel that Pipestone Township is a desirable place to live are 1) its rural atmosphere and 2) the surrounding farmland and open space. Seventy-four percent of the respondents strongly agree or agree that the preservation of prime farmland should be a top priority for the township. Forty-five percent of the respondents believe that the township should preserve prime farmland by requiring stricter agricultural zoning requirements (ex. one house per 40 acres). There is also more support (47%) for the township to purchase land for farmland preservation and open space preservation (44%) than for parks and recreation (38%). The survey results show that there is significant value that residents place on maintaining open spaces, rural character and farmland.

DEMOGRAPHICS

Regional Comparisons

To present a relevant analysis of demographic data, the following levels of geography were selected:

<i>Subject Township:</i>	Pipestone
<i>Comparative Townships:</i>	Bainbridge, Berrien, Sodus
<i>County:</i>	Berrien
<i>State:</i>	Michigan
<i>Region:</i>	Southwest Michigan <i>(Van Buren, Cass, and Berrien Counties)</i>
<i>Nation:</i>	United States

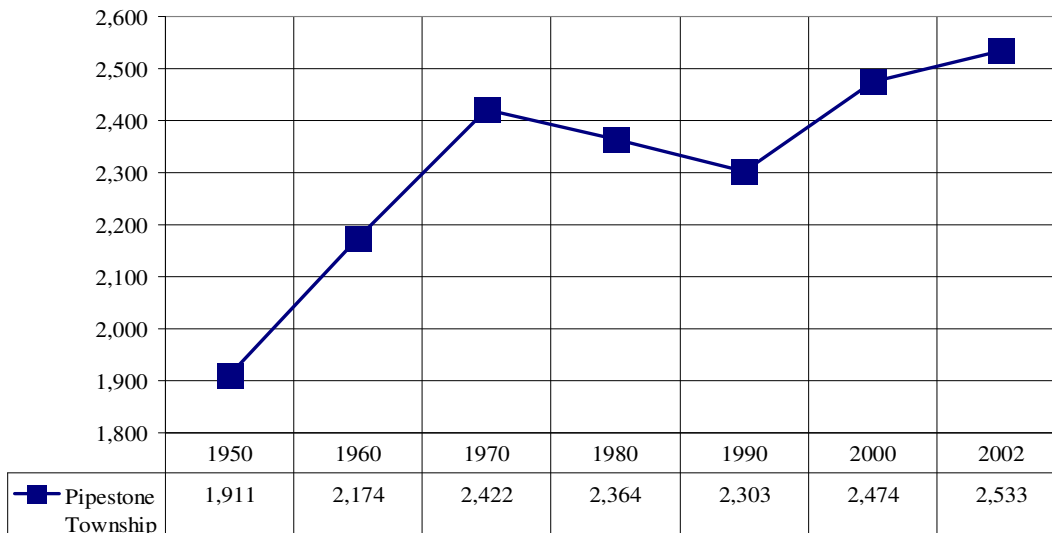
The townships of Bainbridge, Berrien, and Sodus were selected due to their proximity to the subject township and their similarities in population and other demographic categories. To obtain a broader perspective, geographic levels ranging from county to national were also chosen for certain comparison purposes.

Population

Population History

The United States Census taken in 2000 reported Pipestone Township had a population of 2,474 people*. Pipestone Township includes a portion of Eau Claire Village. The U.S. Census data includes villages or parts of villages within the township(s). In a report published by the Census Bureau in March 2005, the population was *estimated* to be 2,533 as of July 2002.³ The township’s population has remained fairly constant since the 1950 U.S. Census with a difference of only 622 persons between the lowest and the highest population counts.

*Population History
Pipestone Township
1950-2002*



³ <http://www.nwmcog.org/data/CensusTrends/MI-SUB-EST2002-MCDs.pdf>

* See Definitions in Appendix

Population History – Regional Comparisons

Between the 1980 and 1990 Census, the southwest region of Michigan (Berrien, Cass, and Van Buren Counties) experienced a decline in population that was shared by Pipestone Township, as well as the townships of Sodus, Bainbridge, and the County of Berrien as a whole. Between the 1990 and 2000 Census, the same municipalities experienced similar increases in population as well. Pipestone Township in particular experienced a 7.4 percent increase that was higher than Berrien County (0.7%) and the State of Michigan (6.9%).

*Population History
Township and Regional Comparisons
1970-2000*

	1970	1980		1990		2000	
	Population Count	Population Count	Percent Change	Population Count	Percent Change	Population Count	Percent Change
Pipestone Township	2,422	2,364	-2.4%	2,303	-2.6%	2,474	7.4%
Bainbridge Township	2,784	2,879	3.4%	2,865	-0.5%	3,132	9.3%
Berrien Township	3,905	4,302	10.2%	4,697	9.2%	5,075	8.0%
Sodus Township	2,504	2,260	-9.7%	2,065	-8.6%	2,139	3.6%
Berrien County	163,940	171,276	4.5%	161,378	-5.8%	162,453	0.7%
Southwest Michigan	263,425	287,589	9.2%	280,915	-2.3%	289,820	3.2%
State of Michigan	8,881,826	9,262,078	4.3%	9,295,297	0.4%	9,938,444	6.9%

Population Projections

Pipestone Township is expected to see slow, steady growth from 2005-2030 with a total increase in population of 269 persons.

Population Projections
Township Comparisons
2000-2030*

Municipality	2000	2005	2010	2015	2020	2025	2030
Bainbridge Twp	3,132	3,232	3,274	3,321	3,381	3,502	3,617
Berrien Twp	5,075	5,438	5,499	5,565	5,655	5,848	6,028
Sodus Twp	2,139	2,202	2,211	2,223	2,244	2,306	2,362
Pipestone Twp	2,474	2,601	2,627	2,656	2,697	2,787	2,870

*Population projects were provided by MDOT.

Population Density

The townships of Pipestone, Bainbridge, and Berrien are very similar in size (land area in square miles). Berrien and Sodus Townships, however, have a much higher population and number of housing units per square mile. This is primarily due to the villages of Berrien Springs and Eau Claire being partially encompassed by those townships.

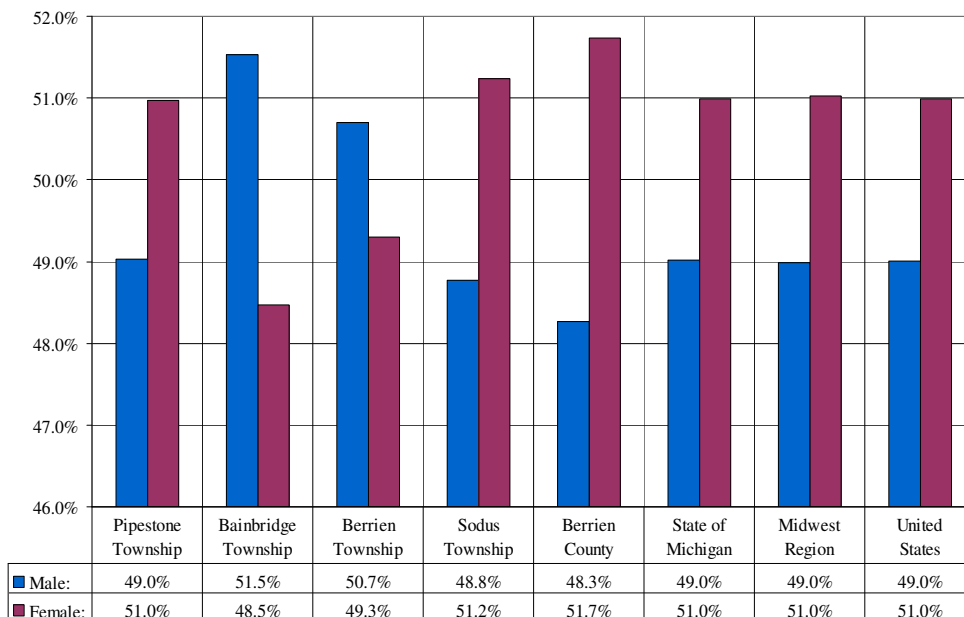
*Population Density
Township Comparisons
2000 Census*

	Land Area in Square Miles	Population per Square Mile	Housing Units per Square Mile
Pipestone Township	35.7	69.4	25.2
Bainbridge Township	35.2	89.1	36.8
Berrien Township	35.3	143.7	52.1
Sodus Township	19.5	109.9	49.0

Population Distribution by Gender

The distribution of population by gender in Pipestone Township remained virtually constant between the 1990 and 2000 Census. Of the 2,474 total persons reported in the 2000 Census, 1,213 were male and 1,261 were female. This distribution percentage indicating more women than men is consistent throughout the national, regional, State, and County levels. The nearby townships of Bainbridge and Berrien, however, have a higher percentage of males to females.

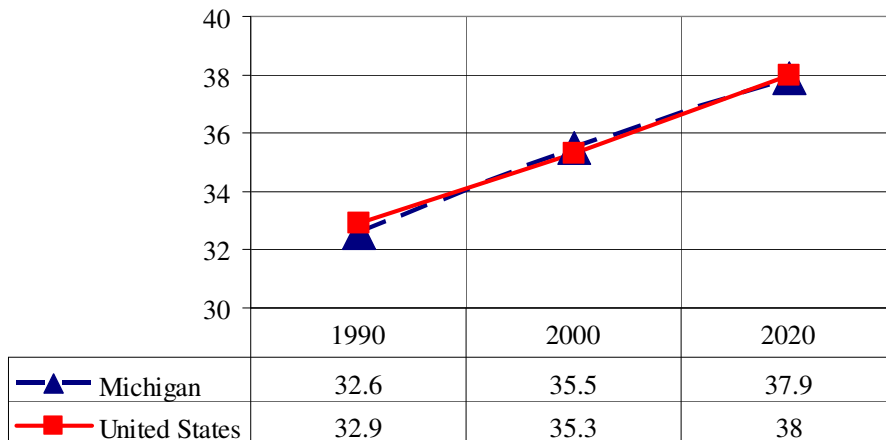
*Population Distribution by Gender
Township and Regional Comparisons
2000 Census*



Median Age of Population

According to the 2000 Census, the median age in America reached its highest point ever at 35. This is three years above 32.9 years in 1990. By "median age," the Census Bureau means that half of the American people are now older and half younger than 35.3 years. The State of Michigan's population is also aging. In 1990 Michigan's median age was 32.6 years; now it is 35.5, and by 2020 it is expected to be 37.9. More than one million people (12.3 percent of the total population) are aged 65 and older in Michigan; a 10 percent increase from 1990. The oldest Michigan citizens (85 and older) are growing in number as well and at a faster rate than other age groups. There now are nearly 142,500 in this age group (1.4 percent of the total population), a 33.3 percent increase from 1990.⁴

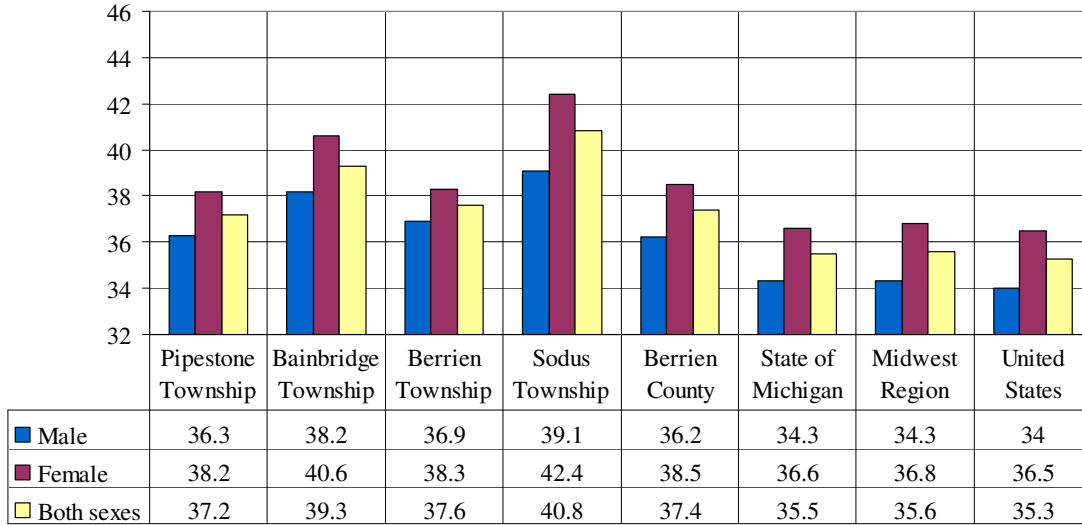
*Median Age Projections
State and National Comparisons*



⁴ <http://www.michiganinbrief.org/edition07/Appendices/AppendixA.htm>

The median age for the total population of Pipestone Township was 37.2 years in the 2000 Census. Note the surrounding townships of Bainbridge and Sodus have an even higher median age.

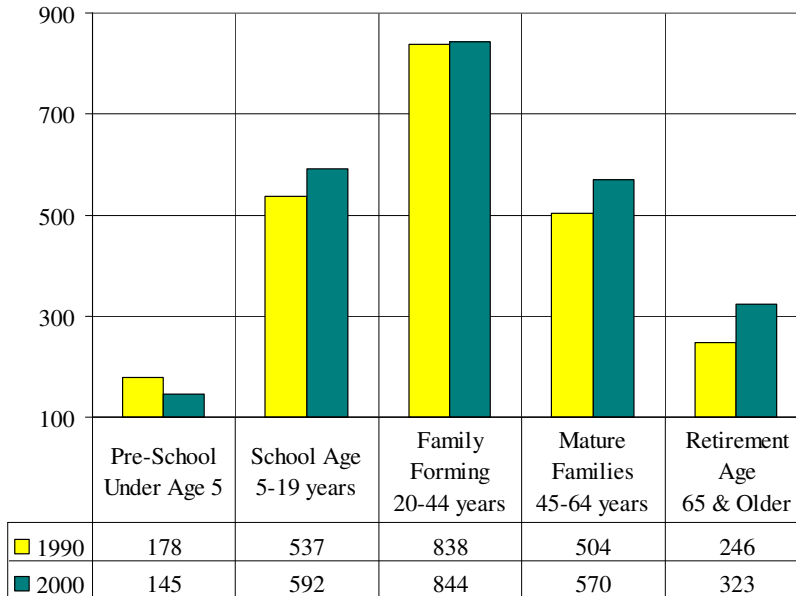
*Median Age
Township and Regional Comparisons
2000 Census*



Population Distribution by Age Groups

The majority of Pipestone Township’s population is in the “Family Forming” age group of 20-44 years. Along with the increase in “Mature Families” (45-64 years of age) and “Retirement Age” (65 years & older) groups, the local population is similar to national trends.

*Population Distribution by Age Groups
Pipestone Township
1990-2000*



Racial Composition

The population of Pipestone Township, as well as the other comparative townships, is comprised of a higher percentage of individuals reporting their race as “White” than Berrien County and the State of Michigan.

*Composition of Population by Race
Township and Regional Comparison
2000 Census*

	Pipestone Township	Bainbridge Township	Berrien Township	Sodus Township	Berrien County	State of Michigan
White	90.2%	95.5%	88.0%	87.2%	79.7%	80.2%
Black or African American	4.9%	0.6%	5.4%	8.4%	15.9%	14.2%
American Indian & Alaskan Native	0.8%	0.7%	0.7%	0.3%	0.4%	0.6%
Asian	0.2%	0.1%	1.7%	0.0%	1.1%	1.8%
Hawaiian/other Pacific Islander	0.0%	0.1%	0.1%	0.2%	0.0%	0.0%
Some other race	2.9%	1.9%	2.0%	1.3%	1.1%	1.3%
Two or more races	1.0%	1.2%	2.2%	2.6%	1.6%	1.9%

Analysis

The residents of Pipestone Township are older, on average, than the rest of the residents in the State of Michigan. The median age in Pipestone Township is 37.2 compared to the median age in Michigan at 35.5. One observation is that the growth of the “mature family” and “retirement age” groups outpaces the younger groups in Pipestone Township. This follows the national trends. The decision facing those in Pipestone Township is whether they can and want to alter this trend. An older population does imply longer terms of residency. This can mean more citizen involvement in local issues. It can also mean more pressures on local services, such as fire and emergency medical. An older average age population is not a negative. But it has been interpreted in other jurisdictions to mean substantial resistance to millage and other tax-based funding of such public institutions as schools and sewer systems. The township faces a problem of not being able to provide the services anticipated for the future population. These needs and services are undefined and, in many ways, cannot be accurately quantified. Pipestone Township trustees will need to make some future determinations, if the population continues aging.

Housing

Family Size

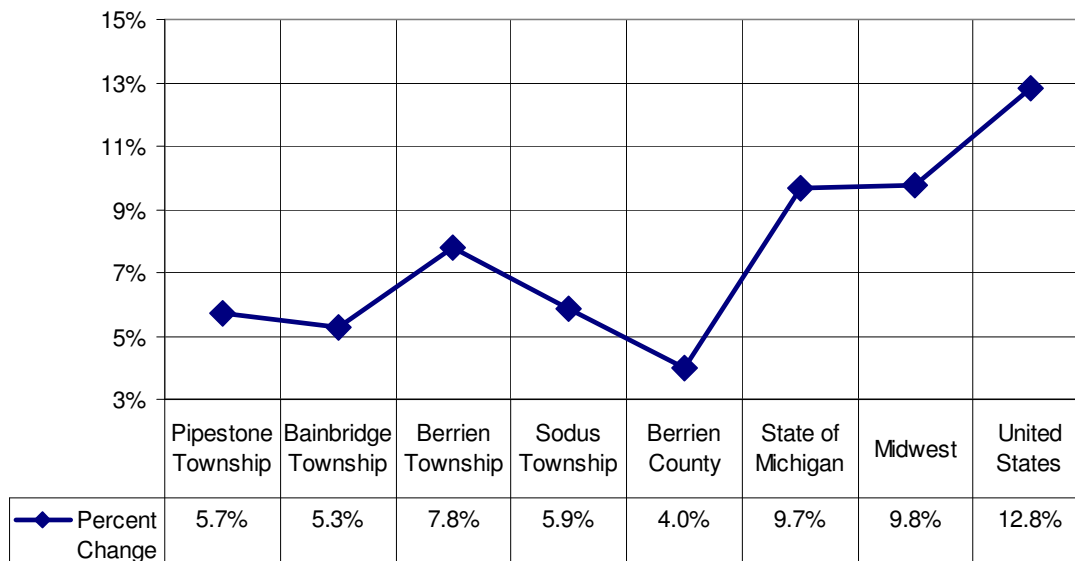
In Pipestone Township, the average size of family is 3.25. This is higher than the comparison townships, county, state, Midwest and the U.S. "Size of family" includes the family householder and all other people in the living quarters related to the householder by birth, marriage, or adoption. "Source: U.S. Census Bureau, Population Division, Fertility & Family Statistics Branch.

Area	Average Size of Family
United States	3.16
Midwest	3.14
Michigan	3.16
Berrien County, Michigan	3.10
Bainbridge Township	3.01
Berrien Township	3.16
Pipestone Township	3.25
Sodus Township	2.96

Number of Households

The number of households has increased by 5.7% in Pipestone Township from 1990 to 2000. This is slower than the State, Midwest and U.S. However, it is in line with the comparison townships and higher than the county.

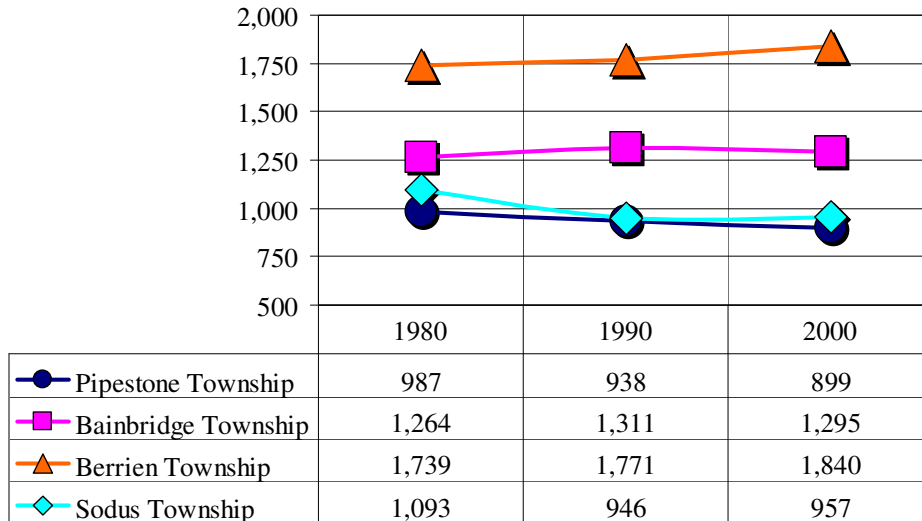
*Percent of Change in Number of Households
Regional Comparisons 1990-2000*



Total Housing Units

The total number of housing units includes the categories of owner-occupied, vacant, and renter-occupied. The chart below shows a decline of 88 total housing units in Pipestone Township from 1980 through 2000.

*Housing Units
Township Comparisons
1980-2000*



Most of the decrease in housing units in Pipestone Township is due to the loss of 84 migrant worker housing units from 1990 to 2000. A further summary of the housing units in Pipestone Township is shown in the following table.

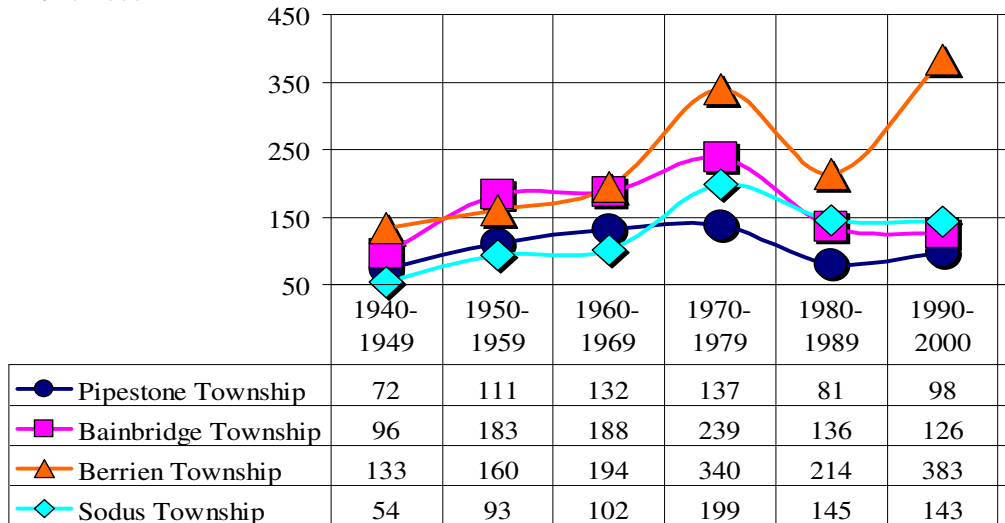
Housing Units Description	1990	2000	Change
Occupied	794	842	+48
Vacant	144	57	-87
Total Housing Units	938	899	-39

<i>Vacant Housing Unit Description</i>			
For rent	5	9	+4
For sale only	9	8	-1
Rented or sold, not occupied	3	2	-1
For seasonal, recreational, or occasional use	24	17	-7
For migrant workers	88	4	-84
Other vacant	15	17	+2
Total Vacant Housing Units:	144	57	-87

Age of Housing Units

The following two charts show a dramatic housing boom in the 1970s for every township in the comparative region. While building in each of these townships also dramatically declined in the 1980s, only Berrien Township has shown a sharp increase in the 1990s.

*Years Structures Built
Township Comparisons
1940-2000*



The chart below highlights the peak residential construction periods for each township from 1940 to 2000. Most of the houses in Pipestone Township were built between 1950 and 1979 (380 structures). The housing stock is overall quite old in the township.

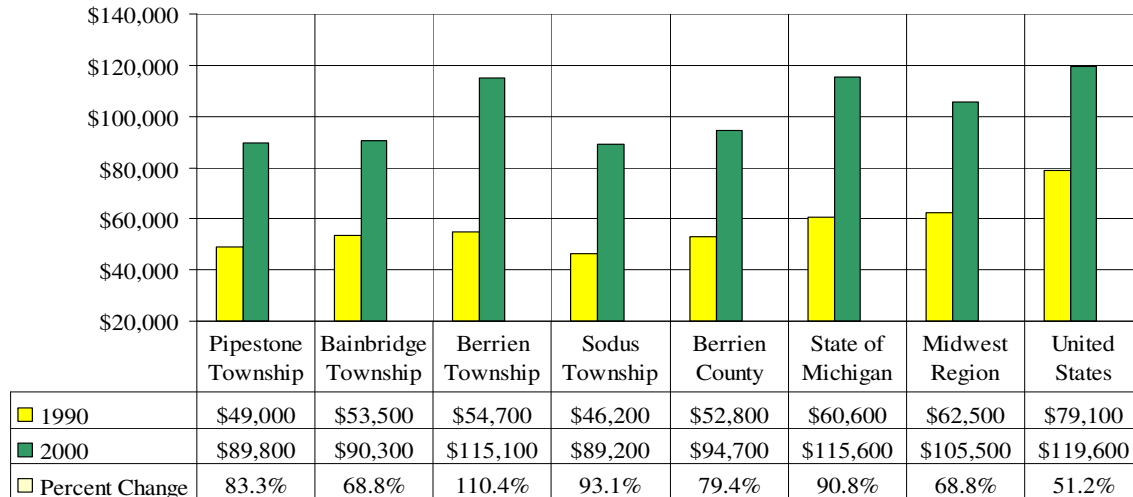
*Detail of Housing Structures Built
Township Comparisons*

	1940-1949	1950-1959	1960-1969	1970-1979	1980-1989	1990-2000
Pipestone Township	72	111	132	137	81	98
Bainbridge Township	96	183	188	239	136	126
Berrien Township	133	160	194	340	214	383
Sodus Township	54	93	102	199	145	143

Housing Values

Between the 1990 and 2000 Census, median values of housing showed a marked increase at every geographic level. Housing values in Pipestone Township are slightly less than the rate of increase for the State of Michigan but surpassed the value increases in Berrien County, the Midwest Region and the United States.

*Housing Median Values
Township and Regional Comparisons
1990-2000*



Owner Occupied Housing

As shown on the previous chart, housing values increased substantially from 1990 to 2000. The following chart shows the breakdown of housing units at each value level. Note the greatest change is reflected in the number of houses currently valued below \$50,000 and a large increase in houses now valued between \$100,000 and \$149,999. Although the total number of housing units has declined, the number of owner-occupied housing has increased by 98 units from 1990 to 2000.

*Housing Value Comparison
Pipestone Township
1990-2000*

Values of Owner-Occupied Housing	1990	2000	Gain/Loss
Less than \$50,000	152	35	-117
\$50,000-99,999	135	210	+75
\$100,000-149,999	6	97	+91
\$150,000-199,999	3	35	+32
\$200,000-299,999	0	13	+13
\$300,000-499,999	0	2	+2
\$500,000-999,999	0	0	0
\$1,000,000 or more		2	+2
Total Owner-Occupied Units	296	394	+98

Analysis

Household size is a defining characteristic developed by the U.S. Census Bureau to address the national trend of unrelated and unmarried persons living together in a single dwelling unit. It is not a “family” defined by relationships of marriage, birth or adoption. One example would be when a man and woman, each of whom have children of their own, marry and bring all of their children into one house. The children may not be adopted into this new family, rather keeping their previous surnames. This would not be a “family” under the U.S. Census definition. Yet, this situation is occurring with frequency. There are other examples. A situation were, for economic reasons, two or more people share ownership and occupancy of a house. Household size is important to the township in terms of providing adequate sanitary and sleeping facilities for the number of occupants.

House values have increased substantially from 1990 to 2000. This may be due to inflation and to the willingness of families to commute longer distances to work and other activities in order to find adequate, affordable housing. As compared to more urban areas, the housing values for Pipestone Township seem reasonable, if not attractive, to those in nearby larger urban centers. Values should continue to appreciate unless housing stock in Pipestone Township has a dramatic increase in the next decade. There is no evidence of significant speculative building in Pipestone Township. The majority of housing structures in Pipestone Township were built in the 1960’s and 1970’s. In addition, these housing units are served by septic systems. There should be a concern for failing septic systems in the township and its impact on ground and surface water quality.

Education and School Districts

Educational Attainment

The following tables demonstrate the highest level of educational attainment achieved in comparative geographic areas and the percentage of the population that has reached each level. It is clear that in both the 1990 and 2000 Census, each comparative area shows a majority of the population with a high school diploma or equivalency. Pipestone Township showed an increase in post-high school educational attainment from 1990 to 2000, especially at the Associate degree level.

Pipestone Township residents generally have higher percentages of education achievement than the rest of the State of Michigan and the United States in all categories up to and including college associates degree. However, they lag behind by nearly 50% in bachelor's and advanced college degrees earned according to 2000 statistics. The 50% gap is an improvement from the 1990 gap of 33%.

Gender Comparisons

There is currently very little difference overall in the educational attainment levels for men and women in Pipestone Township. Approximately 60 percent of both men and women have achieved up to the level of high school diploma or equivalent. There is also an equal percentage (40 percent) of men and women who have attended at least some college and continued through to advanced degrees.

*Education Attainment – Pipestone Township
1990-2000 (US Census)*

1990	Pipestone Township	Bainbridge Township	Berrien Township	Sodus Township	Berrien County	State of Michigan	Midwest Region	United States
Less than 9th grade	15.5%	11.9%	12.5%	17.5%	10.1%	7.8%	9.1%	10.4%
9th-12th grade, no diploma	15.4%	15.9%	14.5%	12.7%	15.2%	15.5%	13.8%	14.4%
High school graduate (includes equivalency)	38.9%	33.5%	26.9%	31.5%	31.9%	32.3%	34.0%	30.0%
Some college, no degree	18.3%	19.9%	20.5%	20.1%	19.1%	20.4%	18.6%	18.7%
Associate degree	4.9%	7.4%	7.1%	6.7%	7.0%	6.7%	6.2%	6.2%
Bachelor's degree	4.5%	8.1%	8.9%	7.5%	10.4%	10.9%	12.1%	13.1%
Graduate or professional degree	2.4%	3.3%	9.7%	4.1%	6.3%	6.4%	6.3%	7.2%
2000	Pipestone Township	Bainbridge Township	Berrien Township	Sodus Township	Berrien County	State of Michigan	Midwest Region	United States
Less than 9th grade	10.2%	10.5%	8.3%	11.1%	5.7%	4.7%	5.6%	7.5%
9th-12th grade, no diploma	15.8%	13.4%	11.3%	12.5%	12.4%	11.9%	10.9%	12.1%
High school graduate (includes equivalency)	33.9%	36.9%	27.7%	34.4%	31.9%	31.3%	32.4%	28.6%
Some college, no degree	21.4%	19.8%	20.4%	22.9%	22.7%	23.3%	21.7%	21.0%
Associate degree	8.6%	7.1%	9.1%	7.1%	7.7%	7.0%	6.4%	6.3%
Bachelor's degree	6.3%	10.3%	13.0%	7.9%	12.2%	13.7%	15.0%	15.5%
Graduate or professional degree	3.9%	1.9%	10.3%	4.1%	7.4%	8.1%	7.9%	8.9%

*Gender Comparison of Educational Attainment Levels
Pipestone Township
2000 (US Census)*

Educational Attainment Level	Male	Female	Percent of Total		Percent Above and Below High School Equivalency	
			Male	Female	Male	Female
No schooling completed	3	4	0%	0%		
Nursery to 4th grade	10	8	1%	1%		
5th and 6th grade	31	15	4%	2%		
7th and 8th grade	46	46	6%	6%		
9th grade	42	21	5%	3%		
10th grade	28	23	4%	3%		
11th grade	33	51	4%	6%		
12th grade, no diploma	40	15	5%	2%		
High school graduate (includes equivalency)	238	303	31%	37%		
					<i>(Percent of total up to high school graduate level)</i>	
Some college, less than 1 year	92	93	12%	11%		
Some college, 1 or more years, no degree	86	70	11%	9%		
Associate degree	58	79	7%	10%		
Bachelor's degree	38	62	5%	8%		
Master's degree	25	20	3%	2%		
Professional school degree	4	7	1%	1%		
Doctorate degree	6	0	1%	0%	40%	40%
Total	780	816			<i>(Percent of total beyond high school level)</i>	

School District Enrollment

Eau Claire and Dowagiac school systems serve Pipestone Township. The Eau Claire School District serves the majority of Pipestone Township. Schools in all districts are reported to be below capacity. Lake Michigan College and the Southwestern Michigan College provide local secondary education opportunities for residents of Pipestone Township.

The Eau Claire School District has 2 schools, Lybrook Elementary and Eau Claire Middle/High School. A small portion of Pipestone Township is in the Dowagiac School District which has Sister Lakes Elementary located just to the east of Pipestone Township. Dowagiac Middle School and High School are located in Dowagiac. Countryside Charter School is also a public school option available to Pipestone Township. This is a charter school with pre-kindergarten to 12th grade available. A private school located near Pipestone Township is the Eau Claire Seventh-Day Adventist School with an enrollment of 25 students in 2003-2004.

Following are some basic statistics on each school in the Pipestone Township area.

School Name: Lybrook Elementary School	District Name: Eau Claire Public Schools	County: Berrien						
Mailing Address: 6238 W. Main Street Eau Claire, MI 49111-9328	Physical Address: 6238 W. Main Street Eau Claire, MI 49111-9328	Phone: 269-461-6191						
Grade Span: (grades KG - 6)	Type:	Regular school						
Total Students: 448	Locale/Code:	Rural, inside CBSA / 8						
Classroom Teachers (FTE): 30.0	Status:	Currently operational						
Student/Teacher Ratio: 14.9								
Charter: no Magnet: N/A Title I School: no Title I School-Wide Program: N/A								
Enrollment by Grade:								
	KG	1	2	3	4	5	6	Ungraded
Students	85	57	62	46	51	69	78	0
Enrollment by Race/Ethnicity:								
	Amer Ind/ Alaskan	Asian	Black	Hispanic	White			
Students	1	0	43	150	254			
Enrollment by Gender:								
	Male	Female	Unknown					
Students	240	208	0					
Free lunch eligible: 272			Reduced-price lunch eligible: 32			Migrant Students: 7		
<small>Note: Details may not add to totals.</small>								

Source: CCD Public school data 2004-2005 school year

School Name: Eau Claire Middle/High School	District Name: Eau Claire Public Schools	County: Berrien					
Mailing Address: 7450 Hochberger Road Eau Claire, MI 49111-9762	Physical Address: 7450 Hochberger Road Eau Claire, MI 49111-9762	Phone: 269-461-6997					
Grade Span: (grades 7 - 12)	Type:	Regular school					
Total Students: 408	Locale/Code:	Rural, inside CBSA / 8					
Classroom Teachers (FTE): 30.8	Status:	Currently operational					
Student/Teacher Ratio: 13.2							
Charter: no Magnet: N/A Title I School: no Title I School-Wide Program: N/A							
Enrollment by Grade:							
	7	8	9	10	11	12	Ungraded
Students	71	66	75	76	69	51	0
Enrollment by Race/Ethnicity:							
	Amer Ind/ Alaskan	Asian	Black	Hispanic	White		
Students	1	0	70	78	259		
Enrollment by Gender:							
	Male	Female	Unknown				
Students	200	208	0				
Free lunch eligible: 189		Reduced-price lunch eligible: 27			Migrant Students: 1		
<small>Note: Details may not add to totals.</small>							

Source: CCD Public school data 2004-2005 school year

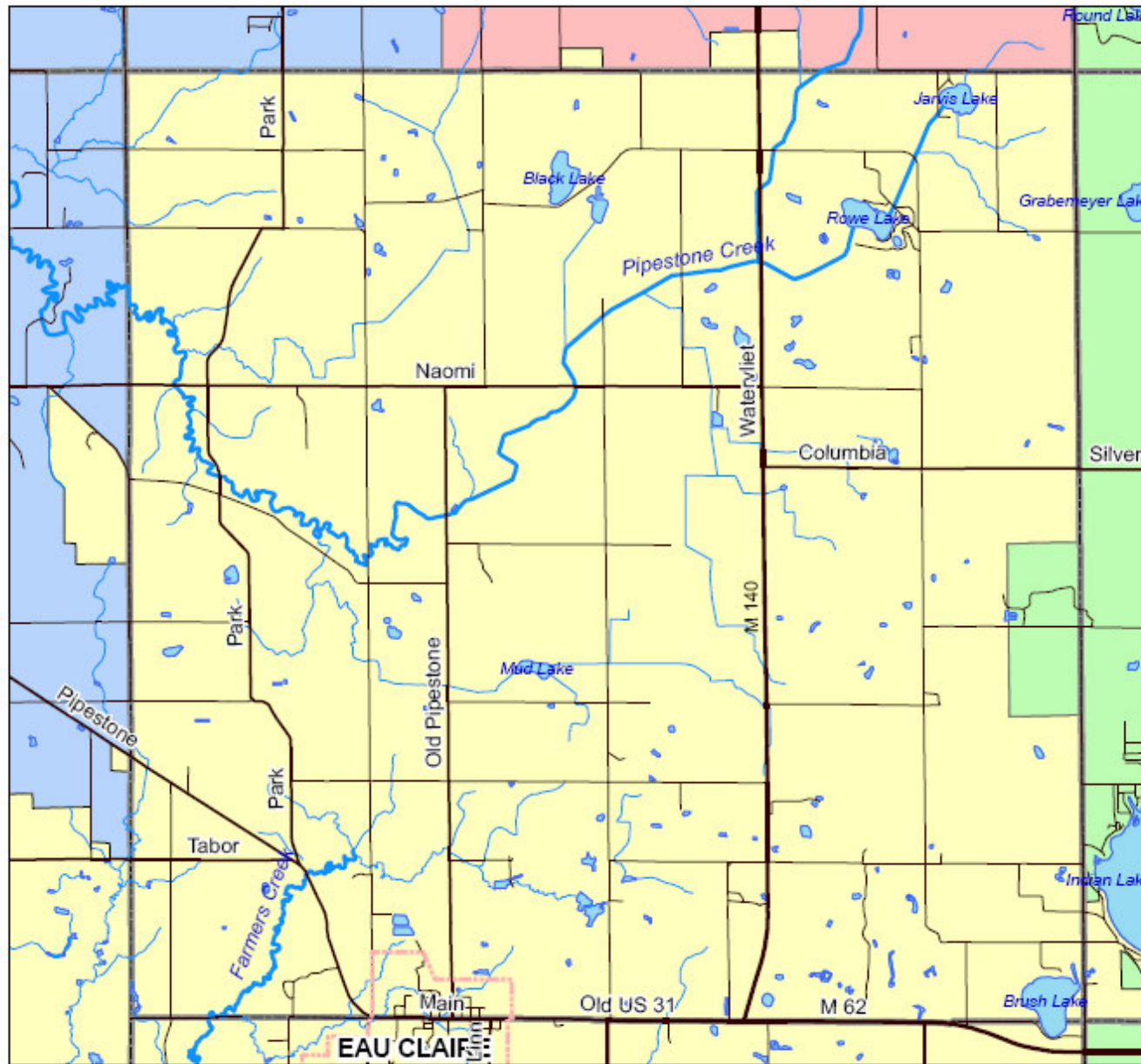
School Name: Sister Lakes Elementary School	District Name: Dowagiac Union School District	County: Van Buren				
Mailing Address: 206 Main Street Dowagiac, MI 49047-1743	Physical Address: 68079 M-152 Benton Harbor, MI 49022-9360	Phone: 269-424-3101				
Grade Span: (grades KG - 4)	Type:	Regular school				
Total Students: 304	Locale/Code:	Rural, inside CBSA / 8				
Classroom Teachers (FTE): 15.3	Status:	Currently operational				
Student/Teacher Ratio: 19.9						
Charter: no Magnet: no Title I School: no Title I School-Wide Program: N/A						
Enrollment by Grade:						
	KG	1	2	3	4	Ungraded
Students	76	53	63	62	50	0
Enrollment by Race/Ethnicity:						
	Amer Ind/ Alaskan	Asian	Black	Hispanic	White	
Students	7	1	9	131	156	
Enrollment by Gender:						
	Male	Female	Unknown			
Students	163	141	0			
Free lunch eligible: 174			Reduced-price lunch eligible: 22		Migrant Students: 117	
<small>Note: Details may not add to totals.</small>						

Source: CCD Public school data 2004-2005 school year

School Name: Countryside Charter School- Elementary and High School	District Name: Countryside Charter School	County: Berrien												
Mailing Address: 4800 Meadowbrook Road Benton Harbor, MI 49022	Physical Address: 4800 Meadowbrook Road Benton Harbor, MI 49022	Phone: 269-944-3319												
Grade Span: (grades PK - 12)	Type:	Regular school												
Total Students: 586	Locale/Code:	Rural, inside CBSA / 8												
Classroom Teachers (FTE): N/A	Status:	New School												
Student/Teacher Ratio: N/A														
<p>Charter: yes Magnet: no Title I School: yes Title I School-Wide Program: yes</p>														
Enrollment by Grade:														
	PK	KG	1	2	3	4	5	6	7	8	9	10	11	12
Students	0	68	71	35	39	54	52	51	43	58	50	30	23	12
Enrollment by Race/Ethnicity:														
	Amer Ind/ Alaskan	Asian	Black	Hispanic	White									
Students	4	1	262	40	278									
Enrollment by Gender:														
	Male	Female	Unknown											
Students	292	293	0											
<p>Free lunch eligible: 112 Reduced-price lunch eligible: 101 Migrant Students: N/A</p>														
<p>Note: Details may not add to totals.</p>														

Source: CCD Public school data 2004-2005 school year

School Districts



Legend

School Districts

- Benton Harbor Area Schools
- Dowagiac Union Schools
- Eau Claire Public Schools
- Watervliet School District

Data Source:

Base Map: Michigan Center for Geographic Information, Framework v4

Prepared November 2006
**Southwest Michigan
 Planning Commission**
 Tel: 269-925-1137 Fax: 269-925-0288
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 Website: www.swmpc.org



Analysis

Pipestone Township is served mostly by the Eau Claire School District. A small portion of the township is part of the Dowagiac School District. The perceived “quality of education” is an important influence in decisions families make about where they will live. From the public visioning sessions it is apparent that the quality of education is not perceived well by the majority of the community. It is very important that all of the community be involved or at least be interested in the school system. Pipestone Township has no direct involvement in or decision-making authority over school matters, but since the township is a significant public entity that represents the best intentions for its residents, it should be aware of and comment on any school matter that affects the townships general welfare. It is recommended that the lines of communication between the school system and the township be improved.

Employment

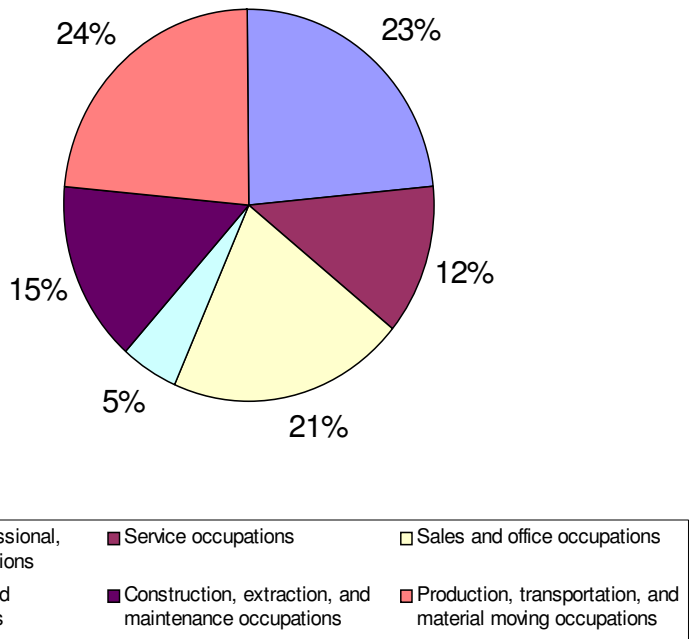
Labor Force

The labor force statistics used for the following information are based on the civilian population of workers age 16 years and over. Pipestone Township’s labor force consists of 1,182 workers that include 659 males and 523 females.

Occupations

The chart shows the distribution of the labor force in Pipestone Township by occupational category per the U.S. Census. The majority of the occupations in Pipestone Township are production, transportation, and material moving (24%) and management, professional and related occupations (23%).

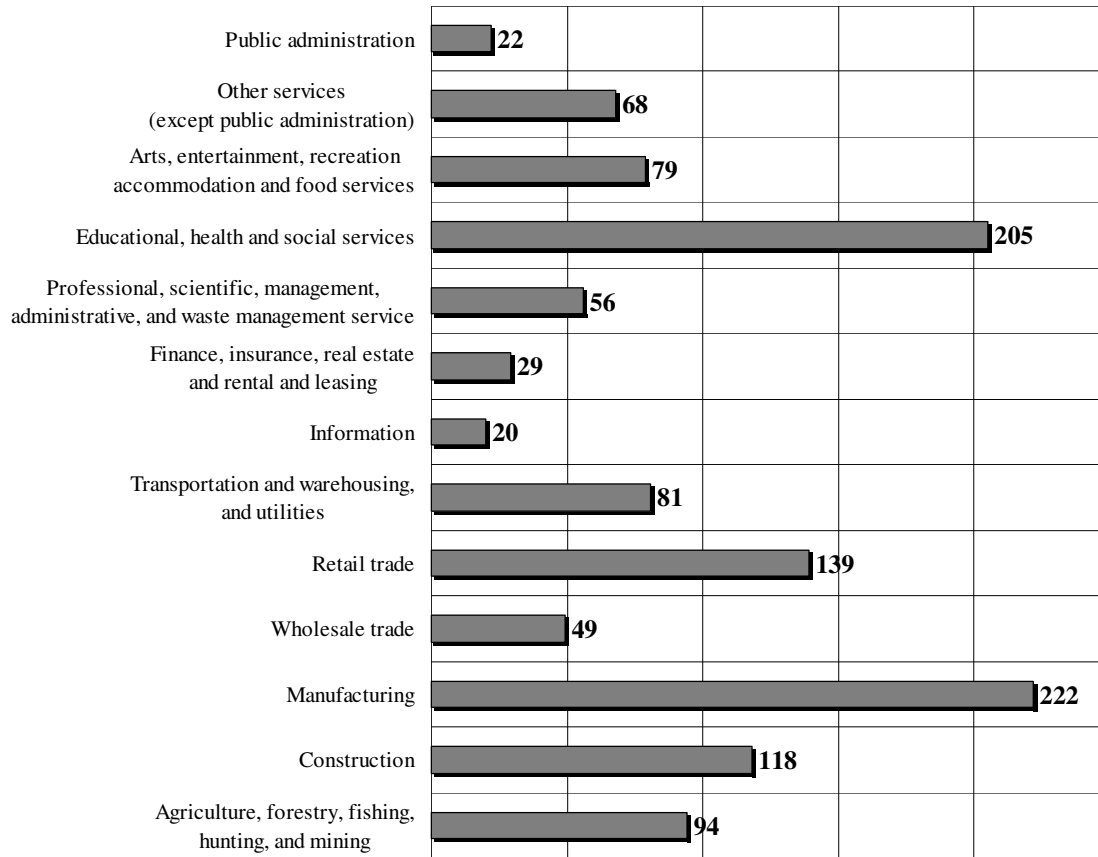
*Distribution of Labor Force by Occupation
Pipestone Township
2000 Census*



Workforce Distribution by Type

From the following graph, it can be determined that the majority of jobs for Pipestone Township residents are in manufacturing and in educational, health and social service fields.

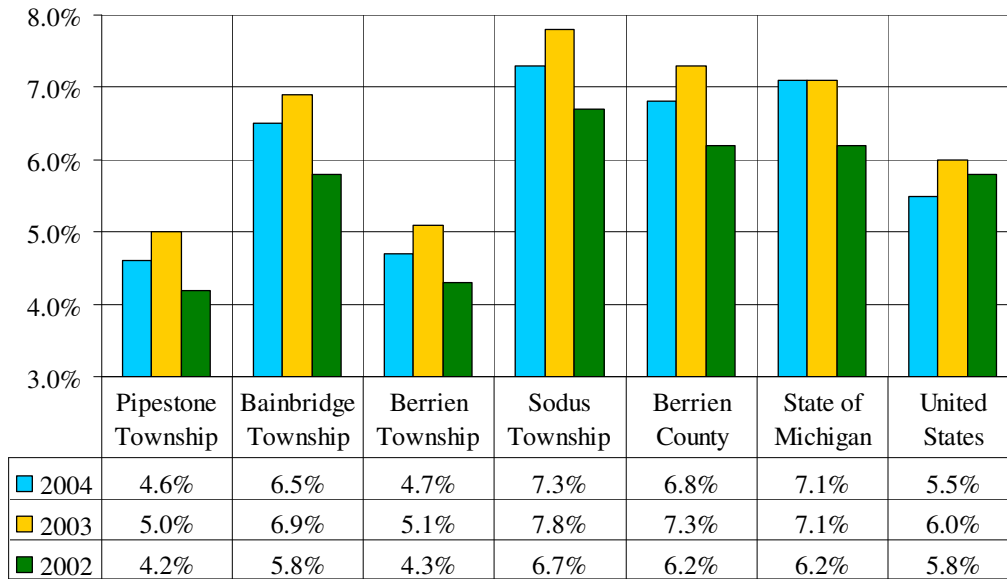
*Distribution of Workers by Industry Type
Pipestone Township
2000 Census*



Unemployment Rates

Although the State of Michigan and Berrien County have experienced unemployment rates well above the national average for the last three years, Pipestone Township has been consistently below the state, county, and national averages.

*Average Unemployment Rates
Regional Comparisons
2002-2004*



Analysis

Farming represents about 5 percent of all occupations listed in Pipestone Township. Yet the vast majority of the land is devoted to farming activities. Over 2/3 of the work force are in production, transportation (24%), management and professional (23%), and sales and office services (21%). The rest are in construction (15%) and service sector (12%).

The largest single category of the workforce is manufacturing with 222 employees identified. Second are education, health and social services with 205 employed. The retail trade (139 employed), construction (118) and agriculture (94) sectors consist of the top five categories of employment.

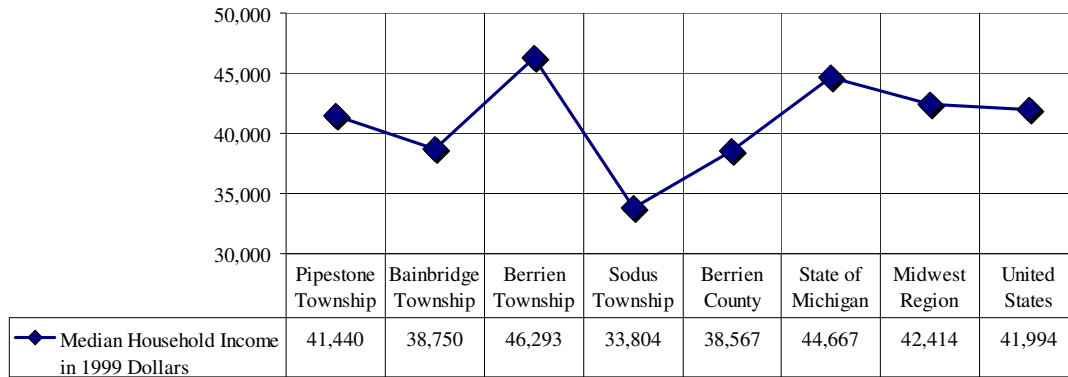
Pipestone Township has not had a lot of employment growth opportunities within its boundaries. Residents employed in non-agricultural work tend to be employed outside the township. The non-agricultural jobs within the township tend to be local in nature. Therefore, they are less susceptible to national economic trends. Pipestone Township will remain an agrarian-based, residential area for well into the foreseeable future.

Income

Median Household Income

The median household income in Pipestone Township is \$41,440 which is below the State, Midwest, and United States levels. However, Pipestone Township's median household income is above Berrien County and some surrounding townships.

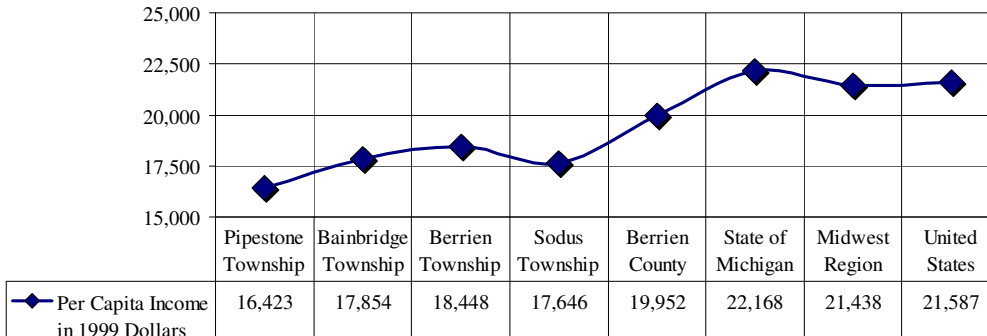
*Median Household Income
Regional Comparisons
2000 Census*



Per Capita Income

Pipestone Township's per capita income is below the State, Midwest and the United States level at \$16,423. It is also below the county and all comparison township's per capita income.

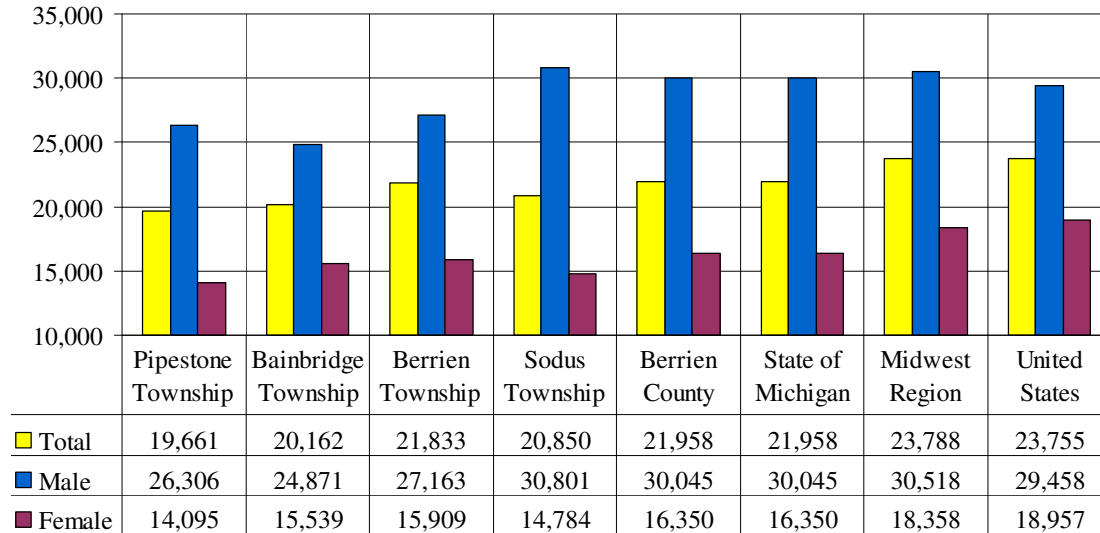
*Per Capita Income
Regional Comparisons
2000 Census*



Income Gender Gap

There is a \$12,211 income gap between males and females in Pipestone Township. This income gap is higher than the gap in the United States, Midwest and Berrien and Bainbridge Townships. Pipestone’s gender income gap is lower than Berrien County and Sodus Township.

*Median Earnings in 1999
Gender Distribution Comparison
2000 Census*



Analysis

Incomes in Pipestone Township are slightly lower than most areas. Although with lower housing values, the cost of living in Pipestone Township may be low enough to offset the lower incomes.

PUBLIC SAFETY SERVICES

Police Department

The Berrien County Sheriff's Department and the Michigan State Police provide police protection to Pipestone Township. The 2004 Berrien County Sheriff's Department *call incident* records indicate that approximately 275 calls were placed within Pipestone Township. Incident type varied with the highest number of calls requiring ambulance and traffic accidents/assistance. The Sheriff's Department responded to approximately 85 percent of the calls for assistance and the State Police responded to approximately 15 percent of the calls.

Fire Department/Emergency Medical

The Fire Department is comprised of 25 volunteers working cooperatively for Pipestone Township, Berrien Township, and the Village of Eau Claire. The main fire station is located in the Village of Eau Claire, and the substation is located on Range Line Road in Berrien Township. The department has three pumper trucks, two tankers, two grass trucks and one medical truck. Medic One provides ambulance service with responders coming from Benton Harbor, Royalton Township and the City of Watervliet. The fire department has 18 of the 25 volunteers certified as First Responders. There were 164 medical emergency responses handled by the fire department in 2004.

The Insurance Services Office (ISO) establishes suggested fire flow protection standards based on various factors including firefighting capabilities, building construction type, area height, and type of development and density. A combination of these factors (and others) can result in an ISO rating between one and ten with one being the best and ten being the worst. Insurance companies use this rating to determine appropriate insurance rates for customers that live within the water supply system. The Village of Eau Claire is rated a seven.

Funding for the department is structured by an agreement with the Village of Eau Claire to provide the building and building maintenance, and the townships of Pipestone and Berrien to provide the manpower and equipment. The fire department services a population of 7,549 within 73 square miles. In 2004, the department had a total of 3,294 call hours with a total of 292 calls. The following table summarizes the categories of calls in 2004. (Ten calls were mutual aid calls to Oronoko Township)

Fire Department Calls in 2004	
Type of Call	Number of Calls
Structure Fire	10
Vehicle Fire	11
Grass Fire	20
Medical	164
Rescue	39
Miscellaneous	48

Analysis

As the population ages, emphasis and awareness of health and other related issues will become more important. The types and quality of response services will become more and more important for township residents. The community survey indicates support for spending tax revenue on improving law enforcement (61% support or strongly support), fire protection services (69% support or strongly support) and emergency medical response (68% support or strongly support).

In addition, it is important to stay involved in coordinated efforts with the County for Emergency Management concerns by attending the Disaster and LEPC committee meetings hosted by the County's Emergency Management Office in the Sheriff's Department. The township should also strive to become more disaster resistant by implementing the relevant recommendations in the Berrien County Hazard Mitigation Plan (see Appendix for action recommendations for Pipestone Township).

PUBLIC WORKS and TOWNSHIP PROPERTY

Drinking Water

Pipestone Township residents mostly get their drinking water from individual wells.

Well Permits in Pipestone Township

Year	# of Permits
1997	7
1998	31
1999	31
2000	23
2001	35
2002	31
2003	32
2004	21

**Source: Berrien County Health Dept.*

However, the Village of Eau Claire has a municipal water system. The village’s water supply system consists of two ground-water wells designated as Well Number 1 and Well Number 2. Both wells are located west of the intersection of Hickory and Hoyt Streets. The firm capacity of any water supply system is calculated by removing the capacity of the largest pump from the system. The pumping capacity that remains is considered the firm capacity. The Village of Eau Claire has a firm capacity of 300 gallons per minute (gpm). Emergency power is supplied to both wells with a portable generator.

Well	Year Drilled	Diameter	Depth	Capacity
Number 1	1952	12”	184’	450 gallons per minute
Number 2	1962	12”	187’	300 gallons per minute

The Village regularly tests the water quality of its wells per MDEQ requirements. The recent analysis (2003) reported that the Village was within the acceptable limits of recommended water quality. Eau Claire currently disinfects the water supplied from the well with sodium hypochlorite.

The existing water distribution is contained within the Village limits except for approximately 500 feet along East Main Street. The system is comprised of water mains with 4” and 6” diameters and ductile iron and cast iron material. An inventory of the pipe sizes and approximate lengths within the system are shown in the following table.

Pipe Size (inches)	Length (feet)	Percent of Total
4	7,010	23%
6	23,370	77%
	Total: 30,380	

The southwest part of the Village receives water through one 6” water main on Main Street. If this line would break or require maintenance, the entire west side of town would be without water. When water use is high, or fire fighting is needed on the west side, system pressures will be greatly reduced.

The Village has one elevated storage tank located next to the two supply wells. The storage tank was originally constructed in 1936 and was relocated to Eau Claire in 1957. The tank has a total volume of 50,000 gallons. The water is supplied to the tank by the two ground water wells and pumps. The pumps operate with a lead-lag arrangement. The lag pump is turned on if the water in the tank continues to fall below a lower level.

The Village of Eau Claire’s water system serves approximately 150 customers, 87 percent residential and 13 percent commercial. Previous water usage is demonstrated in the table below. The maximum hourly demand is estimated to be 1.5 times the maximum daily demand. Because Village customers are not metered and pay a flat rate for water usage, system losses cannot be calculated. Typically system losses are estimated to average between 5-12 percent.

Village of Eau Claire - Water Usage	1999	2010
Average Daily Demand – Gallons per day (GPD)	156,000	172,000
Maximum Daily Demand – GPD	400,000	440,000
Average Daily Demand – Gallons per minute (GPM)	108	120
Maximum Daily Demand – GPM	278	306
Maximum Hourly Demand – GPM	417	459

Sanitary Collection and Treatment System

Most of the residents in Pipestone Township are served by individual septic systems. The following table shows the number of septic system permit applications received by the Berrien County Health Department from 2000-2004.

Septic Applications in Pipestone Township

Year	New System	Replaced System
2000	15	3
2001	35	7
2002	15	8
2003	18	2
2004	20	10

**Source: Berrien County Health Dept*

The Village of Eau Claire owns, operates, and maintains a sanitary collection and lagoon treatment system that was constructed in the late 1960s. The sanitary wastewater collection system was not designed to convey storm water. The system consists of 4.5 miles of gravity sewer pipe including 8-inch, 10-inch and 12-inch vitrified clay pipe. The sanitary wastewater from the entire village is collected in two lift stations. Lift Station # 1 services the southwest portion of the village that includes Hochberger Road, Aubill Drive, Ponderosa Drive, Sandy Hill

Drive, Beechwood Court, and Eau Claire High School. Lift Station #1 pumps the wastewater to Lift Station #2, which also collects the remainder of the village's wastewater. Lift Station #2 then pumps all of the wastewater to the treatment lagoons located north of the village.

The facultative lagoon treatment system is a three-cell system. In a typical operation, wastewater flows from Cell #1 to Cell #2 to Cell #3. In this case, Cell #1 and Cell #2 are the primary cells and Cell #3 is the polishing cell where no raw wastewater should enter. The original design has an overall depth of eight feet. The bottom two feet are designated for sludge storage and not used in determining working volume.

Solid Waste Disposal

Pipestone Township does not provide public solid waste services. Residents must make their own arrangements with private solid waste collectors for disposal. Residents may take their waste to Orchard Hill Landfill, the nearest landfill, located approximately seven miles north of Pipestone Township in Watervliet Township. There are no landfills in Pipestone Township.

Other Services

Telephone service is offered by Ameritech. Gas is offered by Michigan Gas (used to be Aquilla). Electric service is offered by American Electric Power. Cable is offered by Time Warner in the Village of Eau Claire.

Township Property

Pipestone Township owns property at 7665 Naomi Road which is the location of the current Township Hall. Pipestone Township also owns three cemeteries. The Pipestone Township Board just voted to move the Township Hall to the Lutheran School on Grace Street in the village of Eau Claire. This new Township Hall will be handicap accessible and also offer more space. The Township Board will need to decide what to do with the current Township Hall property.

Analysis

As a rural agricultural/residential community, Pipestone Township has historically offered few utility services to its residents. The township is mostly served by individual wells and septic. Permits for septic and well are provided by Berrien County Health Department. According to the US Census, many of the housing structures in Pipestone Township were built from 1950 to 1979. The septic systems are probably in need of repair and/or replacement, especially if they have not been maintained properly. Failing or improperly maintained septic systems are a major concern for ground and surface water contamination. Municipal sewer and water services are provided within Eau Claire Village. The township has no plans for building a public sewer system or connecting to any existing municipal sewer system. The community survey also indicates very little support for spending tax revenue on the extension of sewer and water services in the township. The lack of municipal sewer and water services can and does act as a deterrent for large-scale commercial and residential developments in the township. There is also very little support to spend tax revenue on installing street lights in the township. This is not surprising, because the street lights may take away the rural atmosphere that people enjoy in Pipestone Township. The community survey does show support for spending tax revenue on enforcing blight in the township (48% support or strongly support).

REGIONAL ISSUES

There are several regional and county issues that affect Pipestone Township. Pipestone Township is part of Berrien County and the Southwest Michigan Planning Commission's region.

Berrien County

Pipestone Township is located in **Berrien County**. The Berrien County Community Development Department oversees Economic Development, Planning, Waste Management and Resource Recovery. The Department works closely with community leaders and governments to coordinate their activities that deal with attracting and maintaining businesses within Berrien County through pooling resources. It is also the focal point for many projects that are multi-governmental. The Community Development Department staffs the Berrien County Planning Commission which is tasked with planning for the development of the county in cooperation with municipalities. The Berrien County General Development Plan 2003-2008 with accompanying maps, plats, charts and descriptive matter shows the Commission's recommendations for the development of the County. The plan shall be made with the purpose of guiding development of the County in accordance with present and future needs for best promoting the health, safety, morals, order, convenience, prosperity and general welfare of the inhabitants, as well as for efficiency and economy in the development process. The Berrien County General Development Plan can be viewed on the County's website www.berriencounty.org. The County Community Development Department also administers the Berrien County Farmland and Open Space Preservation Program.

Southwest Michigan Planning Commission

The **Southwest Michigan Planning Commission (SWMPC)** is one of fourteen planning and development regions in the state of Michigan. Planning and Development regions were created under a 1968 Governor's Executive Order for the purpose of improving intergovernmental cooperation and developing regional perspectives in planning and development decisions. The SWMPC was officially organized in late 1973 by resolutions of the Berrien, Cass, and Van Buren County Boards of Commissioners. The Commission has been fully staffed and operational since 1974. SWMPC's primary function is to assist units of government, public, and private entities within Berrien, Cass, and Van Buren Counties by providing technical assistance for federal, state, and local programs and projects. The SWMPC acts as an intergovernmental forum to address many regional issues.

Berrien County and the SWMPC are involved in Watershed Management and Green Infrastructure efforts. These efforts are important for Pipestone Township to be aware of and to stay involved with as both efforts will assist Pipestone Township in achieving its goals and objectives to balance development with the protection of water quality and natural resources. Visit SWMPC's website for more information on these efforts at www.swmpc.org (click on "What We Do" and then "Environmental Planning").

Becoming A Disaster Resistant Community

Berrien County, including Pipestone Township, is vulnerable to a wide range of hazards. Periodic disasters resulting from severe winter weather, severe windstorms, flooding, and other similar events can cause significant property damage, interruption of services, personal injury, loss of life, and disrupt the stability of the local economy. To address the threat these hazards pose to residents, Berrien County has developed the *Berrien County Hazard Mitigation Plan, January 2005*. This *Plan* will help Berrien County and its municipalities develop into Disaster Resistant Communities where residents and businesses will be protected from the effects of disasters by damage prevention and preparation before a disaster occurs.

Since land use and other regulations are mostly conducted at the township, city, and village level, each municipality in the county should include hazard mitigation actions into their planning and zoning documents to accomplish the goal of becoming a disaster resistant community. Pipestone Township will be involved in the ongoing efforts to better deal with hazards and disasters. Berrien County, Office of Emergency Management facilitates a countywide disaster committee and invites each municipality to participate. In addition, Pipestone Township will need to continue to adopt policies and ordinances that are consistent with the *Hazard Mitigation Action Plan* and need to continue to provide the county with potential hazard mitigation projects in their jurisdiction.

“Hazard mitigation” is defined as any sustained action taken to reduce or eliminate long-term risk to life and property from a hazard event. – FEMA

A Hazard Mitigation Plan

- identifies, analyzes and prioritizes hazards in the county (severe weather, tornadoes, fires, hazard materials incidents, etc.); and,
- strives to reduce the impacts* of hazards on people and property through the coordination of resources, programs, and authorities.

**Impacts include injuries, loss of life, property damage, and costs associated with disasters (business closures, interruption of essential services, higher insurance rates, etc.).*

The County Office of Emergency Management ranked the twenty-five hazards that have the potential to affect Berrien County. This ranking is based on the scoring of six evaluation criteria. (For more information on the ranking process, refer to the Berrien County Hazard Mitigation Plan.) Every municipality in Berrien County had the opportunity to rank the hazards differently or to accept the County’s ranking. Pipestone Township accepted the County’s ranking as shown in the next table.

All Hazard Ranking and Scoring Summary – Berrien County

Rank	Hazards	Score	Rank	Hazards	Score
1	Severe Winter Weather	6.95	14	Lightning	3.8
2	Nuclear Power Plant Accident	6.6	15	Pipeline Accidents	3.7
3	Extreme Temperature	6.35	16	Drought	3.6
4	Tornado	6.25	17	Shoreline Flooding/Erosion	3.25
5	Infrastructure Failures	6.15	18	Hail	3.8
6	Severe Winds	5.6	19	River Flooding	3.7
7	Structural Fires	4.95	20	Civil Disturbance	3.6
8	Terrorism/Sabotage/ CBRNE	4.75	21	Wildfires	3.25
9	Dam Failures	4.7	22	Oil and Gas Well Accidents	3.2
10	HazMat Transportation Accident	4.6	23	Earthquakes	3
11	HazMat Fixed Site Accident	4.3	24	Scrap Tire Fires	2.65
12	Transportation Accidents	4	25	Subsidence	1.15
13	Public Health Emergencies	3.95			

A composite hazard ranking for the hazards in Berrien County is shown in the following table. The combination of two factors (Risk and Vulnerability Assessment) resulted in the composite hazard ranking of high, medium, or low.

Risk Assessment is defined as either:

High - very likely to occur over the hazard mitigation-planning horizon of twenty years,

Medium - somewhat likely to occur, or

Low - not likely to occur.

Vulnerability Assessment is defined as:

High - severe impacts over large geographic areas or more densely populated areas and a serious financial impact on county residents and businesses,

Medium - confined impacts on the safety of residents but with a financial impact on county residents and businesses, or

Low - very minimal impact on the safety of county residents and minimal financial impact on county residents and businesses.

Hazards	Risk Assessment	Vulnerability Assessment	Composite Hazard Ranking
Severe Winter Weather	High	High	High
Nuclear Power Plant Accident	Low	High	High
Extreme Temperature	High	Medium-High	High
Thunderstorms (tornados, severe winds, lightning, hail)	High	High	High
Infrastructure Failures	High	High	High
Structural Fires	High	Low-High	Medium
Terrorism/Sabotage/CBRNE	Medium	Medium-High	Medium
Dam Failures	Medium	Medium-High	Medium
HazMat Transportation Accident	High	Medium	Medium

Hazards	Risk Assessment	Vulnerability Assessment	Composite Hazard Ranking
HazMat Fixed Site Accident	Medium	Medium	Medium
Transportation Accidents	High	Medium	Medium
Public Health Emergencies	Low-Medium	Medium-High	Medium
Pipeline Accidents	Low	Medium-High	Medium
Drought	Low	Medium	Medium
Shoreline Flooding/Erosion	High	Low-Medium	Medium
River Flooding	High	Low-Medium	Medium
Civil Disturbance	Low	Low	Low
Wildfires	Low	Low	Low
Oil and Gas Well Accidents	Low	Low	Low
Earthquakes	Low	Low	Low
Scrap Tire Fires	Low	Low	Low
Subsidence	Low	Low	Low

For a more detailed hazard analysis of each of the hazards listed in the above table, refer to the *Berrien County Hazard Mitigation Plan* which can be found on the Internet at www.swmpc.org/haz_mit2.asp. Hazard mitigation actions in the *County Plan* that apply to Pipestone Township are listed in the Appendix.

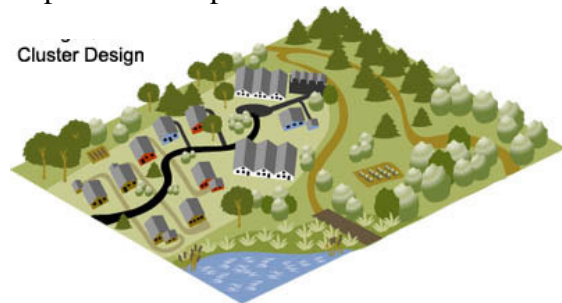
APPENDICES

APPENDIX 1 ~ ZONING TECHNIQUES and OTHER PROGRAMS

The following is a list and brief introduction to a variety of zoning techniques that will help Pipestone Township realize its goals and objectives set forth in this Master Plan.

Open Space Developments

Open space (also called conservation or cluster) developments incorporate smaller lot sizes to minimize total impervious area, reduce total construction costs, conserve natural areas, provide community recreational space, and promote watershed protection.



Open space subdivisions cluster homes into a smaller portion of the development site, leaving more of the site as natural open space. Open space subdivisions have been documented to reduce impervious cover, stormwater runoff, and construction costs. There could be further incentives for the clustering of residential units, also known as Open Space Development. Under this development technique the allowable density is based on a “parallel plan” showing reasonable and permissible development under existing zoning. While Open Space Development may increase the net density for a smaller area of a larger parcel, the overall density would still fall into the requirements of the existing zoning. It would also allow for the preservation of significant natural features, provide open space for recreation, or allow the continuation of farming on interior land areas. To preserve the roadside character, some or all of the required open space could be placed abutting the roadway. Currently, open space development in western Michigan is not particularly prevalent, or indeed, attractive to home buyers. One of the reasons that many buyers are looking in the rural areas is to avoid being too near other homes. Unlike eastern Michigan, where land values are generally higher, open lands are abundant in western Michigan and land prices are very reasonable. However, there is a segment of the marketplace that can appreciate the value of preserving larger open spaces within a development. Therefore, offering of incentives to developers for using this development technique is appropriate. The basic incentive to which developers will most readily respond is an increase in the number of units which could be permitted over the base density calculated under the parallel plan. This is generally considered a development “bonus.”

The amount of the bonus may vary depending on the nature of the development, and they may be used in combinations of one or more different incentives. As an example, incentives may include an increase in the number of units if: additional open space is provided, beyond that normally gained in the lowering of individual lot sizes; a community wastewater and/or domestic water system is used (avoiding the need for septic systems and individual wells); recreational amenities are provided, such as tennis courts, club house, or other similar facility; walkways, trails, or bike paths are included within the development; and/or significant areas of active agricultural lands are preserved.

Water Quality Overlay Zone

Overlay zoning is the application of an additional set of regulations to an established zoning district or districts. Areas commonly targeted by overlay zones include: floodplains, watersheds, environmental areas, lakeshore/shoreline, river corridors, high risk erosion areas, historic districts or economic revitalization areas. The use of an overlay zone can be especially effective to ensure the consistent regulation of land uses within multiple zone districts, such as greenway or vegetative buffer requirements along a river.

In this case, a water quality overlay zone along all rivers, streams and creeks is proposed. The zone would require that all new developments leave a natural buffer along the surface water body. Buffers are noted for their economic benefits as well, including increased property values, reduced flood damages, and savings on sediment removal costs.

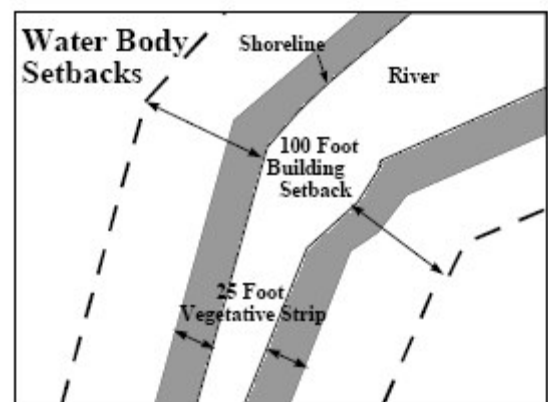
Buffers

One of the most important things a community or property owner can do to protect water quality is to maintain a vegetated riparian buffer along streams, ditches, rivers, lakes and wetlands. Many stream or lake edges are currently mowed on a periodic basis for a manicured-lawn or park like setting. Although this may be aesthetically pleasing to certain residents, this practice is detrimental to water quality and the fish community. A *riparian buffer* or buffer zone is a corridor of vegetation along rivers, streams, or wetlands, which help to protect water quality by providing a transition between upland development and adjoining surface waters. Vegetated riparian buffers:

- reduce erosion and stabilize stream banks;
- encourage infiltration of stormwater runoff;
- filter and reduce pollution and sediment from entering the river;
- provide storage for floodwaters;
- shade and cool the water
- encourage desirable aquatic species;
- provide wildlife habitat;
- offer scenic value and recreational opportunities for trails and greenways;
- minimize public investment for stormwater management efforts;
- allow for the development of natural stream meanders;
- filter air and noise pollution; and
- protect property from flood damage and shoreline erosion hazards

Buffers Protect Property

Streamside land is a high-risk area for development even above flood elevation. Public and private investments in property risk damage or loss if stream dynamics are ignored. Using vegetated buffers to set back human developments and land uses from shorelines is cost effective protection against the hazards caused by flooding, shoreline erosion and moving



Other Techniques to Protect Water Quality by limiting impervious surfaces and preserving open space:

Relax side yard setbacks and allow narrower frontages to reduce total road length in the community and overall site imperviousness. Relax front setback requirements to minimize driveway lengths and reduce overall lot imperviousness.

New development should not discharge unmanaged stormwater. Enclosing, straightening, and relocating streams should be discouraged during all new development.

A PUD can require a percentage of open space. Communities have required anywhere from 10 to 50% designated open space in a PUD. The open space must be permanently protected through a deed restriction or other legal means. The Township should encourage abutting developments to preserve open spaces that are continuous.

Site Plan Review Standards

Include these standards in Site Plan Review Standards to protect water quality:

(a) Avoid development or redevelopment in the following circumstances:

1. Unsuitable areas, including, but not limited to unstable slopes, wetlands and riparian areas;
2. Stream crossings – where crossings must be provided, the impacts on water quality shall be minimized; and
3. Hardening of stream banks and shorelines.

(b) Prevent:

1. Stormwater discharge impacts to water quality and quantity; and
2. Erosion and sediment run-off during and after construction.

(c) Protect:

1. Riparian areas, buffers and functions around all watercourses; and
2. Wetlands, wetland buffers and wetland functions.

(d) Preserve the hydrologic capacity of any watercourses.

(e) Utilize native vegetation in riparian areas to reduce the need to apply water, herbicides, pesticides and fertilizer. The required riparian area landscaping shall be installed as part of the building permit process. The required riparian area landscaping may be bonded.

(f) Restoration and enhancement of riparian areas that are degraded in riparian function.

(g) To protect, preserve, restore and enhance riparian areas measures shall be applied as follows:

1. For new development and redevelopment, existing riparian area functions shall be protected and preserved and degraded functions shall be restored or enhanced through the full riparian area width and extending through the full frontage of the lot along the watercourse.
2. For additions and expansions on any portion of a lot, existing riparian area functions shall be protected and preserved through the full riparian area width and extending through the full frontage of the lot along the watercourse.

Low Impact Development (LID)

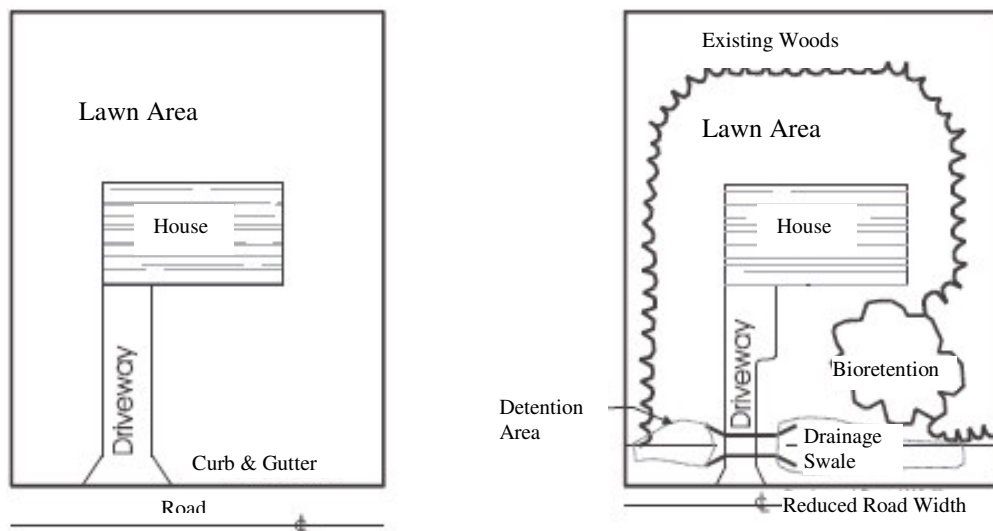
At a minimum, all new residential, commercial and industrial developments should be encouraged to utilize low impact development techniques such as minimal grading of the site, preservation of wetlands and wooded areas and utilization of stormwater infiltration techniques (porous pavement, bio-swales, rain gardens, etc.). Low Impact Development is an ecologically friendly approach to site development and stormwater management that aims to mitigate development impacts to land, water and air. The approach emphasizes the integration of site design and planning techniques that conserve natural systems and hydrologic functions on a site. The practice has been successfully integrated into many municipal development codes and storm water management ordinances throughout the United States.

Conventional Development vs. LID:
 Conventional development techniques often clear all trees and valuable topsoil from a site and re-grade it so that all water ends up in one large detention basin. Resulting problems include loss of recharge, increased water temperature, decreased water quality and higher runoff volumes. The LID approach protects the natural ability of the site to capture precipitation, keep it clean and allow it to recharge the local water table.

Specifically LID aims to:

- ☀️ Preserve open space and minimize land disturbance
- ☀️ Protect natural systems and processes (drainage ways, vegetation, soils, wetlands)
- ☀️ Reexamine the use and sizing of traditional infrastructure (lots, streets, curbs, gutters, sidewalks) and customize site design
- ☀️ Incorporate natural site elements (wetlands, stream corridors, mature forests) as design elements
- ☀️ Decentralize and micromanage stormwater at its source

LID can be applied to new development, urban retrofits, and redevelopment/revitalization projects at many scales. At a small scale, LID techniques can be used to better handle rainfall for a single family lot through rain barrels and rain gardens. LID techniques include the use of rain gardens, bioswales, green roofs, porous pavement options, and native plants. At a larger scale, proper site design in combination with many landscaping and infiltration techniques distributed throughout a subdivision or development will cumulatively improve water quality and reduce runoff.



Sliding Scale Zoning

This technique limits the number of times that a parent parcel (a parcel existing on the date of ordinance adoption) can be split, based on its size, i.e., the larger the parcel the more splits that may occur, up to a maximum number established (as shown on the example chart). A larger minimum parcel size is also established. Unlike exclusive use zoning, sliding scale zoning allows some non-farm residential development without special land use or other reviews. Sliding scale zoning can be useful in agricultural areas where there are significant development pressures and land speculation. The use of sliding scale zoning is most effective in areas where a wide range of parcel sizes exist and non-farm residential development has already begun to occur.

Sliding Scale Example	
Area of Lot of Record	Maximum Additional Lots Permitted
1 – 10 acres	1
10.1 – 20 acres	2
20.1 – 40 acres	3
40.1 – 80 acres	4
80.1- 160 acres	5
160.1 – 320	6
Over 320.1 acres	7

Minimum and maximum building lot sizes can be used to encourage the location of non-farm development on less productive farmland and/or in areas where development is more concentrated to direct growth onto already fragmented land. The use of buffer areas is highly recommended to avoid land use conflicts between new residential development and agriculture fields. When new residential developments are abutting farmland, require the residential use to install a vegetative buffer between the houses and the agricultural use. Since this method does permit some use of land for nonagricultural uses, it allows communities to more effectively avoid a claim that land has been “taken” without compensation.

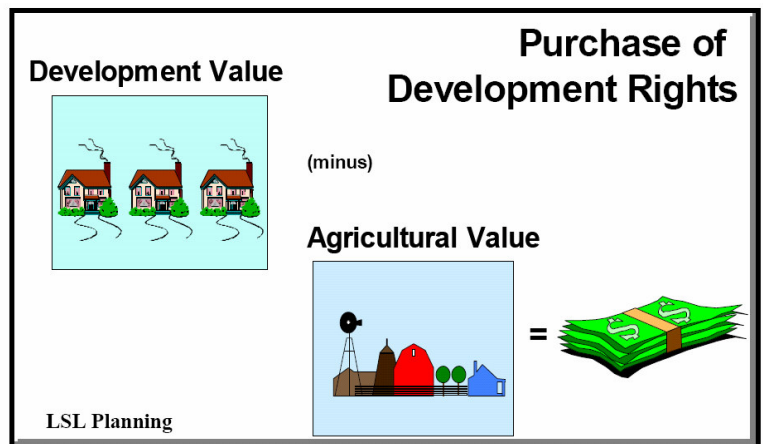
Voluntary Land Protection and Management Options

Berrien County Farmland and Open Space Preservation Program

The Berrien County Board of Commissioners has enacted a Farmland and Open Space Preservation Program that local units of government can participate in to protect and preserve farmland and open space in the county. The County declared that protection and preservation of farmland and open space is a significant countywide policy supported by many local units of government within the County as well as a significant majority of residents of Berrien County. An interested landowner must make application to the program through the Berrien County Community Development Department. Applications are scored and ranked according to criteria set by the County. Then scored applications will be reviewed by the Berrien County Land Preservation Board (LPB). Final selections will be made by the LPB with approval from the County Board of Commissioners for submission to the state and federal governments for matching funds if applicable. Landowners should contact the Berrien County Community Development Department for more information. Additional information can also be found on Berrien County’s website at www.berriencounty.org.

Purchase Of Development Rights

With purchase of development rights, the landowner voluntarily sells the development right to his property, for compensation for not developing the land. The landowner still maintains ownership of the land to continue using the land for farming practices or for preserved open space. The land can be sold or transferred, but can never be used for non-farm development. The value for the purchase of the development rights is the difference between the fair market value and the agricultural or open space value of the land. With the income from the sale of the development rights the landowner has money to expand existing farm operations, pay off debt, college education, inheritance to non-farm related children, retirement, and much more. Besides extra income, the sale of development rights



allows the land to be assessed at a lower tax rate, decreasing property tax and inheritance taxes of the land. However, none of these programs are entirely permanent and may be designed to allow some way out by proving through stringent test that keeping the land open for productive agriculture is no longer possible in that area. One fundamental concern with PDR programs is funding the program. The funds may come from private agencies like American Farmland Trust, state bond referendums, grants, donations, P.A. 116 lien fund, or an increase in other local funding sources, such as a special tax on building permits. The state of Pennsylvania, for example, adopted a 2% sales tax on cigarettes. These programs have passed voter approval and have been largely supported by non-farming communities and urban residents who have witnessed the loss of farmland and open space. Most people may not live in rural communities, but enjoy viewing them on occasion.

Conservation Easements

A conservation easement is the voluntary donation of land to have restrictions placed on it for the protection of agriculture, open space, and natural resources. The landowner still owns the land and can use it for specific conditions that the landowner and the nonprofit easement holder have agreed upon. Agricultural easements are designed to benefit the landowner, to assist him in keeping agricultural lands productive and protected from development. The easement is considered a charitable contribution for which the landowner does not receive direct income benefits from the donation of their land. The landowner benefits from the donation through federal and state income tax deductions, lower property taxes, and reduction in estate and inheritance taxes. The value of the conservation easement is the difference between the fair market value and the value of the land after restrictions have been imposed.

These values are determined by a professional surveyor who considers the fair market value based on the development pressures of the land to determine how much the conservation easement is worth. The tax relief that the landowner receives can be used to keep the land productive without having to sell more land and ensure the property for future generations. Conservation easements can be made flexible to meet the landowner's needs. Certain rights to use the property can be maintained by the owner, such as the right to grow crops, cut timber, construction of new farm buildings, locations of homes for family members, or limited divisions of lots for resale. Requesting to keep these rights will affect the value of the conservation easement. The easement holder assumes the responsibility to make sure that all the restrictions are enforced.

The length of the easement may run from a few years to permanent preservation. However, federal tax benefits are only available on permanent easements. The conservation easement stays in effect if the property is bought, sold, given or transferred to another owner. The new owner then assumes all responsibility of the conservation easement. Should the surrounding areas change to the extent that the restrictions of the conservation easement can no longer be reasonably maintained the easement may be changed or terminated through court action.

See the following table for a list of voluntary options for private landowners to protect and/or manage their land.

VOLUNTARY LAND PROTECTION OPTIONS FOR LANDOWNERS

Land Protection Option	Description	Results	Income Tax Deduction*	Estate Tax Reduction*
Conservation easement	Legal agreement between a landowner and a land conservancy or government agency permanently limiting a property's uses.	Important features of the property protected by organization. Owner continues to own, use, live on land.	Yes	Yes
Outright land donation	Land is donated to the land conservancy.	Organization owns, manages, and protects land.	Yes	Yes
Donation of land by will	Land is specifically designated for donation to the land conservancy.	Organization owns, manages, and protects land.	No	Yes
Donation of remainder interest in land with reserved life estate	Personal residence or farm is donated to the land conservancy, but owner (or others designated) continue to live there, usually until death.	Organization owns remainder interest in the land, but owners (others) continue to live on and manage land during their lifetime subject to a conservation restriction.	Yes	Yes
Bargain sale of land	Land is sold to the land conservancy below fair market value. It provides cash, but may also reduce capital gains tax, and entitle you to an income tax deduction.	Organization owns, manages, and protects land.	Yes	Yes

*In most cases. The amounts of tax reductions depend on a number of factors. Consult a tax and/or legal advisor. (This table was adapted from Conservation Options: A Landowner's Guide, published by the Land Trust Alliance and available at the Southwest Michigan Land Conservancy, (269) 324-1600.)

LAND MANAGEMENT OPTIONS**

Land Management Option	Description	Agreement	Landowner reimbursement
Wildlife Habitat Incentive Program (WHIP)	Provides technical and financial assistance to promote wildlife habitat including corridor, riparian buffer and rare species habitat development	Contracts run for a minimum of 5 years and a maximum of 10 years.	Up to 75% of cost of improvements.
Wetland Reserve Program (WRP)	Assists in restoring active agricultural land to natural wetland condition.	Agreements can be 10-year, 30-year or perpetual.	Up to 75% of cost of improvements or 100% for permanent agreements.
Environmental Quality Incentives Program (EQIP)	Assists in restoring agricultural land to wildlife habitat.	Agreements can last 2-10 years.	Up to 75% of cost of improvements.

**These are just a few of many examples. For more information see www.mi.nrcs.usda.gov/programs, or contact the Berrien County Conservation District office.

APPENDIX 2 ~ STEERING COMMITTEE VISIONING SESSION
June 9, 2005
Summary of Results

The purpose of this session was to begin developing a vision for Pipestone Township. This was done by identifying the issues, wants, and needs of the Township with the members of the Steering Committee in preparation for the public visioning session to be held June 23, 2005.

Economy/Jobs

What I like about Pipestone Township:	
8	Centrally located (US 31 connection is a boost)
7	New home construction
3	Agricultural/laid back/slow pace
2	Less traffic
2	Farm-tourism (Agri-tourism)
	Cost of living
	Small service and retail businesses
	Recreational jobs (golf courses)
	Variety
What I don't like:	
8	Increasing decline of Eau Claire
3	Not a lot of job opportunities in close proximity
3	Agricultural/seasonal
2	Lack of housing developments
1	Not many large employers
1	Need bigger tax base
1	Lack of any major attractions
	Dependent on outside areas for jobs
	No job incentives
	No high income jobs
	Money doesn't stay in the Township
What I would like to see in the future:	
7	Commercial growth along M-140 and M-62
7	Concentrated growth in specific areas (zoning)
4	Enhance climate for subdivisions
1	Improvements to attract people
1	Increased infrastructure to handle future growth
1	Protect ordinances (lot sizes, etc)
	Spin-off opportunities from agriculture (packing companies, etc.)
	Industrial Park

Growth/Development

What I like about Pipestone Township:	
7	Positive development on M-140
5	Nice topography
3	Rural/agricultural atmosphere
2	Able to be individualistic
1	The current status of housing developments
	Low price of land
What I don't like:	
5	Spreading without a subdivision plan in place
5	No rules for growth
3	Loss of control from long-term residents
2	Small lot splits/traffic impacts
1	Mobile homes not in a designated park
1	Soils are not conducive to growth
	Traffic control – need for shared access – curb cuts
	Changing tax categories/no retro tax
	Single family housing is using up large acreage
	Not actively pursuing growth
	No rental units
What I would like to see in the future:	
6	Define “subdivisions”/rural development with common access
5	Water and sewer expansion
4	Concentrated development (planned)
3	Maintain rural personality
2	Commercial and industrial zone
1	Power plant
	Upgrade utilities
	Common access from road instead of multiple driveways

Agriculture/Agri-Tourism

What I like about Pipestone Township:	
7	Small farm marketers/non-commercial small growers
5	Cherry Pit Spitting/Celebrations
4	Allows hunting and recreational opportunities
3	Good assets to develop
1	Brings in non-residents’ money and exposes people to the area
	Provides a good economic base
What I don't like:	
6	Farm equipment is too large for roads – creates dangerous situations
4	Residential (non-ag) complaints about agricultural operations
3	Farmers aging and retiring/kids don't want to farm
3	New farming operations difficult to afford (new start-ups)

What I would like to see in the future:	
7	Predict the decline of large commercial farms
6	Local farmer's market
2	Continue celebrations of agriculture
1	Don't want to see fewer farms
1	Increase niche markets
1	Increase tourism/recreation

Schools/Youth

What I like about Pipestone Township:	
10	No longer under court order for desegregation
7	Rural setting of schools is attractive
3	Many choices (private and public)
	Like small school opportunities (sports, etc.)
What I don't like:	
8	Continuing decline/lack of spirit/no local support
4	Rated lowest on real estate website (a 5)
3	Low quality/low paid teachers
3	Too small of a system/not enough advanced classes offered for college prep
2	Schools of choice
1	Athletic driven decisions instead of academic driven
	Increasing costs to operate/decline in number of students
	No booster clubs
	Not enough tax base to support the schools
What I would like to see in the future:	
7	Supply high speed internet
6	Regional county system
3	Upgrade utilities
2	Closings due to financial problems
	Regional elementary school in Township
	Need more recreation for kids

Transportation/Roads

What I like about Pipestone Township:	
6	Close proximity to major roads
5	Good diversity of roads
3	Improving somewhat
3	M-140 is a good road
1	Dirt roads
1	No roads
	No shoulders

What I don't like:	
11	Not enough funding for roads – no local millage
7	Always patching, not repairing because of financial constraints
1	Not enough dust control
1	Tar and chip repair a waste of money
	Poor conditions
What I would like to see in the future:	
9	Develop a long range plan with funding
6	Pass local millage
4	Better public transit especially for the elderly
1	Local Asphalt plant

Natural Resources/Recreation

What I like about Pipestone Township:	
9	Topography
7	Woodlands
2	Hunting/fishing
1	Miles of streams already protected
	DNR boat launch on Black Lake
What I don't like:	
10	No parks
4	Heavy soils limits development
3	Floodplain limits development
3	Railroad easement reverted to property owners instead of public use
	Lack of trail system (non-motorized)
What I would like to see in the future:	
10	More parks
6	A trail system
2	Fund set up to purchase wildlife areas (owned by Township)
1	Protection of water quality (streams/rivers)
1	Develop access to Pipestone Creek (south of cemetery on Park Road)

Housing

What I like about Pipestone Township:	
What I don't like:	
5	Failing septic systems
5	Small cheap housing
3	Twp does not allow private roads – all roads meet county standards
What I would like to see in the future:	
7	Need covenants/restrictions
6	Enforce ordinances (prevent blight)

APPENDIX 3 ~ PUBLIC VISIONING SESSION
June 22, 2005
Summary of Results

The purpose of this session was to begin developing a vision for Pipestone Township. On June 9, 2005 the Steering Committee identified issues, wants, and needs of the Township. At this public session, the participants added to the Steering Committees list by identifying additional ideas and issues. Each participant was then asked to select their top two likes, dislikes and ideas for the future for each of the topics.

ECONOMY AND JOBS

What I like about Pipestone Township...

6	Centrally located (US 31 connection is a boost)
5	Agricultural/laid back/slow pace
2	Less traffic
2	Farm-tourism (Agri-tourism)
1	New home construction
1	Small service and retail businesses
1	Variety
	Cost of living
	Recreational jobs (golf courses)

What I don't like about Pipestone Township...

5	Increasing decline of Eau Claire
3	Not a lot of job opportunities in close proximity
3	Need bigger tax base
2	Money doesn't stay in the Township
1	Agricultural/seasonal
1	Dependent on outside areas for jobs
1	No high income jobs
	Lack of housing developments
	Not many large employers
	Lack of any major attractions
	No job incentives

What I would like to see in the future...

7	Concentrated growth in specific areas (zoning)
3	Improvements to attract people
2	More high paying jobs
1	Commercial growth along M-140 and M-62
1	Increased infrastructure to handle future growth
1	Protect ordinances (lot sizes, etc)
1	Spin-off opportunities from agriculture (packing companies, etc.)
1	More jobs in the Township
	Enhance climate for subdivisions
	Industrial Park

GROWTH AND DEVELOPMENT

What I like about Pipestone Township...

4	Positive development on M-140
4	Rural/agricultural atmosphere
1	Nice topography
1	Able to be individualistic
1	Low price of land
	The current status of housing developments

What I don't like about Pipestone Township...

3	No rules for growth
3	Soils are not conducive to growth
2	Spreading without a subdivision plan in place
1	Loss of control from long-term residents
1	Small lot splits/traffic impacts
1	Single family housing is using up large acreage
	Mobile homes not in a designated park
	Traffic control – need for shared access – curb cuts
	Changing tax categories/no retro tax
	Not actively pursuing growth
	No rental units

What I would like to see in the future...

4	Define “subdivisions”/rural development with common access
2	Concentrated development (planned)
1	Water and sewer expansion
1	Maintain rural personality
1	Commercial and industrial zone
1	Power plant
1	Common access from road instead of multiple driveways
	Upgrade utilities

AGRICULTURE/AGRI-TOURISM

What I like about Pipestone Township...

4	Small farm marketers/non-commercial small growers
4	Cherry Pit Spitting/Celebrations
1	Allows hunting and recreational opportunities
1	Good assets to develop
1	Brings in non-residents' money and exposes people to the area
	Provides a good economic base

What I don't like about Pipestone Township...

2	Residential (non-ag) complaints about agricultural operations
1	Farm equipment is too large for roads – creates dangerous situations
1	Farmers aging and retiring/kids don't want to farm
	New farming operations difficult to afford (new start-ups)

What I would like to see in the future...

6	Increase niche markets
3	Increase tourism/recreation
2	Local farmer's market
1	Predict the decline of large commercial farms
1	Continue celebrations of agriculture
	Don't want to see fewer farms

SCHOOLS AND YOUTH

What I like about Pipestone Township...

10	No longer under court order for desegregation
4	Many choices (private and public)
2	Rural setting of schools is attractive
2	Like small school opportunities (sports, etc.)

What I don't like about Pipestone Township...

8	Continuing decline/lack of spirit/no local support
3	Not enough tax base to support the schools
2	Low quality/low paid teachers
1	Rated lowest on real estate website (a 5)
1	Too small of a system/not enough advanced classes offered for college prep
1	Athletic driven decisions instead of academic driven
1	Increasing costs to operate/decline in number of students
	Schools of choice
	No booster clubs

What I would like to see in the future...

	Supply high speed internet
	Regional county system
	Upgrade utilities
	Closings due to financial problems
	Regional elementary school in Township
	Need more recreation for kids

TRANSPORTATION/ROADS

What I like about Pipestone Township...

6	Close proximity to major roads
6	M-140 is a good road
2	Good diversity of roads
1	Improving somewhat
1	Dirt roads
1	No roads
1	No shoulders

What I don't like about Pipestone Township...

7	Not enough funding for roads – no local millage
4	Always patching, not repairing because of financial constraints
2	Tar and chip repair a waste of money
1	Not enough dust control
1	Poor conditions

What I would like to see in the future...

4	Develop a long range plan with funding
3	Pave all roads
3	Improve Tabor Road to better serve Village of Eau Claire and Sodus Township
2	Pass local millage
2	Add shoulders to roads (safety reasons)
2	Bicycle Paths
1	Better public transit especially for the elderly
1	Local Asphalt plant
1	Road improvements (i.e. Bailey Road)

NATURAL RESOURCES/RECREATION

What I like about Pipestone Township...

6	Woodlands
4	Topography
2	Miles of streams already protected
1	Hunting/fishing
1	DNR boat launch on Black Lake

What I don't like about Pipestone Township...

4	No parks
2	Heavy soils limits development
2	Floodplain limits development
1	Railroad easement reverted to property owners instead of public use
1	Lack of trail system (non-motorized)

What I would like to see in the future...

7	Protection of water quality (streams/rivers)
5	A trail system (for biking and walking)
2	More parks
2	Develop access to Pipestone Creek (south of cemetery on Park Road)
1	Protect public access to Black Lake
	Fund set up to purchase wildlife areas (owned by Township)

HOUSING

What I like about Pipestone Township...

4	Diversity in housing
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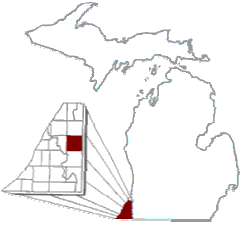
What I don't like about Pipestone Township...

6	Failing septic systems
3	Township does not allow private roads – all roads must meet county standards
1	Small cheap housing
1	No rental units

What I would like to see in the future...

3	Enforce ordinances (prevent blight)
3	More affordable housing
3	More single-family housing
2	Need multi-family homes that are attractive
2	Bring in architects that have a proven record to help guide development
2	Low impact development
	Need covenants/restrictions

APPENDIX 4~ SURVEY COVER LETTER and QUESTIONNAIRE



Pipestone Township
3581 Park Road, Eau Claire, MI 49111
(269) 944-1063

September 8, 2005

Dear Pipestone Township Resident or Landowner:

Pipestone Township officials want your opinion! Pipestone Township is conducting a survey of its residents and property owners to gather input for a township master plan. Please take a few minutes and fill out the enclosed survey and return it in the pre-addressed envelope provided. All survey responses will remain confidential.

Pipestone Township is working with the Southwestern Michigan Commission, the regional planning agency, to develop a master plan. This survey is part of a process by which our community can take stock of where we are today and develop an action plan for how we want to operate in the future. Whether the issue is a quality school system, farmland preservation, lack of adequate affordable housing or better roads, the need for effective problem-solving skills is the same. A community must have strong leaders, from all sectors, who are able to work together with informed and involved citizens to reach agreement on issues. The Pipestone Township Survey is a self-evaluation tool that draws heavily on the collective wisdom of its citizens.

A Master Plan is a long range-planning tool used to define the township's vision, goals, and policies. An effective plan accurately communicates citizen needs and desires about their community and recommends specific strategies to achieve those values. A typical plan sets a 20-year vision for the community.

This survey provides a method for you to identify community strengths, concerns and problems, which will help Pipestone Township structure collaborative approaches to meet challenges creatively, set directions for the future, and manage change.

Thank you for your time and your contribution to Pipestone Township. If you have any questions, please call Pipestone Township at (269) 944-1063 or the Southwestern Michigan Commission at (269) 925-1137 x25.

Sincerely,

Pipestone Township Planning Commission
Pipestone Township Board
Southwestern Michigan Commission

Pipestone Township Master Plan Community Survey

1. Why do you feel Pipestone Township is a desirable place to live? (Check all that apply.)

- a. Rural atmosphere
- b. Outdoor recreation opportunities
- c. Lakes and rivers
- d. Employment opportunities nearby
- e. Quality school system
- f. Friendly people
- g. Community spirit
- h. Attractiveness of area
- i. Reasonable tax rate
- j. Low crime rates
- k. Availability of shopping nearby
- l. Ease of commute
- m. Affordable housing/land
- n. Surrounding farmland and open space

2. Overall do you feel the quality of life in Pipestone Township is...? (Check only one):

- a. improving
- b. holding steady
- c. declining

3. Below is a list of services or resources that generally require taxes. How strongly would you support this issue if you knew tax money was to be spent in Pipestone Township for the particular purpose listed below? (Circle the appropriate answer for each.)

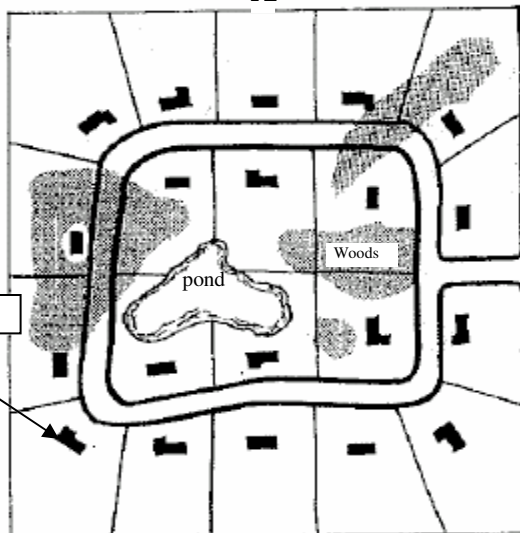
	Services/Resources	Strongly Support	Support	Oppose	Strongly Oppose	Neither Support or Oppose
3.1	Repair roads	4	3	2	1	0
3.2	Pave gravel roads	4	3	2	1	0
3.3	Purchase land for parks and recreation	4	3	2	1	0
3.4	Purchase land for open space preservation	4	3	2	1	0
3.5	Purchase land for farmland preservation	4	3	2	1	0
3.6	Enforce blight	4	3	2	1	0
3.7	Build a system of bike lanes/ trails	4	3	2	1	0
3.8	Install street lights	4	3	2	1	0
3.9	Improve law enforcement	4	3	2	1	0
3.10	Improve fire protection services	4	3	2	1	0
3.11	Improve emergency medical response	4	3	2	1	0
3.12	Install municipal sewer & water services	4	3	2	1	0
3.13	Provide public transit	4	3	2	1	0
3.14	Improve storm drainage	4	3	2	1	0

4. Using the same 44-acre piece of land, which rural subdivision development layout (see diagrams below) do you find the most desirable? (Check one) A or B

Why? _____

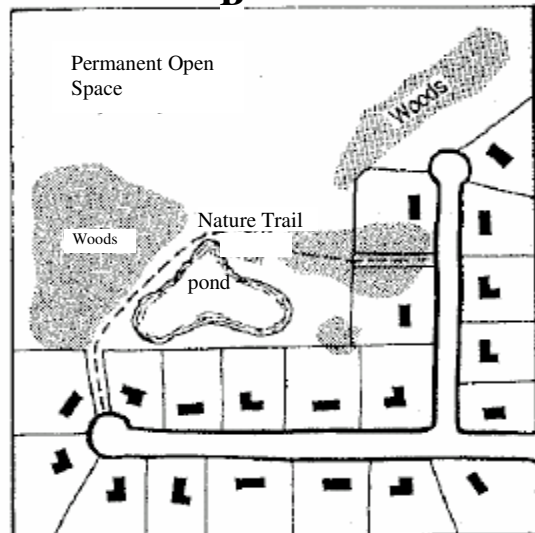
44-acre parcel - 20 lots (2 acres each)
 No permanent open space
 No pond access except from 4 lots

A



44 acre parcel – 20 lots (3/4 acres each)
 25 acres of permanent common open space for all residents
 Pond access for all residents

B



PIPESTONE TOWNSHIP MASTER PLAN

5. How strongly do you agree with the following statements about planning in Pipestone Township? (Circle the appropriate rating.)

		Strongly Agree	Agree	Disagree	Strongly Disagree	No Opinion
5.1	A reasonable mix of housing types (single-family homes, apartments, condominiums, mobile homes) should be encouraged in appropriate locations.	4	3	2	1	0
5.2	It is desirable to permit residential subdivisions to develop with smaller lots in exchange for preserved open space and/or farmland.	4	3	2	1	0
5.3	Higher density residential development should be encouraged around Eau Claire Village.	4	3	2	1	0
5.4	The construction of bike paths, parks and sidewalks in future residential subdivision development should be encouraged.	4	3	2	1	0
5.5	The Township should preserve its rural residential/agricultural character.	4	3	2	1	0
5.6	Certain parts of the Township should be designated for growth.	4	3	2	1	0
5.7	The Township should develop and add the infrastructure and services to attract additional economic development (provide sanitary sewer, municipal water, improved fire/police services, etc.)	4	3	2	1	0
5.8	The Township needs more small retail shops for specialty items, gifts and everyday needs.	4	3	2	1	0
5.9	The Township needs a large retail store (Wal-Mart, K-Mart, etc).	4	3	2	1	0
5.10	Industrial land uses should be restricted to planned industrial parks and adequately buffered from other land uses (especially residential).	4	3	2	1	0
5.11	The Township should allow more land for industrial development.	4	3	2	1	0
5.12	The Township should provide more land for office buildings and light industry.	4	3	2	1	0
5.13	The preservation of prime farmland should be a top priority for the Township.	4	3	2	1	0
5.14	The Township should preserve prime farmland by requiring stricter agricultural zoning requirements (ex. one housing unit per 40 acres).	4	3	2	1	0
5.15	The Township should participate in the County Purchase of Development Rights program to preserve farmland.	4	3	2	1	0
5.16	The preservation of the natural environment should be a top priority for the Township.	4	3	2	1	0
5.17	The Township should adopt ordinances to protect wetlands, streams and rivers.	4	3	2	1	0
5.18	The Township should work with local and regional land conservancies to preserve important natural areas through donations.	4	3	2	1	0
5.19	The Township should require a “no-disturb” or “no-building” zone within a certain distance of rivers, creeks and wetlands to protect water quality.	4	3	2	1	0
5.20	Spending public funds to purchase natural land to keep it as permanent open space is a worthwhile use of public tax dollars.	4	3	2	1	0

6. Below is a list of issues Pipestone Township may face in the next 20 years. Please **circle** the number that best reflects how important each issue will be.

	Issues	Very Important	Important	Somewhat Important	Not Important	No Opinion
6.1	Protection of rivers, natural areas, open spaces and water quality	4	3	2	1	0
6.2	Local employment opportunities	4	3	2	1	0
6.3	Housing for lower income residents	4	3	2	1	0
6.4	Lack of public transportation	4	3	2	1	0
6.5	Availability of industrial sites	4	3	2	1	0
6.6	Availability of commercial sites	4	3	2	1	0
6.7	Development without municipal sewer and water services	4	3	2	1	0
6.8	Cleaner outdoor air	4	3	2	1	0
6.9	Aging septic systems	4	3	2	1	0
6.10	Lack of sidewalks, bike lanes, trails	4	3	2	1	0
6.11	Community appearance	4	3	2	1	0
6.12	Loss of rural atmosphere	4	3	2	1	0
6.13	Preserving historic sites	4	3	2	1	0
6.14	Lack of medical services	4	3	2	1	0
6.15	Lack of public recreation facilities/parks	4	3	2	1	0
6.16	Loss of farmland	4	3	2	1	0
6.17	Services for seniors	4	3	2	1	0

7. In your opinion, how adequate is the **current** availability of housing options in Pipestone Township? (**Circle** appropriate rating.)

	Type of housing	Very Adequate	Adequate	Inadequate	Very Inadequate	No Opinion
7.1	Upscale single family homes	4	3	2	1	0
7.2	Affordable single family homes	4	3	2	1	0
7.3	Multi-family apartment buildings	4	3	2	1	0
7.4	Mobile/Manufactured homes	4	3	2	1	0
7.5	Duplexes/Two-family houses	4	3	2	1	0
7.6	Condominiums/Townhouses	4	3	2	1	0
7.7	Assisted living units for seniors	4	3	2	1	0

8. The current population of Pipestone Township is approximately 2,500. In planning for future population growth, which statement most closely matches your opinion: (**Check** only one.)

- a. ___ The Township should **encourage rapid growth** in housing & population.
- b. ___ The Township should **encourage moderate growth** in housing & population.
- c. ___ The Township should encourage moderate growth in housing & population in areas appropriate for growth.
- d. ___ The Township should **limit growth** in housing & population.
- e. ___ I favor **keeping the same** housing & population.

9. Is there an area in the Township that needs safer pedestrian access? If yes, where? _____

10. Would you or your family use bicycle lanes and trails if more were provided? (**Check** only one.)

- a. ___ yes b. ___ no c. ___ don't know

11. What is the biggest challenge that the community will face as you look toward Pipestone's future?

12. How many years have you lived in Pipestone Township? _____ year(s)

13. If you own property in Pipestone Township, how much property do you own? (**Check** only one.)
 a. _____ Less than a ½ acre c. _____ Between 1 and 2 acres e. _____ Between 10 and 40 acres
 b. _____ Between a ½ acre and 1 acre d. _____ Between 2 and 10 acres f. _____ Over 40 acres

14. Are you currently (**check** only one) a. _____ married? b. _____ single? c. _____ divorced? d. _____ widowed?

15. a. How many adults in your household? _____ b. How many children (under 18) in your household? _____

16. Check the category that identifies your age in years. (**Check** only one.)

a. _____ 18-25 c. _____ 36-50 e. _____ 65-75
 b. _____ 26-35 d. _____ 51-64 f. _____ Over 75

17. Check the category that best describes your education level. (**Check** only one.)

a. _____ Some high school c. _____ Some college e. _____ Bachelor's degree g. _____ Master's degree
 b. _____ High school graduate d. _____ Associate degree f. _____ Some graduate school h. _____ Beyond Master's

18. Check **one** answer that **best** describes **your** occupation. (**Check** only one.)

a. _____ retired f. _____ homemaker k. _____ home-based business
 b. _____ farmer g. _____ semi-skilled laborer l. _____ skilled laborer, craftsman, foreman
 c. _____ manager h. _____ educational m. _____ sales
 d. _____ professional i. _____ clerical
 e. _____ artist j. _____ student

19. Do you farm land in Pipestone Township? a. _____ yes b. _____ no

20. Out of 10 trips **to work or school**, how many times did you go... (Place number of trips beside the answer.)

a. Alone in a vehicle? _____ d. In a carpool/rideshare? _____ f. Bywalking? _____
 b. By bicycle? _____ e. By taxi? _____ g. By public transit? _____
 c. With friends or family in a vehicle? _____

21. Out of 10 trips for other purposes (shopping, recreation, errands, medical services), how many times did you go:

a. Alone in a vehicle? _____ d. In a carpool/rideshare? _____ f. By walking? _____
 b. By bicycle? _____ e. By taxi? _____ g. By public transit _____
 c. With friends or family in a vehicle? _____

22. Please check the category that best describes your annual household income. (**Check** only one.)

a. _____ under \$16,000 c. _____ \$35,001 - \$75,000 e. _____ Over 100,000
 b. _____ \$16,001-\$35,000 d. _____ 75,001-100,000

Township Outreach Efforts

23. How many meetings held by Township elected or appointed officials have you attended in the past twelve (12) months? (**Check** one answer.)

a. _____ 0 meetings c. _____ 4-7 meetings e. _____ 11-13 meetings
 b. _____ 1-3 meetings d. _____ 7-10 meetings f. _____ Over 13 meetings

24. Do you have a computer with Internet service at home? a. _____ yes b. _____ no

25. Have you ever visited the Townships' website (www.pipestonetownship.org)? a. _____ yes b. _____ no
 c. If yes, how many times a year? _____

26. What three sources of information are **most effective** for keeping you informed of public decisions, meetings, and community participation opportunities? (**Check** top three answers.)

a. _____ South Bend Tribune e. _____ Local radio station i. _____ Local Channel on Cable TV
 b. _____ Herald Palladium f. _____ Mail flyers j. _____ Internet
 c. _____ Trade Lines newspaper g. _____ Public School System k. _____ I don't know
 d. _____ Journal Era newspaper h. _____ Word of mouth/Friends

APPENDIX 5~ SURVEY RESULTS

1. Why do you feel Pipestone Township is a desirable place to live? (**Check** all that apply.)

148	a. Rural atmosphere	59	m. Affordable housing/land
136	n. Surrounding farmland and open space	58	c. Lakes and rivers
105	j. Low crime rates	57	l. Ease of commute
96	f. Friendly people	50	b. Outdoor recreation opportunities
93	i. Reasonable tax rate	49	g. Community spirit
67	h. Attractiveness of area	31	e. Quality school system
62	k. Availability of shopping nearby	26	d. Employment opportunities nearby

2. Overall do you feel the quality of life in Pipestone Township is...? (**Check** only one):

30	18%	a. improving
101	60%	b. holding steady
26	16%	c. declining

3. Below is a list of services or resources that generally require taxes. How strongly would you support this issue if you knew tax money was to be spent in Pipestone Township for the particular purpose listed below?

3.1 Repair roads

• Strongly support	76	46%
• Support	69	41%
• Oppose	5	3%
• Strongly Oppose	3	2%
• Neither Support or Oppose	10	6%
• No Selection	4	2%

3.2 Pave gravel roads

• Strongly support	40	24%
• Support	65	39%
• Oppose	26	16%
• Strongly Oppose	12	7%
• Neither Support or Oppose	17	10%
• No Selection	7	4%

3.3 Purchase land for parks and recreation

• Strongly support	20	12%
• Support	44	26%
• Oppose	39	23%
• Strongly Oppose	22	13%
• Neither Support or Oppose	29	17%
• No Selection	13	8%

3.4 Purchase land for open space preservation

• Strongly support	27	16%
• Support	47	28%
• Oppose	29	17%
• Strongly Oppose	17	10%
• Neither Support or Oppose	33	20%
• No Selection	14	8%

3.5 Purchase land for farmland preservation

• Strongly support	28	17%
• Support	50	30%
• Oppose	27	16%
• Strongly Oppose	19	11%
• Neither Support or Oppose	33	20%
• No Selection	10	6%

3.6 Enforce blight

• Strongly support	34	20%
• Support	46	28%
• Oppose	12	7%
• Strongly Oppose	12	7%
• Neither Support or Oppose	42	25%
• No Selection	21	13%

3.7 Build a system of bike lanes/ trails

• Strongly support	18	11%
• Support	29	17%
• Oppose	35	21%
• Strongly Oppose	41	25%
• Neither Support or Oppose	32	19%
• No Selection	12	7%

3.8 Install street lights

• Strongly support	9	5%
• Support	19	11%
• Oppose	51	31%
• Strongly Oppose	43	26%
• Neither Support or Oppose	32	19%
• No Selection	13	8%

3.9 Improve law enforcement

• Strongly support	18	11%
• Support	84	50%
• Oppose	15	9%
• Strongly Oppose	11	7%
• Neither Support or Oppose	30	18%
• No Selection	9	5%

3.10 Improve fire protection services

• Strongly support	22	13%
• Support	94	56%
• Oppose	9	5%
• Strongly Oppose	9	5%
• Neither Support or Oppose	23	14%
• No Selection	10	6%

3.11 Improve emergency medical response

• Strongly support	24	14%
• Support	90	54%
• Oppose	7	4%
• Strongly Oppose	7	4%
• Neither Support or Oppose	30	18%
• No Selection	9	5%

3.12 Install municipal sewer & water services

• Strongly support	8	5%
• Support	11	7%
• Oppose	47	28%
• Strongly Oppose	57	34%
• Neither Support or Oppose	30	18%
• No Selection	14	8%

3.13 Provide public transit

• Strongly support	9	5%
• Support	18	11%
• Oppose	47	28%
• Strongly Oppose	46	28%
• Neither Support or Oppose	36	22%
• No Selection	11	7%

3.14 Improve storm drainage

• Strongly support	14	8%
• Support	43	26%
• Oppose	33	20%
• Strongly Oppose	23	14%
• Neither Support or Oppose	43	26%
• No Selection	11	7%

4. Using the same 44-acre piece of land, which rural subdivision development layout do you find the most desirable? (see diagrams below) (Check one)

30.5	18%	A. 44-acre parcel - 20 lots (2 acres each) No permanent open space No pond access except from 4 lots
107.5	64%	B. 44-acre parcel 20 lots (3/4 acres each) 25 acres of permanent common open space for all residents Pond access for all residents
29	17%	No Selection

Why? Selected excerpts from comments:

- Access for everybody
- Neither . . .
- Neither -- Pipestone Twp does not need subdivision
- Neither -- no subdivisions!
- There are open spaces ...
- we need to have green areas
- More open space for all
- Common open spaces preserve natural setting
- Everyone has access to nature trail etc.,
- NO SUBDIVISION .
- Access to pond & ---- open space
- Use of open space for living
- Open Space can be utilized
- Bigger lots, more space
- More open space
- Open pond and space for everyone
- Like larger lots/like common open space & pond access
- Open space
- Better access
- Provides recreation, open spaces for all residents
- It retains more open land
- permanent open space
- Hard to get people to maintain area
- Pond access for everybody
- Preserve Nature
- Obviously a more desirable plan
- Better layout
- Will restrict future development
- need open space -- nature trails for public
- open space
- More accessible for all
- the open space and excess to pond for all
- open space
- open space, pond & trail for all
- Larger lots -- more space between houses

Why? Selected excerpts from comments: (Continued)

- Neither -- #B is nice . . . needs less lots . .
- Lots sizes
- increase in tax revenue
- not so congested
- Least impact on environment - nature trail a real bonus
- open space & pond access to all
- Less houses per 44 acres
- No Way
- permanent open space
- Usually big lots tend to be neglected
- You want open space around Trail
- Who would maintain the open space?
- Better access to a picnic/family area for more people
- Neither, Is this a Hypothetical Question?
- Prefer larger lots, Best option would be in middle between A & B
- All of the land is on Tax rolls
- Open space/pond provides wildlife habitat
- Hate to see houses too close together
- more county & nature type
- See Attached (note attached)
- Pond access for all
- None, do not support subdivisions in township
- Neither, they both suck
- All residents have access
- Access by all/ space for all
- Access for all, Keeping same value for all . .
- B allows many dangerous areas for children
- neither
- Neither, don't like subdivisions
- Some nature is preserved, but no subdivision would be better
- More houses with land access & pond walk trail
- More usable park
- Layout
- Larger lots (but also like open space)
- More room
- We don't need a subdivision in Pipestone twp.
- Bigger lots
- More natural setting
- Common open space/pond access for all
- Open space
- less disturbing to wildlife & better sharing by residents
- Saves land
- Because of Nature trails
- Nature
- Wildlife
- Neither, we moved here to be away from houses . .
- Open space, protects woods, shares pond
- leaving open space and has nature trail
- Easier to maintain smaller lots

Why? Selected excerpts from comments: (Continued)

- . . for all people . .
- . . Green area, more lots/arce, less land for housing, more for A.G.
- Everyone can share pond and open fields
- Leave woods & ? & area for recreation/less lots more acres/lot
- more open space
- Accomodates people & nature in..common open space
- ..lots face pond...nature trail & woods are perks
- Access to wood area and pond
- Pond & nature trail for everyone
- Area for all to enjoy natural setting
- Share all together
- Neither
- Permanent open space
- Everyone can enjoy pond & open space
- Neither . .
- Better use of land, more diverse sites
- Better utilization of space & Development of profitability
- Less than two acres would be congested
- common space for all residents
- open space preservation
- Open space more people can use
- If you want .. Subdivision, 2 acres would be nicer than 3/4 & open space in back
- Access for everyone
- Access to woods & pond open to all residents . .
- Access for everyone
- Tresspass issues
- Nature preservation, but lots could be larger.
- Open area
- None -- NO subdivisions
- Open spaces
- More open space everyone can use . .
- More open space
- Save open land
- More rural access for all residents, open space
- Open Space
- More open land . . Also pond access
- Retain permanent open space
- Preserve nature
- Less damage to woods and pond
- Permanent open space
- Leave land open/wooded for animals
- NONE
- Open Space
- Freer access for emegency vehicles & trash service
- Park area for residents
- Open pond/nature trail, 2 acres = lots of mowing
- None
- Leaves more natural enviroment
- improves community spirit

Why? Selected excerpts from comments: (Continued)

- Neither
- Open space buffer between subdivision & rural residences
- permanent open space environmentally beneficial
- Community ponds & woods . . .
- Nature access for all, large lots become unkempt
- use of lots don't allow small minded & bugeted people in
- None -- our farmland is shrinking fast enough

5. How strongly do you agree with the following statements about planning in Pipestone township?

5.1 A reasonable mix of housing types (single-family homes, apartments, condominiums, mobile homes) should be encouraged in appropriate locations.

• Strongly Agree	29	17%
• Agree	58	35%
• Disagree	35	21%
• Strongly Disagree	25	15%
• No Opinion	12	7%
• No selection	8	5%

5.2 It is desirable to permit residential subdivisions to develop with smaller lots in exchange for preserved open space and/or farmland.

• Strongly Agree	23	14%
• Agree	56	34%
• Disagree	34	20%
• Strongly Disagree	36	22%
• No Opinion	7	4%
• No selection	11	7%

5.3 Higher density residential development should be encouraged around Eau Claire Village.

• Strongly Agree	22	13%
• Agree	55	33%
• Disagree	36	22%
• Strongly Disagree	25	15%
• No Opinion	18	11%
• No selection	11	7%

5.4 The construction of bike paths, parks and sidewalks in future residential subdivision development should be encouraged.

• Strongly Agree	28	17%
• Agree	63	38%
• Disagree	33	20%
• Strongly Disagree	22	13%
• No Opinion	15	9%
• No selection	6	4%

5.5 The Township should preserve its rural residential/agricultural character

• Strongly Agree	103	62%
• Agree	46	28%
• Disagree	3	2%
• Strongly Disagree	3	2%
• No Opinion	5	3%
• No selection	7	4%

5.6 Certain parts of the Township should be designated for growth.

• Strongly Agree	25	15%
• Agree	80	48%
• Disagree	22	13%
• Strongly Disagree	15	9%
• No Opinion	16	10%
• No selection	9	5%

5.7 The Township should develop and add the infrastructure and services to attract additional economic development (provide sanitary sewer, municipal water, improved fire/police services, etc.)

• Strongly Agree	5	3%
• Agree	50	30%
• Disagree	48	29%
• Strongly Disagree	38	23%
• No Opinion	18	11%
• No selection	8	5%

5.8 The Township needs more small retail shops for specialty items, gifts and everyday needs

• Strongly Agree	18	11%
• Agree	54	32%
• Disagree	49	29%
• Strongly Disagree	23	14%
• No Opinion	17	10%
• No selection	6	4%

5.9 The Township needs a large retail store (Wal-Mart, K-Mart, etc)

• Strongly Agree	10	6%
• Agree	16	10%
• Disagree	51	31%
• Strongly Disagree	76	46%
• No Opinion	8	5%
• No selection	6	4%

5.10 Industrial land uses should be restricted to planned industrial parks and adequately buffered from other land uses (especially residential)

• Strongly Agree	65	39%
• Agree	74	44%
• Disagree	7	4%
• Strongly Disagree	3	2%
• No Opinion	7	4%
• No selection	11	7%

5.11 The Township should allow more land for industrial development

• Strongly Agree	12	7%
• Agree	39	23%
• Disagree	52	31%
• Strongly Disagree	34	20%
• No Opinion	19	11%
• No selection	11	7%

5.12 The Township should provide more land for office buildings and light industry.

• Strongly Agree	15	9%
• Agree	49	29%
• Disagree	46	28%
• Strongly Disagree	23	14%
• No Opinion	21	13%
• No selection	13	8%

5.13 The preservation of prime farmland should be a top priority for the Township

• Strongly Agree	75	45%
• Agree	49	29%
• Disagree	17	10%
• Strongly Disagree	3	2%
• No Opinion	15	9%
• No selection	8	5%

5.14 The Township should preserve prime farmland by requiring stricter agricultural zoning requirements (ex. one housing unit per 40 acres).

• Strongly Agree	34	20%
• Agree	41	25%
• Disagree	43	26%
• Strongly Disagree	17	10%
• No Opinion	23	14%
• No selection	9	5%

5.15 The Township should participate in the County Purchase of Development Rights program to preserve farmland.

• Strongly Agree	28	17%
• Agree	47	28%
• Disagree	26	16%
• Strongly Disagree	16	10%
• No Opinion	41	25%
• No selection	9	5%

5.16 The preservation of the natural environment should be a top priority for the Township.

• Strongly Agree	64	38%
• Agree	63	38%
• Disagree	10	6%
• Strongly Disagree	7	4%
• No Opinion	14	8%
• No selection	9	5%

5.17 The Township should adopt ordinances to protect wetlands, streams and rivers.

• Strongly Agree	67	40%
• Agree	66	40%
• Disagree	11	7%
• Strongly Disagree	5	3%
• No Opinion	10	6%
• No selection	8	5%

5.18 The Township should work with local and regional land conservancies to preserve important natural areas through donations.

• Strongly Agree	57	34%
• Agree	76	46%
• Disagree	7	4%
• Strongly Disagree	3	2%
• No Opinion	18	11%
• No selection	6	4%

5.19 The Township should require a “no-disturb” or “no-building” zone within a certain distance of rivers, creeks and wetlands to protect water quality.

• Strongly Agree	60	36%
• Agree	56	34%
• Disagree	23	14%
• Strongly Disagree	5	3%
• No Opinion	17	10%
• No selection	6	4%

5.20 Spending public funds to purchase natural land to keep it as permanent open space is a worthwhile use of public tax dollars.

• Strongly Agree	37	22%
• Agree	53	32%
• Disagree	35	21%
• Strongly Disagree	17	10%
• No Opinion	17	10%
• No selection	8	5%

6. Below is a list of issues Pipestone Township may face in the next 20 years. Please circle the number that best reflects how important each issue will be.

6.1 Protection of rivers, natural areas, open spaces and water quality

• Very Important	97	58%
• Important	48	29%
• Somewhat Important	12	7%
• Not Important	3	2%
• No Opinion	2	1%
• No Selection	5	3%

6.2 Local employment opportunities

• Very Important	46	28%
• Important	58	35%
• Somewhat Important	42	25%
• Not Important	10	6%
• No Opinion	4	2%
• No Selection	7	4%

6.3 Housing for lower income residents

• Very Important	12	7%
• Important	31	19%
• Somewhat Important	62	37%
• Not Important	51	31%
• No Opinion	5	3%
• No Selection	6	4%

6.4 Lack of public transportation

• Very Important	10	6%
• Important	17	10%
• Somewhat Important	36	22%
• Not Important	75	45%
• No Opinion	17	10%
• No Selection	12	7%

6.5 Availability of industrial sites

• Very Important	12	7%
• Important	28	17%
• Somewhat Important	42	25%
• Not Important	61	37%
• No Opinion	15	9%
• No Selection	9	5%

6.6 Availability of commercial sites

• Very Important	16	10%
• Important	29	17%
• Somewhat Important	45	27%
• Not Important	53	32%
• No Opinion	15	9%
• No Selection	9	5%

6.7 Development without municipal sewer and water services

• Very Important	9	5%
• Important	43	26%
• Somewhat Important	50	30%
• Not Important	33	20%
• No Opinion	20	12%
• No Selection	12	7%

6.8 Cleaner outdoor air

• Very Important	55	33%
• Important	54	32%
• Somewhat Important	28	17%
• Not Important	12	7%
• No Opinion	10	6%
• No Selection	8	5%

6.9 Aging septic systems

• Very Important	26	16%
• Important	52	31%
• Somewhat Important	45	27%
• Not Important	24	14%
• No Opinion	13	8%
• No Selection	7	4%

6.10 Lack of sidewalks, bike lanes, trails

• Very Important	11	7%
• Important	31	19%
• Somewhat Important	39	23%
• Not Important	58	35%
• No Opinion	19	11%
• No Selection	9	5%

6.11 Community appearance

• Very Important	53	32%
• Important	62	37%
• Somewhat Important	33	20%
• Not Important	8	5%
• No Opinion	5	3%
• No Selection	6	4%

6.12 Loss of rural atmosphere

• Very Important	80	48%
• Important	47	28%
• Somewhat Important	20	12%
• Not Important	5	3%
• No Opinion	7	4%
• No Selection	8	5%

6.13 Preserving historic sites

• Very Important	45	27%
• Important	56	34%
• Somewhat Important	34	20%
• Not Important	14	8%
• No Opinion	8	5%
• No Selection	10	6%

6.14 Lack of medical services

• Very Important	30	18%
• Important	50	30%
• Somewhat Important	53	32%
• Not Important	20	12%
• No Opinion	5	3%
• No Selection	9	5%

6.15 Lack of public recreation facilities/parks

• Very Important	12	7%
• Important	41	25%
• Somewhat Important	60	36%
• Not Important	35	21%
• No Opinion	8	5%
• No Selection	11	7%

6.16 Loss of farmland

• Very Important	78	47%
• Important	45	27%
• Somewhat Important	27	16%
• Not Important	6	4%
• No Opinion	3	2%
• No Selection	8	5%

6.17 Services for seniors

• Very Important	46	28%
• Important	55	33%
• Somewhat Important	44	26%
• Not Important	9	5%
• No Opinion	3	2%
• No Selection	10	6%

7. In your opinion, how adequate is the current availability of housing options in Pipestone Township? (Circle appropriate rating.)

7.1 Upscale single family homes

• Very Adequate	29	17%
• Adequate	77	46%
• Inadequate	20	12%
• Very Inadequate	9	5%
• No Opinion	17	10%
• No Selection	15	9%

7.2 Affordable single family homes

• Very Adequate	26	16%
• Adequate	90	54%
• Inadequate	21	13%
• Very Inadequate	4	2%
• No Opinion	15	9%
• No Selection	11	7%

7.3 Multi-family apartment buildings

• Very Adequate	22	13%
• Adequate	50	30%
• Inadequate	27	16%
• Very Inadequate	14	8%
• No Opinion	41	25%
• No Selection	13	8%

7.4 Mobile/Manufactured homes

• Very Adequate	34	20%
• Adequate	73	44%
• Inadequate	14	8%
• Very Inadequate	7	4%
• No Opinion	27	16%
• No Selection	12	7%

7.5 Duplexes/Two-family houses

• Very Adequate	23	14%
• Adequate	70	42%
• Inadequate	25	15%
• Very Inadequate	6	4%
• No Opinion	31	19%
• No Selection	12	7%

7.6 Condominiums/Townhouses

• Very Adequate	26	16%
• Adequate	40	24%
• Inadequate	27	16%
• Very Inadequate	16	10%
• No Opinion	46	28%
• No Selection	12	7%

7.7 Assisted living units for seniors

• Very Adequate	12	7%
• Adequate	39	23%
• Inadequate	49	29%
• Very Inadequate	25	15%
• No Opinion	30	18%
• No Selection	12	7%

8. The current population of Pipestone Township is approximately 2,500. In planning for future population growth, which statement most closely matches your opinion: (Check only one.)

3	2%	a. The Township should encourage rapid growth in housing & population.
13	8%	b. The Township should encourage moderate growth in housing & population.
91	54%	c. The Township should encourage moderate growth in housing & population in areas appropriate for growth.
26	16%	d. The Township should limit growth in housing & population.
32	19%	e. I favor keeping the same housing & population.
2	1%	f. No Selection

9. Is there an area in the Township that needs safer pedestrian access? If yes, where?

Selections from comments:

(22) No's	crossing high school & football field	All rural roads
(2) 0	Pipestone Road	Naomi Road
(4) ?	Twp Hall needs parking & access	Elizabeth Park
Eau Claire . . .	Every paved main road	unknown
Around Benton Harbor	around pipestone creek	not sure
near schools zones	along Naomi, bike/walking path	Around Indian Lake
Sommer & Clausen . .	(checked)	Mailbox location . . .
Park Rd. & Pipestone Rd.	Don't Know	

10. Would you or your family use bicycle lanes and trails if more were provided?
 (Check only one.)

61	37%	a. yes
71	43%	b. no
26	16%	c. don't know
9	5%	No Selection

11. What is the biggest challenge that the community will face as you look toward Pipestone's future?

Selected excerpts from comments:

- Bringing too many homes on farmland
- . . to preserve farmland . . keep housing down
- Keeping it rural
- Preserving Farmland
- Keep our farmers & not lose our country atmosphere
- Resisting development, keeping taxes low
- Too many houses and people
- Blight
- over population
- Better roads
- Community growing with families but commercial opportunities pull them out
- Land being developed for housing
- Keeping the township attractive, we need "enforced" codes. .
- Not sure!
- Provide services/housing . . attract . . single family . . increase tax base
- Reduction in farming, road repair, enforce blight
- Safety as urban areas grow
- meeting expenses
- The sale of farmland . . .
- Building nicer homes in the area w/good schools . . .
- Residential Building
- To attract a governing body with intelligence . .
- There are to many newcomers coming into our township . .
- over population
- Preserving the land . . Open land and farms
- Maintaining property values -- neat and clean properties
- . . drugs out of schools, roads usable . .
- Road Repair
- Racial discrimination . . .
- Attracting new businesses & private homes to area
- That people are told what they can have on **THEIR** property
- Balancing growth while preserving our natural setting
- Keep twp clean . . people will want to build . . keeping farms . .
- Losing farmland & rural atmosphere . .
- Clean up Pipestone Township
- Keep rural atmosphere - not overdevelop area

Selected excerpts from comments: (continued)

- Higher taxes
- Speed law enforcement
- Adequate middleclass employment opportunities . .
- Drawing people into the community w/the level of Education . .
- Roads and Infrastructure
- Keeping rural atmosphere, Preserving farmland . .
- Lower taxes
- Roads are always a problem, not allowing too much growth . .
- Education/Improving the school system
- Unseating the current Township Supervisor . .
- preservation of natural resources
- Greed, no I in team, rich people . .
- Same service to everyone . .
- Need rycleing prgram/items picked up at home . .
- maintain rural charm ... Fair & efficient use of tax increases
- Making high speed internet available to everyone
- Challenge to farmlands... larger lot sizes speed up loss of land . .
- attracting business
- Blight, snow removal, road maintenance
- Blight
- Keeping Taxes low/Keeping waterways clean and useable
- We will lose too much GOOD FARMLAND . .
- Money for roads
- . . . Please take care of the roads
- Energy cost
- Curbing Blight & perserving farm land
- Education
- keeping it anagricultural base . . A good school system
- Preserving farmland & natural spaces . .
- Growth without urbanization/improve schools
- Traffic due to growth along Pipestone . .
- Protecting the rural nature of twp, loss of farmland & woods
- Improving school system . .
- overcoming preconcieved . .
- Eliminate "Buddy" system on the Twp. Board, enforce ordinances
- Road Upkeep
- Increase of Imagrination population
- Development w/o overreaching (financially, environmentally)
- Improve roads, Preserve of farmland, Cleaner water/air, Enforce law
- Improve education, new business, Teen recreation, Stores open later
- Loss of farmland & open spaces
- Limiting growth to preserve peace & quiet . .
- Control growth to reasonable rate . .
- Attracting population of employed taxpayers/Tougher zoning
- Loss of farmland to ... 10 acre lawns
- Sububan sprawl . . Preserving Eau Claire
- need affordable rent based on income . .
- keeping developers out of the rural areas
- loss of rural identity

Selected excerpts from comments: (continued)

- Keeping good schools and preserving good farmland
- keeping our community rural
- Improve schools, Increase taxes for #3, rural crime, city people . .
- Employment
- Rural land being used for residential . . Loss of narural areas
- Keeping the rural atmosphere
- Keeping it as a rural community
- Preserving the small town atmosphere
- Saving farmland and open land
- Loss of farm land to developers
- Keep up with changes, More active to protect environment
- Preserve small farms, keep it country, peaceful, quiet, safe . .
- Loss of farming land
- Maintain quiet rural environment, protect environment, allow for growth . .
- Keeping it a rural community, preserveing farmland
- Keep open/wooded land . . Cut spending . .
- Keep development out . . Tax breaks for not building on farm land or to fix old houses . .
- Avoid cheap manufactured homes . .
- not enough natural gas lines, need more water & sewer lines, more businesses for jobs
- Losing our farm land
- Economic development, lower taxes
- Land development & cost of living . .
- Lower property taxes
- Preserving rural & agricultural . . Affordable property taxes
- Drawing & keeping retailers & employers . . developer friendly . . smart population growth . .
- Keeping cost of living here affordable
- Higher taxes it tuff enough NOW

12. How many years have you lived in Pipestone Township?

37	22%	a. 9 or less years
24	14%	b. 10 to 19 years
47	28%	c. 20 to 39 years
32	19%	d. 40 to 59 years
18	11%	e. 60 to 91 years
9	5%	f. no information

13. If you own property in Pipestone Township, how much property do you own?
(Check only one.)

8	5%	a. Less than a ½ acre
5	3%	b. Between a ½ acre and 1 acres
24	14%	c. Between 1 and 2 acres
52	31%	d. Between 2 and 10 acres
46	28%	e. Between 10 and 40 acres
25	15%	f. Over 40 acres
7	4%	No Selection

14. Are you currently (**check** only one)

123	74%	a. married
2	1%	b. single
6	4%	c. divorced
21	13%	d. widowed
15	9%	No Selection

15. Head Count

How many adults in your household?	321
How many children (under 18) in your household?	75

16. Check the category that identifies your age in years. (**Check** only one.)

0	0%	a. 18 -- 25
15	9%	b. 26 -- 35
43	26%	c. 36 -- 50
47	28%	d. 51 -- 64
35	21%	e. 65 -- 75
21	13%	f. over 75
6	4%	No Selection

17. Check the category that best describes your education level. (**Check** only one.)

10	6%	a. Some high school
46	28%	b. High school graduate
48	29%	c. Some college
19	11%	d. Associate degree
20	12%	e. Bachelor's degree
4	2%	f. Some graduate school
10	6%	g. Master's degree
3	2%	h. Beyond a Master's degree
6	4%	No Selection

18. Check **one** answer that **best** describes **your** occupation. (Check only one.)

58	35%	a. retired
11	7%	b. farmer
7	4%	c. manager
31	19%	d. professional
0	0%	e. artist
8	5%	f. homemaker
7	4%	g. semi-skilled laborer
9	5%	h. educational
5	3%	i. clerical
0	0%	j. student
7	4%	k. home-based business
26	16%	l. skilled laborer, craftsman, foreman
11	7%	m. sales
13	8%	More than one choice

19. Do you farm land in Pipestone Township?

30	18%	a. yes
130	78%	b. no
7	4%	No Selection

20. Out of 10 trips **to work or school**, how many times did you go...
(Place number of trips beside the answer.)

1042	79%	a. Alone in a vehicle?
10	1%	b. By bicycle?
246	19%	c. With friends or family in a vehicle?
15	1%	d. In a carpool/rideshare?
0	0%	e. By taxi?
14	1%	f. By walking?
0	0%	g. By public transit

21. Out of 10 trips for other purposes (shopping, recreation, errands, medical services), how many times did you go:

894	61%	a. Alone in a vehicle?
16	1%	b. By bicycle?
536	36%	c. With friends or family in a vehicle?
13	1%	d. In a carpool/rideshare?
0	0%	e. By taxi?
18	1%	f. By walking?
0	0%	g. By public transit

22. Please check the category that best describes your annual household income.
 (Check only one.)

7	4%	a. under \$16,000
39	23%	b.\$16,001-\$35,000
61	37%	c.\$35,001 - \$75,000
22	13%	d. 75,001-100,000
11	7%	e. Over 100,000
27	16%	No Selection

Township Outreach Efforts

23. How many meetings held by Township elected or appointed officials have you attended in the past twelve (12) months? (Check one answer.)

115	69%	a. 0 meetings
31	19%	b. 1-3 meetings
7	4%	c. 4-7 meetings
1	1%	d. 7-10 meetings
5	3%	e. 11-13 meetings
1	1%	f. Over 13 meetings
7	4%	No Selection

24. Do you have a computer with Internet service at home?

103	62%	a. yes
56	34%	b. no
8	5%	No Selection

25. Have you ever visited the Townships' website (www.pipestonetownship.org)?

8	5%	a. yes	If yes, how many times a year?	16
139	83%	b. no		
20	12%	No Selection		

26. What three sources of information are **most effective** for keeping you informed of public decisions, meetings, and community participation opportunities? (Check top three answers.)

14	4%	a. South Bend Tribune
90	25%	b. Herald Palladium
57	16%	c. Trade Lines newspaper
19	5%	d. Journal Era newspaper
43	12%	e. Local radio station
71	19%	f. Mail flyers
15	4%	g. Public School System
15	4%	h. Word of mouth/Friends
29	8%	i. Local Channel on Cable TV
9	2%	j. Internet
5	1%	k. I don't know

APPENDIX 6 ~ ENDANGERED SPECIES

Michigan Natural Features Inventory (MNFI) is a cooperative program of Michigan State University Extension and the Michigan Department of Natural Resources. MNFI’s mission is to identify, evaluation, and track locations of Michigan's rarest species and exceptional examples of the State's natural plant communities and to provide that information to the public and private sectors for decision-making that affects Michigan's biological diversity. MNFI was established in 1980 and manages an ongoing, continuously updated information base regarding these biological factors.

The following is a listing of all known occurrences of threatened, endangered, and special concern species and high quality natural communities occurring within a watershed that is mostly in Pipestone Township. The data is not available on a township basis. The species and community information is derived from the Michigan Natural Features Inventory database. The watersheds are based on the 14 digit Hydraulic Unit Codes (HUC) as designated by the United States Department of Agriculture. Information from the database cannot provide a definitive statement on the presence, absence, or condition of the natural features in any given locality, since much of the state has not been specifically or thoroughly surveyed for their occurrence and the conditions at previously surveyed sites are constantly changing. Because of the inherent difficulties in surveying for threatened, endangered, and special concern species and inconsistency of inventory efforts across the State species may be present in a watershed and not appear on this list. The list should be used as a reference of which natural features currently or historically were recorded in the area and should be considered when developing land use plans. Included in the list is scientific name, common name, element type, federal status, and state status for each element. More information can be found on MNFI’s website at <http://web4.msue.msu.edu/mnfi/home.cfm>.

Federal and State Status codes used in table below:

State Status:

E = endangered, T = threatened, SC = special concern

Federal Status:

LE = listed endangered, LT = listed threatened,

C = species being considered for federal status

Watershed ID 4050001 34 0

Updated 9/19/2006

Scientific Name	Common Name	Federal Status	State Status
<i>Acris crepitans blanchardi</i>	Blanchard's Cricket Frog		SC
<i>Agrimonia rostellata</i>	Beaked Agrimony		SC
<i>Amorpha canescens</i>	Leadplant		SC
<i>Androsace occidentalis</i>	Rock-jasmine		E
<i>Arabis missouriensis</i> var. <i>deamii</i>	Missouri Rock-cress		SC
<i>Aristida tuberculosa</i>	Beach Three-awned Grass		T
<i>Aristolochia serpentaria</i>	Virginia Snakeroot		T
<i>Asclepias purpurascens</i>	Purple Milkweed		SC
<i>Baptisia lactea</i>	White or Prairie False Indigo		SC
<i>Baptisia leucophaea</i>	Cream Wild Indigo		E

PIPESTONE TOWNSHIP MASTER PLAN

Berula erecta	Cut-leaved Water-parsnip	T
Bog		
Cacalia plantaginea	Prairie Indian-plantain	SC
Carex lupuliformis	False Hop Sedge	T
Carex oligocarpa	Eastern Few-fruited Sedge	T
Carex seorsa	Sedge	T
Catocala dulciola	Quiet Underwing	SC
Catocala illecta	Magdalen Underwing	SC
Cirsium hillii	Hill's Thistle	SC
Clemmys guttata	Spotted Turtle	T
Clonophis kirtlandii	Kirtland's Snake	E
Coastal plain marsh	Infertile Pond/marsh, Great Lakes Type	
Coreopsis palmata	Prairie Coreopsis	T
Corydalis flavula	Yellow Fumewort	T
Cuscuta glomerata	Rope Dodder	SC
Cyclonaias tuberculata	Purple Wartyback	SC
Cypripedium candidum	White Lady-slipper	T
Digitaria filiformis	Slender Finger-grass	X
Discus patulus	Domed Disc	SC
Dry-mesic southern forest		
Dryopteris celsa	Log Fern	T
Elaphe obsoleta obsoleta	Black Rat Snake	SC
Eleocharis equisetoides	Horsetail Spike-rush	SC
Eleocharis melanocarpa	Black-fruited Spike-rush	SC
Emergent marsh		
Emys blandingii	Blanding's Turtle	SC
Eryngium yuccifolium	Rattlesnake-master	T
Eupatorium sessilifolium	Upland Boneset	T
Filipendula rubra	Queen-of-the-prairie	T
Fimbristylis puberula	Chestnut Sedge	X
Fuirena squarrosa	Umbrella-grass	T
Fundulus dispar	Starhead Topminnow	SC
Galearis spectabilis	Showy Orchis	T
Gentiana flavida	White Gentian	E
Gentiana saponaria	Soapwort Gentian	X
Gentianella quinquefolia	Stiff Gentian	T
Geum virginianum	Pale Avens	SC
Great Blue Heron Rookery	Great Blue Heron Rookery	
Gymnocladus dioicus	Kentucky Coffee-tree	SC
Hardwood-conifer swamp		
Helianthus hirsutus	Whiskered Sunflower	SC
Helianthus mollis	Downy Sunflower	T
Hemicarpha micrantha	Dwarf-bulrush	SC
Heterocampa subrotata	Small Heterocampa	SC
Hybanthus concolor	Green Violet	SC

PIPESTONE TOWNSHIP MASTER PLAN

Hydrastis canadensis	Goldenseal		T
Intermittent wetland	Infertile Pond/marsh, Great Lakes Type		
Inundated Shrub Swamp	Shrub Swamp, Central Midwest Type		
Juncus scirpoides	Scirpus-like Rush		T
Kuhnia eupatorioides	False Boneset		SC
Lespedeza procumbens	Trailing Bush-clover		X
Linum virginianum	Virginia Flax		T
Ludwigia alternifolia	Seedbox		SC
Lycopodium appressum	Northern Prostrate Clubmoss		SC
Lysimachia hybrida	Swamp Candles		SC
Meropleon ambifusca	Newman's Brocade		SC
Mesic Prairie	Tallgrass Prairie, Central Midwest Type		
Mesic southern forest	Rich Forest, Central Midwest Type		
Mesodon elevatus	Proud Globe		SC
Mesomphix cupreus	Copper Button		SC
Microtus ochrogaster	Prairie Vole		E
Morus rubra	Red Mulberry		T
Neonympha mitchellii mitchellii	Mitchell's Satyr	LE	E
Oecanthus laricis	Tamarack Tree Cricket		SC
Oxalis violacea	Violet Wood-sorrel		T
Panax quinquefolius	Ginseng		T
Panicum leibergii	Leiberg's Panic-grass		T
Panicum verrucosum	Warty Panic-grass		T
Papaipema cerina	Golden Borer		SC
Papaipema maritima	Maritime Sunflower Borer		SC
Papaipema sciata	Culvers Root Borer		SC
Papaipema silphii	Silphium Borer Moth		T
Papaipema speciosissima	Regal Fern Borer		SC
Philomycus carolinianus	Carolina Mantleslug		SC
Phlox maculata	Wild Sweet William or Spotted Phlox		T
Platanthera ciliaris	Orange or Yellow Fringed Orchid		T
Poa paludigena	Bog Bluegrass		T
Polemonium reptans	Jacob's Ladder or Greek-valerian		T
Polygala cruciata	Cross-leaved Milkwort		SC
Polygonum careyi	Carey's Smartweed		T
Polymnia uvedalia	Large-flowered Leafcup		T
Potamogeton bicupulatus	Waterthread Pondweed		T
Potamogeton pulcher	Spotted Pondweed		T
Prairie fen	Alkaline Shrub/herb Fen, Midwest Type		
Prosapia ignipectus	Red-legged Spittlebug		SC
Psilocarya scirpoides	Bald-rush		T
Pycnanthemum pilosum	Hairy Mountain-mint		T
Relict conifer swamp	Forested Bog, Central Midwest Type		
Rhexia virginica	Meadow-beauty		SC
Rhynchospora macrostachya	Tall Beak-rush		SC

PIPESTONE TOWNSHIP MASTER PLAN

<i>Rotala ramosior</i>	Tooth-cup		SC
<i>Scleria pauciflora</i>	Few-flowered Nut-rush		E
<i>Scutellaria elliptica</i>	Hairy Skullcap		SC
<i>Silene stellata</i>	Starry Campion		T
<i>Silphium integrifolium</i>	Rosinweed		T
<i>Silphium laciniatum</i>	Compass-plant		T
<i>Sistrurus catenatus catenatus</i>	Eastern Massasauga	C	SC
Southern floodplain forest			
Southern swamp			
<i>Spartinophaga inops</i>	Spartina Moth		SC
<i>Stellaria crassifolia</i>	Fleshy Stitchwort		T
<i>Terrapene carolina carolina</i>	Eastern Box Turtle		SC
<i>Trillium recurvatum</i>	Prairie Trillium		T
<i>Trillium sessile</i>	Toadshade		T
<i>Triphora trianthophora</i>	Three-birds Orchid		T
<i>Valeriana edulis var. ciliata</i>	Edible Valerian		T
<i>Valerianella chenopodiifolia</i>	Goosefoot Corn-salad		T
<i>Viburnum prunifolium</i>	Black Haw		SC
<i>Viola pedatifida</i>	Prairie Birdfoot Violet		T
<i>Vitis vulpina</i>	Frost Grape		T
Wet prairie	Wet Prairie, Midwest Type		
<i>Wisteria frutescens</i>	Wisteria		T
Woodland prairie	High Prairie, Midwest Type		
<i>Zizania aquatica var. aquatica</i>	Wild-rice		T

APPENDIX 7 ~ CENSUS DEFINITIONS

Definitions from the U.S. Census:

Population - All people, male and female, child and adult, living in a given geographic area.

Resident population - Resident population of the United States includes persons resident in the 50 States and the District of Columbia. It excludes residents of the Commonwealth of Puerto Rico, and residents of the island areas under United States sovereignty or jurisdiction (principally American Samoa, Guam, Virgin Islands of the United States, and the Commonwealth of the Northern Mariana Islands). A resident of a specific area for Census 2000 is defined as a person "usually resident" in that area. Resident population excludes the United States Armed Forces overseas, as well as civilian United States citizens whose usual place of residence is outside the United States.⁵

The U.S. Census Bureau defines poverty as follows: "**Poverty definition.** Following the Office of Management and Budget's (OMB's) Directive 14, the Census Bureau uses a set of money income thresholds that vary by family size and composition to detect who is poor. If a family's total income is less than that family's threshold, then that family, and every individual in it, is considered poor. The poverty thresholds do not vary geographically, but they are updated annually for inflation with the Consumer Price Index (CPI-U). The official poverty definition counts money income before taxes and excludes capital gains and non-cash benefits (such as public housing, Medicaid, and food stamps)."

⁵ http://factfinder.census.gov/home/en/epss/glossary_p.html#population

APPENDIX 8 ~ TOURISM/AGRI-TOURISM

Because agriculture and tourism are two of the most visible activities and industries presently occurring in southwestern Michigan, there is a natural fit and window of opportunity for Pipestone Township that offers the visitor a serene, beautiful, and unspoiled environment. Pipestone Township has an accessible base of potential customers with Chicago located 100 miles to the east and Indianapolis located 160 miles to the south. Tourism creates a substantial number of jobs for residents of southwestern Michigan and it also generates a steady stream of income through increased consumer activity. In 2000, Berrien County ranked 12th in the State with \$138 million in tourism spending.

According to a special travel poll conducted in 2001 by the Travel Industry Association of America, rural tourism appeals to many Americans, with 62 percent of all U.S. adults taking a trip to a small town or village in the U.S. within the past three years. This translates to 86.8 million U.S. adults. Of those 86.8 million adults, 15 percent stated they had visited an orchard, winery, or working farm. "These numbers show there is definitely a market for rural attractions," said William S. Norman, president and CEO of the Travel Industry Association of America. "Small-town America appeals to many travelers because of its unique charm, in addition to the wide variety of activities and history. The quiet pace is an alternative to the hustle and bustle of larger cities." On a more local level, studies by Michigan State University (MSU) and the Michigan Agricultural Statistics Service demonstrate the growing significance of Michigan's grape and wine industry to Michigan agriculture and the state's overall economy.

In a recently released MSU study entitled "A Marketing and Economic Analysis of Michigan's Wine Industry and Winery Tourism," it was estimated that Michigan's grape and wine industry contributed more than \$75 million in state economic activity in 2000. Of this, more than \$16 million is directly attributed to winery tourism. According to the report, travelers tend to extend their stays in local communities by at least one half day to specifically include winery visits in their overall travel experience.

Pipestone Township and surrounding townships have already experienced some successes in Agri-tourism with the Cherry Spit Contest held in July (which receives national notoriety) along with several orchards and small farm stands located within the township. Pipestone Township has resources that could offer visitors a *memorable experience*, which has been identified as a new stage of economic offering.

Tourism is similar to many other industries; a harmonious environment is conducive for growth. The most feasible way to create such an environment is through planning and collaboration. Tourism development needs to start with government and business leaders who appreciate the benefits tourism has to offer a community and its residents.

Examples of Agri-tourism activities include:

OVERNIGHT STAYS

- Bed & breakfast/cabin rentals
- Campsites/RV camping
- Working Farms
- Youth camp/farm vacation (dude ranch)
- Weddings, receptions, honeymoons

SPECIAL EVENTS & FESTIVALS

- Haunted house/hay rides
- Music & harvest festivals
- Specific use destination (used for training, seminars or weddings)

RECREATION & ACTIVITIES

- U-Picks
- Educational
- Fee fishing, fee hunting, skeet shooting
- Biking, hiking
- Corn maze/petting zoo
- Horseback riding
- Bird watching
- Hot air balloon rides

APPENDIX 9 ~ HAZARD MITIGATION ACTION PLAN

Legend for Hazard Mitigation Action Plan Table		
* Hazards		
CD – Civil Disturbance	FL – Flooding	PN – Petroleum/Natural Gas Pipeline/Well
D – Drought	HM – Hazardous Materials Accidents	SWW – Severe Winter Weather
ES – Earthquake/Subsidence	IF – Infrastructure Failure	SSW – Severe Summer Weather
EXT – Extreme Temperatures	NPP – Nuclear Power Plant Accident	TA – Transportation Accidents
FI - Fires	PH – Public Health Emergencies	TE – Terrorism/Sabotage/WMD
* Agencies		
EM – Emergency Management	HLS – Homeland Security Grant	MSUE – MI State University Extension
FEMA – Federal Emergency Management Agency	MDEQ – MI Dept. of Environmental Quality	NRCS – Natural Resource Conservation Service
GIS Dept. – County Planning and GIS Department	MDOT – MI Dept of Transportation	SWMC – Southwestern Michigan Commission

HAZARD MITIGATION ACTION PLAN

Action	Priority	Hazard Mitigated*	Jurisdiction(s)	Partnering Agencies	Potential Funding Sources	Time Frame
Municipal officials should encourage new developments (especially in densely populated areas) to bury utility lines.	High	SWW, SSW	County-wide	Local municipalities (planning commissions), Berrien County Planning Commission	Developers (cost depends on many factors)	On-going
Replace undersized culverts to reduce flooding, increase accessibility for emergency vehicles and to lessen erosion and possible future failure of the road. 1. Pipestone Twp, Sec 15, Bailey Road north of Town Hall Road and 2. Pipestone Twp, Sec. 4, Black Lake Road, East of Michael Road	High	FL	Pipestone Township	County Road Commission, Drain Commission, EM	Drain Commission, Road Commission, EM, hazard mitigation grants 1. \$15,000-\$20,000 2. \$20,000-\$25,000	1. 2005-06 2. 2006
Evaluate the need for expanded warning siren coverage.	Low	All	County-wide	EM, Local Municipalities	EM staff time, local officials	2006
Encourage home and business owners to secure roofs, walls and foundations with adequate fasteners or tie downs, strengthen garage doors and other large openings, install storm shutters and storm windows, install/incorporate backup power supplies. Proper building site design and code enforcement for snow loads, roof slope, etc. Home and public building maintenance to prevent roof and wall damage from ice dams.	High	SWW, SSW	County-wide	EM, Red Cross, Economic Development staff, Municipal Officials, code enforcers	Homeowners	On-going
Investigate building codes/incentives for adequacy for tornadoes, high winds and other natural disasters.	Medium	SSW, SWW, EXT	County-wide (priority faster growing communities)	SWMC, EM, Mitigation Sub-committee, municipal officials	Staff and committee time	2005-2009
Encourage housing codes requiring and enforcing heating requirements.	Medium	EXT	County-wide	Local municipalities, Area Agency on Aging, mitigation sub-committee	Staff and committee time	2006

HAZARD MITIGATION ACTION PLAN

Action	Priority	Hazard Mitigated*	Jurisdiction(s)	Partnering Agencies	Potential Funding Sources	Time Frame
Examine local government master plans, zoning ordinances and other documents and policies for level of preventative and other measures to be a disaster resistant community.	Medium	All	County-wide (priority faster growing communities)	SWMC, EM, mitigation Sub-committee, municipal officials	Staff and committee time	2005 - 2009
Encourage local governments to include hazard mitigation concepts in the development of their comprehensive plans. Distribute progress report to all units of government, encouraging further involvement in mitigation planning. Integrate report into a comprehensive biannual plan evaluation. Assist interested local governments in pursuing hazard mitigation plans.	High	All	County-wide	EM, hazard mitigation sub-committee, local municipalities	Unknown	2005-2009
If not already in place, encourage local governments to require that mobile home parks have storm shelters with enough capacity to adequately protect all residents of the development. Assist local governments in applying for pre-disaster mitigation funds to construct tornado shelters in mobile home parks when needed.	Medium	SSW	County-wide (see Figure 15 for locations of mobile home parks)	EM, Red Cross, local municipalities	Staff time	2006
Install back flow prevention devices on fire hydrants.	Low	TE, PH	County-wide (in populated areas)	Fire Departments, Local Municipalities	Fire departments, HLS grants	2007
Encourage and promote homeland security training of responders and government officials.	High	All	County-wide	EM, Lake Michigan College	Responders, HLS grants	On-going
Conduct annual damage assessment training for local officials and others in need of training.	High	All	County-wide	EM, Disaster Committee, Local Municipalities	HLS grants	2005 (on-going)
Purchase and install generator at Eau Claire Village Hall for public safety services.	High	IF, SSW, SWW, EXT	Eau Claire Village	Eau Claire Village, SWMC (assistance with grant writing)	Hazard Mitigation Grant, Eau Claire Village	2005-2006
Expand the County GIS capabilities to assess critical facilities that are affected by several hazards.	High	All	County-wide	County GIS Dept., EM, local municipalities, SWMC	HLS grants, Berrien County, local municipalities, SWMC	2005-2009
Develop comprehensive watershed management plans and policies for Berrien County, considering the connections between land-use, urban growth, and surface water, and ground water issues.	Medium	FL, PH	County-wide	Berrien County, local municipalities, drain commissioner, MDEQ, watershed groups, SWMC	MDEQ, Berrien County, local municipalities, SWMC	2004-2009
Update FEMA flood prone maps for Berrien County.	High	FL	County-wide (participating municipalities)	FEMA, GIS Dept., local municipalities	FEMA	2004-2005
Identify (map), conserve, and restore land of potential flood mitigation value. Lands of potential flood mitigation value are wetlands, floodplain corridors, upland storage, and areas of high infiltration potential.	Medium	FL	County-wide	Berrien GIS Dept., local municipalities, drain commissioner, MDEQ, watershed groups	MDEQ grants, FEMA, County, local	2006
Discuss formation of a policy that guides or further restricts development around flood prone areas and areas of high flood mitigation value. Lands of potential flood mitigation value are wetlands, floodplain corridors, upland storage, and areas of high infiltration potential.	Medium	FL	County-wide	Berrien County, local municipalities, drain commissioner, MDEQ, watershed groups	MDEQ grants, FEMA, County, local	2007

HAZARD MITIGATION ACTION PLAN

Action	Priority	Hazard Mitigated*	Jurisdiction(s)	Partnering Agencies	Potential Funding Sources	Time Frame
Evaluate the County's and other units of governments' erosion control and stormwater management, floodplain zoning, and shore land zoning ordinances, and NFIP status to determine regulatory deficiencies, necessary improvements, and enforcement shortcomings in order to bring governments into compliance and to strengthen and maximize the benefits of current regulations.	High	FL	County-wide (priority on Galien Watershed)	SWMC, local municipalities, county planning dept., FEMA, MDEQ, watershed groups	MDEQ, SWMC, Local Municipalities	2005-2009
Improve regional stormwater management practices to minimize localized flooding. Flood management and stormwater management should form a single integrated system over the entire watershed. The streams and waterways of a watershed must be capable of carrying present and future runoff loads generated by all of the existing and future planned development patterns within the watershed. The County is uniquely situated to coordinate and facilitate projects that involve watershed or multi-jurisdictional efforts.	High	FL	County-wide (especially in Phase II regulated area)	Drain commissioner, MDEQ, local municipalities, watershed groups	County, local, grants for innovative stormwater management practices (Great Lakes Basin, etc.)	2004-2009
Promote low impact development techniques that reduce stormwater run-off and lessens flooding.	High	FL, PH	County-wide	SWMC, watershed groups, drain commissioner, local municipalities, MDEQ	MDEQ, local	2005-2009
Improve citizen and local elected officials understanding of floodplain maps and floodplain regulations, flood proofing options, development and stormwater management considerations, and other information to assist in good decision-making.	High	FL	County-wide (priority on Galien Watershed)	SWMC, local municipalities, county planning dept., FEMA, MDEQ, watershed groups	Unknown	2005-2009
The County should encourage local units of government to apply structural hazard mitigation and sustainability concepts when building or remodeling their facilities.	Medium	All	County-wide	EM, County Planning Dept.	Unknown	On-going
Encourage all critical facilities to employ hazard mitigation and sustainability concepts when building or remodeling their facilities. Encourage critical facilities to plan for power outages and install back up power supplies. This should include an assessment of the applicability of renewable energy sources as a potential power supply.	Medium	All	County-wide	EM, County Administration, local municipalities	Unknown	On-going